



DISIS-2016-002-1

Definitive Interconnection System Impact Study Report

Group 6 Restudy

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By Generator Interconnections Dept.

REVISION HISTORY

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CONTENTS

Revision History.....	i
Contents.....	2
Section 1: Introduction.....	1
Section 2: Model Development (study assumptions).....	2
Subsection A: Interconnection Requests Included in the Cluster.....	2
Subsection B: Affected System Interconnection Request	2
Subsection C: Previously Queued Interconnection Requests.....	2
Subsection D: Development of Base Cases.....	2
Power Flow	2
Dynamic Stability	2
Short Circuit	3
Base Case Upgrades	3
Contingent Upgrades	4
Potential Upgrades Not in the Base Case	4
Regional Groupings.....	5
Subsection E: Development of Analysis Cases.....	5
Power Flow	5
Dynamic Stability	5
Short Circuit	6
Section 3: Identification of Network Constraints (System Performance).....	7
Subsection A: Thermal Overloads.....	7
Subsection B: Voltage	7
Subsection C: Dynamic Stability.....	8
Subsection D: Upgrades Assigned.....	9
Section 4: Determination of Cost Allocated Network Upgrades	10
Subsection A: Credits/Compensation for Amounts Advanced for Network Upgrades	10
Section 5: Required Interconnection Facilities	11
Subsection A: Facilities Analysis.....	11
Subsection B: Environmental Review	11
Section 6: Affected Systems Coordination.....	12
Section 7: Power Flow Analysis.....	13

Subsection A: Power Flow Analysis Methodology	13
Subsection B: Power Flow Analysis	13
Section 8: Power Flow Results	14
Subsection A: Cluster Scenario	14
Cluster Group 6 (South Texas Panhandle/New Mexico Area)	14
Subsection B: Limited Operation	18
Subsection C: Curtailment and System Reliability	18
Section 9: Stability & Short Circuit Analysis	20
9.1 Power Factor Requirements Summary	20
9.2 Cluster Stability and Short-Circuit Summary	20
Cluster Group 6 (South Texas Panhandle/New Mexico Area)	20
Section 10: Conclusion	22
Appendices	23
A: Generation Interconnection Requests Considered for Impact Study	24
B: Prior-Queued Interconnection Requests	25
C: Study Groupings	26
D: Proposed Point of Interconnection One-Line Diagrams	27
E: Cost Allocation per Request	36
F: Cost Allocation per Proposed Study Network Upgrade	37
G-T: Thermal Power Flow Analysis (Constraints Requiring Transmission Reinforcement)	38
G-V: Voltage Power Flow Analysis (Constraints Requiring Transmission Reinforcement)	39
H-T: Thermal Power Flow Analysis (Other Constraints Not Requiring Transmission Reinforcement) ...	40
H-T-AS: Affected System Thermal Power Flow Analysis (constraints for Potential Upgrades)	41
H-V-AS: Affected System Voltage Power Flow Analysis (Constraints for potential upgrades)	42
I: Dynamic Stability Analysis Reports	43
I: Group 6 Dynamic Stability Analysis Report	44

SECTION 1: INTRODUCTION

Pursuant to the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS) for generation interconnection requests received during the DISIS Queue Cluster Window which closed on November 30, 2016. The customers will be referred to in this study as the DISIS Interconnection Customers. This DISIS analyzes the impact of interconnecting new generation totaling 1,020.3 MW to the SPP Transmission System for Group 6. The interconnecting SPP Transmission Owners include:

- Southwestern Public Service (SPS)

The generation interconnection requests included in this System Impact Study are listed in Appendix A by queue number, amount, requested interconnection service type, area, requested interconnection point, proposed interconnection point, and the requested in-service date¹.

The primary objective of this DISIS is to identify the system constraints, transient instabilities, and over-dutied equipment associated with connecting the generation to the area transmission system. The Impact Study and other subsequent Interconnection Studies are designed to identify required Transmission Owner Interconnection Facilities, Network Upgrades and other Direct Assignment Facilities needed to inject power into the grid at each specific point of interconnection.

¹ The generation interconnection requests in-service dates may need to be deferred based on the required lead time for the Network Upgrades necessary. The Interconnection Customers that proceed to the Facility Study will be provided a new in-service date based on the completion of the Facility Study or as otherwise provided for in the GIP.

SECTION 2: MODEL DEVELOPMENT (STUDY ASSUMPTIONS)

SUBSECTION A: INTERCONNECTION REQUESTS INCLUDED IN THE CLUSTER

This DISIS includes all interconnection requests that were submitted during the DISIS Queue Cluster Window that met all of the requirements of the Generator Interconnection Procedures (GIP) that were in effect at the time this study commenced. Appendix A lists the interconnection requests that are included in this study.

SUBSECTION B: AFFECTED SYSTEM INTERCONNECTION REQUEST

Affected System Interconnection Requests included in this study are listed in Appendix A with the “ASGI” prefix. Affected System Interconnection Requests were only studied in “cluster” scenarios.

SUBSECTION C: PREVIOUSLY QUEUED INTERCONNECTION REQUESTS

The previous-queued requests included in this study are listed in Appendix B. In addition to the Base Case Upgrades, the previous-queued requests and associated upgrades were assumed to be in-service and added to the Base Case models. These requests were dispatched as Energy Resource Interconnection Service (ERIS) resources with equal distribution across the SPP footprint. Prior-queued requests that requested Network Resource Interconnection Service (NRIS) were also dispatched in separate NRIS scenarios sinking into the area of the interconnecting transmission owner.

SUBSECTION D: DEVELOPMENT OF BASE CASES

POWER FLOW

The power flow models used for this study are based on the 2016-series Integrated Transmission Planning models used for the 2017 ITP-Near Term analysis. These models include:

- Year 1 2017 winter peak (17WP)
- Year 2 2018 spring (18G)
- Year 2 2018 summer peak (18SP)
- Year 5 2021 light (21L)
- Year 5 2021 summer (21SP)
- Year 5 2021 winter peak (21WP)
- Year 10 2026 summer peak (26SP)

DYNAMIC STABILITY

The dynamic stability models used for this study are based on the 2016-series SPP Model Development Working Group (MDWG) Models. These models include:

- Year 1 2017 winter peak (17WP)
- Year 2 2018 summer peak (18SP)
- Year 10 2026 summer peak (26SP)

SHORT CIRCUIT

The Year 2 and Year 10 dynamic stability summer peak models were used for short-circuit analysis.

BASE CASE UPGRADES

The facilities listed in the table below are part of the current SPP Transmission Expansion Plan, the Balanced Portfolio, or recently approved Priority Projects. These facilities have an approved Notification to Construct (NTC) or are in construction stages and were assumed to be in-service at the time of dispatch and added to the base case models. The DISIS Interconnection Customers have not been assigned advancement costs for the projects listed below.

The DISIS Interconnection Customers' Generation Facilities in-service dates may need to be delayed until the completion of the following upgrades. In some cases, the in-service date is beyond the allowable time a customer can delay. In this case, the Interconnection Customer may move forward with Limited Operation or remain in the DISIS Queue for additional study cycles. If, for some reason, construction on these projects is discontinued, additional restudies will be needed to determine the interconnection needs of the DISIS Interconnection Customers.

NTC	UID	TO	Upgrade	Estimated Date of Upgrade Completion (EOC)
200360	50957	SPS	Intrepid West - Potash Junction 115 kV Ckt 1 Rebuild	4/15/2019
200360	51250	SPS	National Enrichment Plant - Targa 115 kV Ckt 1	4/5/2019
200391	51528	OGE	DeGrasse 345 kV Substation	6/1/2019
200391	51529	OGE	DeGrasse 345/138 kV Transformer	6/1/2019
200391	51530	OGE	DeGrasse - Knob Hill 138 kV New Line	6/1/2019
200391	51569	OGE	DeGrasse 138 kV Substation (OGE)	6/1/2019
200220	50442	NPPD	Cherry Co. (Thedford) - Gentleman 345 kV Ckt 1	1/1/2021
200220	50444	NPPD	Cherry Co. (Thedford) Substation 345 kV	1/1/2021
200220	50445	NPPD	Cherry Co. (Thedford) - Holt Co. 345 kV Ckt 1	1/1/2021
200220	50446	NPPD	Holt Co. Substation 345 kV	1/1/2021
200309	50457	SPS	Hobbs - Yoakum 345 kV Ckt 1	6/1/2020
200395	50447	SPS	TUCO - Yoakum 345 kV Ckt 1	6/1/2020
200395	50451	SPS	Yoakum 345/230 kV Ckt 1 Transformer	6/1/2019
200282	50869	SPS	China Draw - Yeso Hills 115 kV Ckt 1	12/30/2023
200369	51481	SPS	Canyon East Tap - Randall 115 kV Ckt 1 Rebuild	5/15/2020
200396	51531	WFEC	DeGrasse 138 kV Substation (WFEC)	12/31/2019
200395	50920	SPS	Seminole 230/115 kV #1 Transformer	11/14/2019
200262	51039	SPS	Yoakum County Interchange 230/115 kV Ckt 1 Transformer	3/15/2019
200395	50921	SPS	Seminole 230/115 kV #2 Transformer	5/14/2019
200262	51050	SPS	Yoakum County Interchange 230/115 kV Ckt 2 Transformer	5/31/2019
210507	102156	SPS	Eddy County-Kiowa 345 kV circuit 1	6/1/2024

CONTINGENT UPGRADES

The following facilities do not yet have approval. These facilities have been assigned to higher-queued interconnection customers. These facilities have been included in the models for this study and are assumed to be in service. This list may not be all-inclusive. The DISIS Interconnection Customers, at this time, do not have cost responsibility for these facilities but may later be assigned cost if higher-queued customers terminate their Generation Interconnection Agreement or withdraw from the interconnection queue. The DISIS Interconnection Customer Generation Facilities in-service dates may need to be delayed until the completion of the following upgrades.

Assigned Study	Upgrade Name	Estimated Date of Upgrade Completion (EOC)
DISIS-2015-002	Beatrice - Harbine 115 kV Ckt 1	TBD
DISIS-2015-002	Belvidere - Fairbury 115 kV CKT 1	TBD
DISIS-2015-002	Border 345 kV 100 MVAR Capacitive Reactive Power Support	TBD
DISIS-2015-002	Cleo Corner - Cleo Plnt Tap 138 kV CKT 1	TBD
DISIS-2015-002	Cleveland - Silver City 138 kV CKT 1	TBD
DISIS-2015-002	Deaf Smith - Plant X 230 kV Ckt 1 Rebuild	TBD
DISIS-2015-002	Deaf Smith 230 kV 60 MVAR Capacitive Reactive Power Support	TBD
DISIS-2015-002	Dickinson 230/115 kV CKT 2	TBD
DISIS-2015-002	Gavins Point - Yankon Junction 115 kV	TBD
DISIS-2015-002	Grapevine - Wheeler 230 kV Ckt 1 Terminal Equipment (SPS)	TBD
DISIS-2015-002	Newhart - Plant X 230 kV Ckt 1 Rebuild	TBD
DISIS-2015-002	Oklunion 345 kV 100 MVAR Capacitive Reactive Power Support	TBD
DISIS-2015-002	Sweetwater - Wheeler 230 kV Ckt 1 Rebuild (AEPW)	TBD
DISIS-2015-002	Sweetwater - Wheeler 230 kV Ckt 1 Terminal Equipment (SPS)	TBD
DISIS-2016-001	Ranch Road - Sooner 345 kV Ckt 1 Terminal Upgrades	TBD
DISIS-2016-001	Sidney - Keystone 345 kV Ckt 2	TBD
DISIS-2016-001	Beaver County - Clark County 345 kV CKT 1 New Line	TBD
DISIS-2016-001	Keystone - Gentleman 345 kV CKT 2	TBD
DISIS-2016-001	Tolk - Crawfish Draw 345 kV CKT 1 New Line	TBD
DISIS-2016-001	Tolk - Potter County 345 kV CKT 1 New Line	TBD
DISIS-2016-001	Wolf Creek - Emporia 345 kV Ckt 1 New Line	TBD
DISIS-2016-001	Cottonwood Creek - G16-032-Tap 138 kV Ckt 1 Rebuild	TBD
DISIS-2016-001	Andrews 230/115/13 kV Transformer CKT 1	TBD
DISIS-2016-001	Andrews 230/115/13 kV Transformer CKT 2	TBD
DISIS-2016-001	Border - Chisholm 345 kV CKT 1 New Line	TBD
DISIS-2016-001	Crawfish Draw 345 kV Substation	TBD
DISIS-2016-001	Greenburg 115 kV 10 MVAR Capacitive Reactive Power Support	TBD
DISIS-2016-001	Oklunion 345 kV 20 MVAR Capacitive Reactive Power Support	TBD
DISIS-2016-001	Shamrock 69 kV 10 MVAR Capacitive Reactive Power Support	TBD

POTENTIAL UPGRADES NOT IN THE BASE CASE

Any potential upgrades that do not have a Notification to Construct (NTC) and are not explicitly listed within this report have not been included in the base case. These upgrades include any identified in the SPP Extra-High Voltage (EHV) overlay plan, or any other SPP planning study other than the upgrades listed above in the previous section.

REGIONAL GROUPINGS

The interconnection requests listed in Appendix A are grouped into sixteen (16) active regional groups based on geographical and electrical impacts. These groupings are shown in Appendix C. This restudy is a study of regional grouping(s) 6 (South Texas Panhandle/New Mexico Area) only.

SUBSECTION E: DEVELOPMENT OF ANALYSIS CASES

POWER FLOW

For Variable Energy Resources (VER) (solar/wind) in each power flow case, ERIS, is evaluated for the generating plants within a geographical area of the interconnection request(s) for the VERs dispatched at 100% nameplate of maximum generation. The VERs in the remote areas are dispatched at 20% nameplate of maximum generation in the models. These projects are dispatched across the SPP footprint using load factor ratios.

Peaking units are not dispatched in the spring case, or in the “High VER” summer and winter peak cases. To study peaking units’ impacts, the Year 1 winter peak and Year 2 summer peak, Year 5 summer and winter peaks, and Year 10 summer peak models are developed with peaking units dispatched at 100% of the nameplate rating and VERs dispatched at 20% of the nameplate rating. Each interconnection request is also modeled separately at 100% nameplate for certain analyses.

All generators (VER and peaking) that requested NRIS are dispatched in an additional analysis into the interconnecting Transmission Owner’s (T.O.) area at 100% nameplate with ERIS only requests at 80% nameplate. This method allows for identification of network constraints that are common between regional groupings to have affecting requests share the mitigating upgrade costs throughout the cluster.

Each interconnection request is included in the power flow analysis models as an equivalent generator(s) dispatched at the applicable percentage of the requested service amount with 0.95 power factor capability. The facility modeling includes explicit representation of equivalent Generator Step-Up (GSU) and main project transformer(s) with impedance data provided in the interconnection request. Equivalent collector system(s) as well as transmission lead line(s) shorter than 20 miles are added to the power flow analysis models with zero impedance branches.

DYNAMIC STABILITY

For each group, all interconnection requests are dispatched at 100% nameplate output while the other groups are dispatched at 20% output for VERs and 100% output for thermal requests.

- Each study group includes system adjustments of dispatching, to maximum output, generation interconnected at the same or adjacent substations to a current study request within that group.
- Study Group 9 includes an additional dispatch scenario (GGSSI) to evaluate the Gerald Gentleman Station registered NERC flowgate #6006.
- Study Group 16 includes system adjustments for the Miles City DC Tie, North Dakota – Canadian border – The phase shifting transformer to Saskatchewan Power (also known as B-10T), and reduction of WAPA (area 652) load and generation:

- 2017 Winter Peak –
 - Miles City DC Tie– 200MW East to West transfer
 - B-10T – 65MW South to North transfer
- 2018 Summer Peak –
 - Miles City DC Tie – 200MW East to West transfer
 - B-10T – 200MW North to South transfer
 - 1,100 MW reduction to load and generation (proxy for summer shoulder)
- 2026 Summer Peak –
 - Miles City DC Tie – 200MW East to West transfer

Each interconnection request is included in the dynamic stability analysis models as an equivalent generator(s) dispatched at the applicable percentage of the aggregate generator nameplate capabilities provided in the interconnection request. The facility modeling includes explicit representation of equivalent Generator Step-up (GSU) transformer(s), equivalent collector system(s), main project transformer(s), and transmission lead line(s) with impedance data provided in the interconnection request.

SHORT CIRCUIT

The Year 2 and Year 10 dynamic stability Summer Peak models were used for this analysis.

SECTION 3: IDENTIFICATION OF NETWORK CONSTRAINTS (SYSTEM PERFORMANCE)

SUBSECTION A: THERMAL OVERLOADS

Network constraints are found by using PSS/E AC Contingency Calculation (ACCC) analysis with PSS/E MUST First Contingency Incremental Transfer Capability (FCITC) analysis on the entire cluster grouping dispatched at the various levels previously described.

For ERIS, thermal overloads are determined for system intact (n-0) greater than 100% of Rate A - normal and for contingency (n-n) greater than 100% of Rate B – emergency conditions.

The overloads are then screened to determine which interconnection requests have at least

- 3% Distribution Factor (DF) for system intact conditions (n-0),
- 20% DF upon outage-based conditions (n-n),
- or 3% DF on contingent elements that resulted in a non-converged solution.

Appropriate transmission reinforcements are identified to mitigate the constraints.

Interconnection Requests that requested NRIS are also studied in a separate NRIS analysis to determine if any constraint measured greater than or equal to a 3% DF. If so, these constraints are also assigned transmission reinforcements to mitigate the impacts.

SUBSECTION B: VOLTAGE

For non-converged power flow solutions that are determined to be caused by lack of voltage support, appropriate transmission support will be identified to mitigate the constraint.

After all thermal overload and voltage support mitigations are determined; a full ACCC analysis is then performed to determine voltage constraints. The following voltage performance guidelines are used in accordance with the Transmission Owner local planning criteria.

SPP voltage criteria is applicable to all SPP facilities 69 kV and greater in the absence of more stringent criteria:

System Intact	Contingency
0.95 – 1.05 per unit	0.90 – 1.05 per unit

Areas and specific buses having more-stringent voltage criteria:

Areas/Facilities	System Intact	Contingency
AEPW – all buses EMDE High Voltage	0.95 – 1.05 per unit	0.92 – 1.05 per unit
WERE Low Voltage	0.95 – 1.05 per unit	0.93 – 1.05 per unit
WERE High Voltage	0.95 – 1.05 per unit	0.95 – 1.05 per unit
TUCO 230 kV Bus #525830	0.925 – 1.05 per unit	0.925 – 1.05 per unit
Wolf Creek 345 kV Bus #532797	0.985 – 1.03 per unit	0.985 – 1.03 per unit
FCS Bus #646251	1.001 – 1.047 per unit	1.001 – 1.047 per unit

First-Tier External Areas facilities 115 kV and greater.

Area	System Intact	Contingency
EES-EAI LAGN EES AMMO CLEC LAFA LEPA XEL MP SMMPA GRE OTP ALTW MEC MDU DPC ALTE	0.95 – 1.05 per unit	0.90 – 1.05 per unit
OTP-H (115kV+)	0.97 – 1.05 per unit	0.92 – 1.10 per unit
SPC	0.95 – 1.05 per unit	0.95 – 1.05 per unit

The constraints identified through the voltage scan are screened for the following for each interconnection request. 1) 3% DF on the contingent element and 2) 2% change in pu voltage. In certain conditions, engineering judgement was used to determine whether or not a generator had impacts to voltage constraints.

SUBSECTION C: DYNAMIC STABILITY

Stability issues are considered for transmission reinforcement under ERIS. Generators that fail to meet low voltage ride-through requirements (FERC Order #661-A) or SPP’s stability requirements for damping or dynamic voltage recovery are assigned upgrades such that these requirements can be met.

SUBSECTION D: UPGRADES ASSIGNED

Thermal overloads that require transmission support to mitigate are discussed in Section 8 and listed in Appendix G-T (Cluster Analysis). Voltage constraints that may require transmission support are discussed in Section 8 and listed in Appendix G-V (Cluster Analysis). Constraints that are identified solely through the stability analysis are discussed in Section 9 and the appropriate appendix for the detailed stability study of that Interconnection Request. All of these upgrades are cost assigned in Appendix E and Appendix F.

Other network constraints not requiring transmission reinforcements are shown in Appendix H-T (Cluster Analysis). With a defined source and sink in a Transmission Service Request, this list of network constraints can be refined and expanded to account for all Network Upgrade requirements for firm transmission service.

In no way does the list of constraints in Appendix G-T (Cluster Analysis) identify all potential constraints that guarantee operation for all periods of time. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer(s) may be required to reduce their generation output to 0 MW, also known as curtailment, under certain system conditions to allow system operators to maintain the reliability of the transmission network.

SECTION 4: DETERMINATION OF COST ALLOCATED NETWORK UPGRADES

Cost Allocated Network Upgrades of Variable Energy Resources (VER) (solar/wind) generation interconnection requests are determined using the Year 2 spring model. Cost Allocated Network Upgrades of peaking units are determined using the Year 5 summer peak model. A PSS/E and MUST sensitivity analysis is performed to determine the DF with no contingency that each generation interconnection request has on each new upgrade. The impact each generation interconnection request has on each upgrade project is weighted by the size of each request. Finally, the costs due by each request for a particular project are then determined by allocating the portion of each request's impact over the impact of all affecting requests.

For example, assume that there are three Generation Interconnection requests, X, Y, and Z that are responsible for the costs of Upgrade Project '1'. Given that their respective PTDF for the project have been determined, the cost allocation for Generation Interconnection request 'X' for Upgrade Project 1 is found by the following set of steps and formulas:

Determine an impact factor for a given project for all responsible GI requests:

$$\text{Request X Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(X) \times \text{MW}(X) = X1$$

$$\text{Request Y Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(Y) \times \text{MW}(Y) = Y1$$

$$\text{Request Z Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(Z) \times \text{MW}(Z) = Z1$$

Determine each request's Allocation of Cost for that particular project:

$$\text{Request X's Project 1 Cost Allocation (\$)} = \frac{\text{Network Upgrade Project 1 Cost (\$)} \times X1}{X1 + Y1 + Z1}$$

Repeat previous for each responsible GI request for each Project.

The cost allocation of each needed Network Upgrade is determined by the size of each request and its impact on the given project. This allows for the most efficient and reasonable mechanism for sharing the costs of upgrades.

SUBSECTION A: CREDITS/COMPENSATION FOR AMOUNTS ADVANCED FOR NETWORK UPGRADES

Interconnection Customer shall be entitled to either credits or potentially incremental Long Term Congestion Rights (iLTCR), otherwise known as compensation, in accordance with Attachment Z2 of the SPP Tariff for any Network Upgrades, including any tax gross-up or any other tax-related payments associated with the Network Upgrades, and not refunded to the Interconnection Customer.

SECTION 5: REQUIRED INTERCONNECTION FACILITIES

The requirement to interconnect the requested generation into the existing and proposed transmission systems in the affected areas of the SPP transmission footprint consist of the necessary cost allocated shared facilities listed in Appendix F by upgrade. The interconnection requirements for Group 6 totals an estimated **\$758.1 million**.

Interconnection Facilities specific to each interconnection request are listed in Appendix E. A preliminary one-line diagram for each request is listed in Appendix D.

For an explanation of how required Network Upgrades and Interconnection Facilities were determined, refer to the section on “Identification of Network Constraints.”

SUBSECTION A: FACILITIES ANALYSIS

The interconnecting Transmission Owner for each Interconnection Request has provided its preliminary analysis of required Transmission Owner Interconnection Facilities and the associated Network Upgrades, shown in Appendix D. This analysis was limited only to the expected facilities to be constructed by the Transmission Owner at the Point of Interconnection. These costs are included in the one-line diagrams in Appendix D and also listed in Appendix E and F as combined “Interconnection Costs”. If the one-lines and costs in Appendix D have been updated by the Transmission Owner’s Interconnection Facilities Study, those costs will be noted in the appendix. These costs will be further refined by the Transmission Owner as part of the Interconnection Facilities Study. Any additional Network Upgrades identified by this DISIS beyond the Point of Interconnection are defined and estimated by either the Transmission Owner or by SPP. These additional Network Upgrade costs will also be refined further by the Transmission Owner within the Interconnection Facilities Study.

SUBSECTION B: ENVIRONMENTAL REVIEW

For Interconnection Requests that result in an interconnection to, or modification to, the transmission facilities of the Western-UGP, a National Environmental Policy Act (NEPA) Environmental Review will be required. The Interconnection Customer will be required to execute an Environmental Review Agreement per Section 8.6.1 of the GIP.

SECTION 6: AFFECTED SYSTEMS COORDINATION

The following procedures are in place to coordinate with Affected Systems.

- Impacts on Associated Electric Cooperative Inc. (AECI) – For any observed violations of thermal overloads on AECI facilities, AECI has been notified by SPP to evaluate the violations for impacts on its transmission system.
- Impacts on Midcontinent Independent System Operator (MISO) – Per SPP’s agreement with MISO, MISO will be contacted and provided a list of interconnection requests that proceed to move forward into the Interconnection Facilities Study Queue. MISO will then evaluate the Interconnection Requests for impacts and will be in contact with affected Interconnection Customers. For potential impacts see Appendix H-T – Affected System and Appendix H-V – Affected System.
- Impacts on Minnkota Power Cooperative, Inc (MPC) – MPC will be contacted and provided a list of interconnection requests that proceed to move forward into the Interconnection Facilities Study Queue. MPC will then evaluate the Interconnection Requests for impacts. For potential impacts see Appendix H-T – Affected System and Appendix H-V – Affected System.
- Impacts to other affected systems – For any observed violations of thermal overloads or voltage constraints, SPP will contact the owner of the facility for further information.

SECTION 7: POWER FLOW ANALYSIS

SUBSECTION A: POWER FLOW ANALYSIS METHODOLOGY

The ACCC function of PSS/E is used to simulate single element and special (i.e., breaker-to-breaker, multi-element, etc.) contingencies in portions or all of the modeled control areas of SPP as well as control areas external to SPP.

SUBSECTION B: POWER FLOW ANALYSIS

A power flow analysis is conducted for each Interconnection Customer's facility using modified versions of the year 1 winter peak season, the year 2 spring, year 2 summer peak season, year 5 summer and winter peak seasons, year 5 light load season, and year 10 summer peak seasonal models. The output of the Interconnection Customer's facility is offset in each model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an ERIS request. Requests that are pursuing NRIS have an additional analysis conducted for displacing resources in the interconnecting Transmission Owner's balancing area.

SECTION 8: POWER FLOW RESULTS

SUBSECTION A: CLUSTER SCENARIO

The Cluster Scenario considers the Base Case as well as all Interconnection Requests in the DISIS Study Queue and all generating facilities (and with respect to (3) below, any identified Network Upgrades associated with such higher-queued interconnection) that, on the date the DISIS is commenced:

1. are directly connected to the Transmission System;
2. are interconnection to Affected Systems and may have an impact on the Interconnection Request;
3. have a pending higher-queued Interconnection Request to interconnect to the Transmission System; and
4. have no Interconnection Queue Position but have executed a GIA or requested that an unexecuted GIA be filed with FERC.

Constraints and associated mitigations for each Interconnection Request are summarized below. Details are contained in Appendix G-T and Appendix G-V. Cost allocation for the Cluster Scenario is found in Appendix E.

CLUSTER GROUP 6 (SOUTH TEXAS PANHANDLE/NEW MEXICO AREA)

Requests for this study group as well as prior-queued requests are listed in Appendix C.

The following table outlines the incremental mitigation scenarios for Group 6.

Table 8-1 Group 6 Cluster Upgrade Scenarios

Scenario	Constraint Type	Incremental Mitigation
0	Non-Converged	NTC 200395: TUCO - Yoakum 345 kV CKT 1
0	Non-Converged	NTC 210484: Yoakum 345/230 kV Transformer CKT 1
0	Non-Converged	NTC 200309: Hobbs - Yoakum 345 kV CKT 1
0	Non-Converged	NTC 210507: Eddy County - Kiowa 345 kV CKT 1
0	Non-Converged	New Crawfish Draw – Lawton Eastside 345 kV CKT 1
0	Non-Converged	New Chisholm – Grapevine – Potter County 345 kV CKT 1
0	Non-Converged	New 150 Mvar Capacitive Reactive Equipment at Border 345 kV
0	Non-Converged	New 200 Mvar Capacitive Reactive Equipment at Crossroads 345 kV
0	Non-Converged	New 100 Mvar Capacitive Reactive Equipment at Potter 345 kV
2	Thermal	New Crawfish Draw 345/230 kV Transformer CKT 1
2	Thermal	New Potter County 345/230 kV Transformer CKT 2
2	Thermal	Increased Rating of Elk City 230/138 kV Transformer CKT 1
2	Thermal	Increased Rating of Crossroads – Tolk 345 kV CKT 1
2	Thermal	Increased Rating of Crossroads – Eddy 345 kV CKT 1
3	Voltage	New 70 Mvar Capacitive Reactive Equipment at Oklaunion 345 kV

The following ERS Non-Convergence constraints were observed for single contingency (N-1), and multi-contingency (P1, P2, etc.) conditions for Group 6. The table below summarizes constraints and associated mitigations.

Table 8-2 Group 6 Cluster ERS Non-Convergence Constraints

Contingency	Mitigation
"P11:115:533:PRATT_P2:1:539687(P2)"	
"P12:115:SPS:T06.1.SPRMN.PRNGLE"	
"P12:115:SPS:T19.1.TERRY.SULPHUR"	
"P12:115:SPS:T20.1.SEGRVS.SULPHUR"	
"P12:115:SPS:T55.1.DC_N.MUSTG"	
"P12:115:SPS:V32.1.TXSCO.ELB(534)"	
"P12:230:SPS:K45.2.PLANTX.TOLK"	
"P12:230:SPS:K76.1.HITCH.OCLTRE"	
"P12:345:SPS:J01.1.TUCO.OKU(520)"	
"P12:345:SPS:J17.1.TUCO.YOAKUM"	
"P23:345:SUNC:HLC_BRK382"	
"P23:345:SUNC:MG_BRK788"	
"P41:34.5:SPS:BUFF21-GEN-OR85_21S_25S"	
"P42:345:OKGE:SB_BVTY7315"	
"P42:345:OKGE:SB_BVTY7317"	
"P42:345:OKGE:SB_BVTY7385"	NTC 200395: TUCO - Yoakum 345 kV CKT 1
"P42:345:OKGE:SB_CION7384"	
"P42:345:OKGE:SB_MICO7301"	NTC 210484: Yoakum 345/230 kV Transformer CKT 1
"P42:345:OKGE:SB_MICO7311"	
"P42:345:OKGE:SB_MICO7312"	NTC 200309: Hobbs - Yoakum 345 kV CKT 1
"P42:345:OKGE:SB_MICO7381"	
"P42:345:OKGE:SB_WWHV7383"	NTC 210507: Eddy County - Kiowa 345 kV CKT 1
"P42:345:SPS:HOLCOMB-HC382"	
'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'	
'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'	
'BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'	
'BORDER 7345.00 345KV SWITCHED SHUNT'	
'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'	
'BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'	
'BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'	
'BVCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'	
'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'	
'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'	
'CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'	
'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'	

Contingency	Mitigation
'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'	
'CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1'	
'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'	
'CIMARRON - MINCO 345KV CKT 1'	
'CRAWFISH_DR 345.00 - OKLAUNION 345KV CKT 1'	
'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'	
'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'	
'CROSSROADS 7345.00 - TOLK STATION 345KV CKT 1'	
'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'	
'DEAF SMITH COUNTY INTERCHANGE 230KV SWITCHED SHUNT'	
'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'	
'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	
'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'	
'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'	
'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'	
'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'	NTC 200395: TUCO - Yoakum 345 kV CKT 1
'GRACEMONT - MINCO 345KV CKT 1'	
'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'	NTC 210484: Yoakum 345/230 kV Transformer CKT 1
'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'	
'HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1'	NTC 200309: Hobbs - Yoakum 345 kV CKT 1
'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'	
'HOBBS - YOAKUM_345 345.00 345KV CKT 1'	NTC 210507: Eddy County - Kiowa 345 kV CKT 1
'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'	
'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'	
'JONES STATION - TUCO INTERCHANGE 230KV CKT 1'	
'LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'	
'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'	
'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'	
'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'	
'P23:345:AEPW:LAWTON EASTSIDE CB 3425A NBTB-G16091TAP"	
'P42:345:OKGE:SB_BVTY7307-BADGER-G1603TAP"	
'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	
'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'	
'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'	
'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'	
'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'	
'SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'	
'SWISHER COUNTY INTERCHANGE 230KV SWITCHED SHUNT'	
'TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'	

Contingency	Mitigation
'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	NTC 200395: TUCO - Yoakum 345 kV CKT 1 NTC 210484: Yoakum 345/230 kV Transformer CKT 1 NTC 200309: Hobbs - Yoakum 345 kV CKT 1 NTC 210507: Eddy County - Kiowa 345 kV CKT 1
'TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	
'TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	
'TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1'	

The following ERS thermal constraints were observed for single contingency (N-1), and multi-contingency (P1, P2, etc.) conditions for Group 6. The table below summarizes constraints and associated mitigations.

Table 8-3 Group 6 Cluster ERS Thermal Constraints

Monitored Element	Limiting Rate A/B (MVA)	TC %Loading (%MVA)	Contingency	Mitigation
'CROSSROADS 7345.00 - TOLK STATION 345KV CKT 1'	717.06	128.3244	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'	Increased Rating of Crossroads – Tolk 345 kV CKT 1
'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	121.4035	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'	New Potter County 345/230 kV Transformer CKT 2
'TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	644	119.0772	'TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	New Crawfish Draw 345/230 kV Transformer CKT 1
'TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	643	118.1293	'TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	
'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'	1143	105.5371	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 1'	
'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	287	102.2025	System Intact	Increased Rating of Elk City 230/138 kV Transformer CKT 1
'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'	717.06	135.549	'CROSSROADS 7345.00 - TOLK STATION 345KV CKT 1'	Increased Rating of Crossroads – Eddy 345kV CKT 1

The following ERS voltage constraints were observed for single contingency (N-1), and multi-contingency (P1, P2, etc.) conditions for Group 6. The table below summarizes constraints and associated mitigations.

Table 8-4 Group 6 Cluster ERS Voltage Constraints

Monitored Element	TC Voltage (PU)	VMIN (PU)	VMAX (PU)	Contingency	Mitigation
'OKLAUNION 345KV'	0.898356	0.92	1.05	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'	New 70 Mvar Capacitive Reactive Equipment at Oklaunion 345kV
'OKLAUN HVDC7345.00 345KV'	0.898528	0.92	1.05	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'	
'LAWTON EASTSIDE 345KV'	0.918226	0.92	1.05	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'	

SUBSECTION B: LIMITED OPERATION

Limited Operation results are listed below. While these results are based on the criteria listed in GIP 8.4.3, the Interconnection Customer may request additional scenarios for Limited Operation based on higher queued Interconnection Requests not being placed in service. Please refer to Section 8 Subsection A for power flow constraint mitigation.

Table 8-5: Limited Operation Results

Interconnection Request	MW Requested	LOIS Available (MW)
ASGI-2016-009	3.0	0
GEN-2015-099	70.4	0
GEN-2016-121	110.0	0
GEN-2016-123	298.0	0
GEN-2016-124	150.0	0
GEN-2016-125	74.0	0
GEN-2016-171	60.8	0
GEN-2016-172	231.0	0
GEN-2016-177	17.0	0

SUBSECTION C: CURTAILMENT AND SYSTEM RELIABILITY

In no way does this study guarantee operation for all periods of time. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer(s) may be required to reduce their generation output to 0 MW, also known as curtailment, under

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certain system conditions to allow system operators to maintain the reliability of the transmission network.

SECTION 9: STABILITY & SHORT CIRCUIT ANALYSIS

A stability and short-circuit analysis was conducted for each Interconnection Request using modified versions of the MDWG Models dynamic cases. The stability analysis assumes that all upgrades identified in the power flow analysis are in-service unless otherwise noted in the individual group stability study.

For each group, the interconnection requests are studied at 100% nameplate output while the other groups are dispatched at 20% output for Variable Energy Resource (VER) requests and 100% output for other requests. The output of the Interconnection Customer's facility is offset in each model by a reduction in output of existing online SPP generation.

A synopsis is included for each group. The detailed stability study for each group can be found in the Appendices.

A preliminary short-circuit analysis was performed for this study and will be refined in the Interconnection Facilities Study with any additional required upgrades and cost assignment identified at that time.

9.1 POWER FACTOR REQUIREMENTS SUMMARY

Power factor requirements will be in accordance with FERC Order No. 827, Final Rule, Issued June 16, 2016.

9.2 CLUSTER STABILITY AND SHORT-CIRCUIT SUMMARY

CLUSTER GROUP 6 (SOUTH TEXAS PANHANDLE/NEW MEXICO AREA)

New requests for this study group as well as prior-queued requests are listed in Appendix C.

The Group 6 cases included the following system adjustments of dispatching, to maximum output, generation interconnected at the same or adjacent substations to a current study request:

- Mustang units
- TUCO units
- Tolk units: GEN-2016-123, GEN-2016-124, & GEN-2016-125
- Hobbs units: GEN-2016-171
- Plant X units: GEN-2016-172

The Group 6 stability analysis for this area was performed by Mitsubishi Electric Power Products (MEPPI). With the new requests modeled and the minimum required reactive equipment to achieve a network solution following dispatch (900 MVAR of shunt capacitors), violations of stability damping criteria and voltage recovery criteria were observed.

Upgrades identified in the power flow analysis were also tested in the stability analysis. To mitigate the voltage instability, violations of voltage recovery criteria, and generation tripping off the following upgrades were implemented in each season:

- NTC 200309 (Hobbs-Yoakum 345 kV circuit 1)
- NTC 200395 (TUCO-Yoakum 345 kV circuit 1)
- NTC 210484 (Yoakum 345/230 kV transformer circuit 1)
- NTC 210507 (Eddy County-Kiowa 345 kV circuit 1)
- DISIS-2016-001 out-of-group upgrade Beaver-Clark County 345 kV circuit 1
- Chisholm-Potter County 345 kV circuit 1
- Crawfish Draw-Lawton Eastside 345 kV circuit 1
- Removal of reactive equipment for dispatch (900 MVAR of shunt capacitors)
- Border: 50 MVAR of switched shunt capacitors at 345 kV bus (150 MVAR total)
- Crawfish Draw: 200 MVAR of switched shunt capacitors at 345 kV and +225/-150 MVAR SVC injection at 345 kV bus
- Crossroads: 200 MVAR of switched shunt capacitors at 345 kV bus
- Oklaunion: 130 MVAR of switched shunt capacitors at 345 kV bus (250 MVAR total in addition to HVDC equipment) and +300/-150 MVAR SVC injection at 345 kV bus
- Potter County: 100 MVAR of switched shunt capacitors at 345 kV bus

It should be noted that for certain system conditions curtailment may be necessary to maintain system stability for potential circuit outages including TPL-001-4 P6 and P7 events.

With all previously-assigned and currently-assigned Network Upgrades placed in service and identified system adjustments applied, no violations were observed, including violations of low-voltage ride-through requirements, for the probable contingencies studied.

SECTION 10: CONCLUSION

The minimum cost of interconnecting all Group 6 generation interconnection requests included in this Definitive Interconnection System Impact Restudy is estimated at **\$758.1 million**, not including the exceptions noted in Section 5.

Allocated costs for Network Upgrades and Transmission Owner Interconnection Facilities are listed in Appendix E and F. For Interconnection Requests that result in an interconnection to, or modification of, the transmission facilities of the Western-UGP (WAPA), a National Environmental Policy Act (NEPA) Environmental Review will be required. The Interconnection Customer will be required to execute an Environmental Review Agreement per Section 8.6.1 of the GIP.

These costs do not include the cost of upgrades of other transmission facilities listed in Appendix H which are Network Constraints. These interconnection costs do not include any cost of any Network Upgrades that are identified as required through the short circuit analysis. Potential over-duty circuit breakers capability will be identified by the Transmission Owner in the Interconnection Facilities Study.

The Interconnection Facilities Study will be revised, if needed, following the posting of this DISIS. The Interconnection Facilities Study may include additional study analysis, additional facility upgrades not yet identified by this DISIS, such as circuit breaker replacements and affected system facilities, and further refinement of existing cost estimates.

The required interconnection costs listed in Appendices E, and F, and other upgrades associated with Network Constraints do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request (TSR) through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP Open Access Transmission Tariff (OATT).

APPENDICES

A: GENERATION INTERCONNECTION REQUESTS CONSIDERED FOR IMPACT STUDY

B: PRIOR-QUEUED INTERCONNECTION REQUESTS

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2002-008	720.00	SPS	Hitchland 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2002-008IS	40.50	WAPA	Edgeley 115kV [Pomona 115kV]	Commercial Operation
GEN-2002-009	79.80	SPS	Hansford 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2002-009IS	40.00	WAPA	Ft Thompson 69kV [Hyde 69kV]	Commercial Operation
GEN-2002-022	478.40	SPS	Bushland 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2002-025A	150.00	SUNCMKEC	Spearville 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-004	100.00	WFEC	Washita 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-005	200.00	WFEC	Anadarko - Paradise (Blue Canyon) 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-006A	403.20	SUNCMKEC	Elm Creek 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-019	500.00	MIDW	Smoky Hills Tap 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-020	318.20	SPS	Martin 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-021N	150.00	NPPD	Ainsworth Wind Tap 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2003-022	120.00	AEPW	Weatherford 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2004-020	27.00	AEPW	Weatherford 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2004-023	20.60	WFEC	Washita 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2004-023N	75.00	NPPD	Columbus Co 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2005-003	30.60	WFEC	Washita 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2005-003IS	100.00	WAPA	Nelson 115kV	Commercial Operation
GEN-2005-008	120.00	OKGE	Woodward 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2005-008IS	50.00	WAPA	Hilken 230kV [Ecklund 230kV]	Commercial Operation
GEN-2005-012	496.80	SUNCMKEC	Ironwood 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2005-013	199.80	WERE	Caney River 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-002	201.60	AEPW	Sweetwater 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-002IS	51.00	WAPA	Wessington Springs 230kV	Commercial Operation
GEN-2006-006IS	10.00	XEL	Marshall 115kV	Commercial Operation
GEN-2006-015IS	50.00	WAPA	Hilken 230kV [Ecklund 230kV]	Commercial Operation
GEN-2006-018	3,025.80	SPS	TUCO Interchange 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-020N	42.00	NPPD	Bloomfield 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-020S	20.00	SPS	DWS Frisco 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-021	94.00	SUNCMKEC	Flat Ridge Tap 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-024S	18.90	WFEC	Buffalo Bear Tap 69kV	IA FULLY EXECUTED/COMMERCIAL OPERATION

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-026	1,812.00	SPS	Hobbs 230kV & Hobbs 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-035	450.00	AEPW	Sweetwater 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-037N1	73.10	NPPD	Broken Bow 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-038N005	79.90	NPPD	Broken Bow 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-038N019	79.90	NPPD	Petersburg North 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-043	98.90	AEPW	Sweetwater 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-044	1,480.00	SPS	Hitchland 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-044N	40.50	NPPD	North Petersburg 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-046	129.60	OKGE	Dewey 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-013IS	50.00	WAPA	Wessington Springs 230kV	Commercial Operation
GEN-2007-014IS	100.00	WAPA	Wessington Springs 230kV	Commercial Operation
GEN-2007-015IS	100.00	WAPA	Hilken 230kV [Ecklund 230kV]	Commercial Operation
GEN-2007-017IS	166.00	WAPA	Ft Thompson-Grand Island 345kV	On Schedule
GEN-2007-018IS	234.00	WAPA	Ft Thompson-Grand Island 345kV	On Schedule
GEN-2007-020IS	16.00	WAPA	Nelson 115kV	Commercial Operation
GEN-2007-021	402.00	OKGE	Tatonga 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-025	598.40	WERE	Viola 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-040	200.10	SUNCMKEC	Buckner 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-043	200.00	OKGE	Minco 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-044	900.00	OKGE	Tatonga 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-046	400.00	SPS	Hitchland 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-050	342.00	OKGE	Woodward EHV 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-052	405.00	WFEC	Anadarko 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2007-062	847.20	OKGE	Woodward EHV 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-003	101.20	OKGE	Woodward EHV 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-008IS	5.00	WAPA	Nelson 115kV	Commercial Operation
GEN-2008-013	600.00	OKGE	Hunter 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-018	499.50	SPS	Finney 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-022	899.10	SPS	Crossroads 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-023	297.60	AEPW	Hobart Junction 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-037	99.00	WFEC	Slick Hills 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2008-044	395.60	OKGE	Tatonga 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-047	597.80	OKGE	Beaver County 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-051	322.00	SPS	Potter County 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-079	98.90	SUNCMKEC	Crooked Creek 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-086N02	402.00	NPPD	Meadow Grove 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-092	401.00	MIDW	Post Rock 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-098	100.80	WERE	Waverly 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-1190	60.00	OPPD	S1399 161kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-123N	89.66	NPPD	Tap Pauline - Guide Rock (Rosemont) 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-129	160.00	KCPL	Pleasant Hill 161kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2009-001IS	200.00	WAPA	Groton-Watertown 345kV	On Schedule
GEN-2009-008	198.69	MIDW	South Hays 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2009-018IS	99.50	WAPA	Groton 115kV	Commercial Operation
GEN-2009-020	48.30	MIDW	Walnut Creek 69kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2009-020AIS	130.50	WAPA	Tripp Junction 115kV	Commercial Operation
GEN-2009-025	59.80	OKGE	Nardins 69kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2009-026IS	110.00	WAPA	Dickenson-Heskett 230kV	On Schedule
GEN-2009-040	72.00	WERE	Marshall 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-001	599.40	OKGE	Beaver County 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-001IS	99.00	WAPA	Bismarck-Glenham 230kV	On Schedule
GEN-2010-003	100.80	WERE	Waverly 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-003IS	34.00	WAPA	Wessington Springs 230kV	Commercial Operation
GEN-2010-005	598.40	WERE	Viola 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2010-006	205.00	SPS	Jones 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-011	29.70	OKGE	Tatonga 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-014	717.60	SPS	Hitchland 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2010-036	50.60	WERE	6th Street 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-040	596.90	OKGE	Cimarron 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-041	10.29	OPPD	S1399 161kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2010-051	200.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2010-055	4.50	AEPW	Wekiwa 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2010-057	201.00	MIDW	Rice County 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-008	1,800.00	SUNCMKEC	Clark County 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-010	100.80	OKGE	Minco 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-011	50.00	KCPL	Iatan 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-014	198.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-016	200.10	SUNCMKEC	Ironwood 345kV	IA FULLY EXECUTED/ON SUSPENSION
GEN-2011-018	73.60	NPPD	Steele City 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-019	175.00	OKGE	Woodward 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2011-020	165.60	OKGE	Woodward 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2011-022	598.00	SPS	Hitchland 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2011-025	78.76	SPS	Tap Floyd County - Crosby County 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-027	120.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-040	222.00	OKGE	Carter County 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-045	205.00	SPS	Jones 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-046	27.00	SPS	Lopez 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-048	175.00	SPS	Mustang 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-049	250.70	OKGE	Border 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2011-050	108.00	AEPW	Santa Fe Tap 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-054	600.00	OKGE	Cimarron 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-056	3.60	NPPD	Jeffrey 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-056A	3.60	NPPD	John 1 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-056B	4.50	NPPD	John 2 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-057	150.00	WERE	Creswell 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-001	61.20	SPS	Cirrus Tap 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-004	82.80	OKGE	Carter County 138kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-007	1,440.00	SUNCMKEC	Rubart 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-012IS	75.00	WAPA	Wolf Point-Circle 115kV	On Suspension
GEN-2012-020	956.00	SPS	TUCO 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-024	178.20	SUNCMKEC	Clark County 345kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-028	74.00	WFEC	Gotebo 69kV	IA FULLY EXECUTED/COMMERCIAL OPERATION

C: STUDY GROUPINGS

C. Study Groups

GROUP 1: WOODWARD AREA			
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2001-014	94.5	WFEC	Ft Supply 138kV
GEN-2001-037	102	OKGE	FPL Moreland Tap 138kV
GEN-2005-008	120	OKGE	Woodward 138kV
GEN-2006-0245	18.9	WFEC	Buffalo Bear Tap 69kV
GEN-2006-046	129.6	OKGE	Dewey 138kV
GEN-2007-021	201	OKGE	Tatonga 345kV
GEN-2007-043	200	OKGE	Minco 345kV
GEN-2007-044	300	OKGE	Tatonga 345kV
GEN-2007-050	171	OKGE	Woodward EHV 138kV
GEN-2007-062	423.6	OKGE	Woodward EHV 345kV
GEN-2008-003	101.2	OKGE	Woodward EHV 138kV
GEN-2008-044	197.8	OKGE	Tatonga 345kV
GEN-2010-011	29.7	OKGE	Tatonga 345kV
GEN-2010-040	298.45	OKGE	Cimarron 345kV
GEN-2011-010	100.8	OKGE	Minco 345kV
GEN-2011-019	175	OKGE	Woodward 345kV
GEN-2011-020	165.6	OKGE	Woodward 345kV
GEN-2011-054	300	OKGE	Cimarron 345kV
GEN-2014-002	10.5	OKGE	Tatonga 345kV (GEN-2007-021 POI)
GEN-2014-003	15.8	OKGE	Tatonga 345kV (GEN-2007-044 POI)
GEN-2014-005	5.7	OKGE	Minco 345kV (GEN-2011-010 POI)
GEN-2014-020	99.1	AEPW	Tuttle 138kV
GEN-2014-056	250	OKGE	Minco 345kV
GEN-2015-029	161	OKGE	Tatonga 345kV
GEN-2015-048	200	OKGE	Cleo Corner 138kV
GEN-2015-057	100	OKGE	Minco 345kV
GEN-2015-093	250	OKGE	Gracemont 345kV
GEN-2015-095	176	WFEC	DeGrasse 138kV
GEN-2016-003	248.4	OKGE	Tap Badger - Woodward 345kV
GEN-2016-020	150	WFEC	Mooreland 138kV
GEN-2016-045	499.1	OKGE	Mathewson 345kV
GEN-2016-047	24	OKGE	Mustang 69kV
GEN-2016-057	499.1	OKGE	Mathewson 345kV
PRIOR QUEUED SUBTOTAL	5,817.85		
GEN-2016-118	288	WFEC	Dover Switchyard 138kV
GEN-2016-131	2.5	OKGE	Minco Substation 345kV
CURRENT CLUSTER SUBTOTAL	290.50		
AREA TOTAL	6,108.35		

GROUP 2: HITCHLAND AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2011-002	20	SPS	Herring 115 kV
ASGI-2013-001	11.5	SPS	PanTex South 115kV
GEN-2002-008	240	SPS	Hitchland 345kV
GEN-2002-009	79.8	SPS	Hansford 115kV
GEN-2002-022	239.2	SPS	Bushland 230kV
GEN-2003-020	159.1	SPS	Martin 115kV
GEN-2006-020S	20	SPS	DWS Frisco 115kV
GEN-2006-044	370	SPS	Hitchland 345kV
GEN-2007-046	200	SPS	Hitchland 115kV
GEN-2008-047	298.9	OKGE	Beaver County 345kV
GEN-2008-051	322	SPS	Potter County 345kV
GEN-2010-001	299.7	OKGE	Beaver County 345kV
GEN-2010-014	358.8	SPS	Hitchland 345kV
GEN-2011-014	198	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV
GEN-2011-022	299	SPS	Hitchland 345kV
GEN-2013-030	300	OKGE	Beaver County 345kV
GEN-2015-082	200	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV
GEN-2016-070	5.3	SPS	Martin 115kV
Llano Estacado (White Deer)	80	SPS	Llano Wind 115kV
SPS Distributed (Carson)	10	SPS	Martin 115kV
SPS Distributed (Dumas 19th St)	20	SPS	Dumas 19th Street 115kV
SPS Distributed (Etter)	20	SPS	Etter 115kV
SPS Distributed (Moore E)	25	SPS	Moore East 115kV
SPS Distributed (Sherman)	20	SPS	Sherman 115kV
PRIOR QUEUED SUBTOTAL	3,796.30		
ASGI-2016-010	90	SPS	Powell Corner 115kV
GEN-2016-161	3	SPS	Martin 115kV
CURRENT CLUSTER SUBTOTAL	93.00		
AREA TOTAL	3,889.30		

GROUP 6: SOUTH TEXAS PANHANDLE/NEW MEXICO AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-010	42.2	WFEC	Lovington 115 kV
ASGI-2010-020	30	SPS	Tap LE-Tatum - LE-Crossroads 69 kV
ASGI-2010-021	15	SPS	Tap LE-Saunders Tap - LE-Anderson 69 kV
ASGI-2011-001	27.3	SPS	Lovington 115 kV
ASGI-2011-003	10	SPS	Hendricks 69 kV
ASGI-2011-004	20	SPS	Pleasant Hill 69 kV
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV
ASGI-2013-002	18.4	SPS	FE Tucumcari 115kV
ASGI-2013-003	18.4	SPS	FE Clovis 115kV
ASGI-2013-005	1.65	SPS	FE Clovis 115kV
ASGI-2015-002	2	SPS	SP-Yuma 69kV
ASGI-2016-001	2.5	SPS	Wolfforth 115kV
ASGI-2016-002	0.35	SPS	SP-Yuma 115kV
ASGI-2016-004	9.6	SPS	Palo Duro 115kV
GEN-2001-033	180	SPS	San Juan Tap 230kV
GEN-2001-036	80	SPS	Norton 115kV
GEN-2006-018	168.1	SPS	TUCO Interchange 230kV
GEN-2006-026	604	SPS	Hobbs 230kV & Hobbs 115kV
GEN-2008-022	299.7	SPS	Crossroads 345kV
GEN-2010-006	205	SPS	Jones 230kV
GEN-2011-025	78.76	SPS	Tap Floyd County - Crosby County 115kV
GEN-2011-045	205	SPS	Jones 230kV
GEN-2011-046	27	SPS	Lopez 115kV
GEN-2011-048	175	SPS	Mustang 230kV
GEN-2012-001	61.2	SPS	Cirrus Tap 230kV
GEN-2012-020	478	SPS	TUCO 230kV
GEN-2012-034	7	SPS	Mustang 230kV
GEN-2012-035	7	SPS	Mustang 230kV
GEN-2012-036	7	SPS	Mustang 230kV
GEN-2012-037	203	SPS	TUCO 345kV
GEN-2013-016	203	SPS	TUCO 345kV
GEN-2013-022	25	SPS	Norton 115kV
GEN-2013-027	148.4	SPS	Tap Tolk - Yoakum 230kV
GEN-2014-033	70	SPS	Chaves County 115kV
GEN-2014-034	70	SPS	Chaves County 115kV
GEN-2014-035	30	SPS	Chaves County 115kV
GEN-2014-040	319.7	SPS	Castro 115kV
GEN-2015-014	150	SPS	Tap Cochran - Lehman 115kV
GEN-2015-020	100	SPS	Oasis 115kV
GEN-2015-041	5	SPS	TUCO Interchange 345kV
GEN-2015-056	101.2	SPS	Crossroads 345kV
GEN-2016-015	100	SPS	Andrews 230kV
GEN-2016-056	200	SPS	Carlisle 230kV
GEN-2016-062	250.7	SPS	Andrews 230kV
GEN-2016-069	31.4	SPS	Chaves County 115kV
SPS Distributed (Hopi)	10	SPS	Hopi 115kV
SPS Distributed (Jal)	10	SPS	S Jal 115kV
SPS Distributed (Lea Road)	10	SPS	Lea Road 115kV
SPS Distributed (Monument)	10	SPS	Monument 115kV

SPS Distributed (Ocotillo)	10	SPS	S_Jal 115kV
Sunray	49.5	SPS	Valero 115kV
PRIOR QUEUED SUBTOTAL	4,905.21		
ASGI-2016-009	3	SPS	Wolfforth 115kV
GEN-2015-099	73.3	SPS	Maddox 115kV
GEN-2016-121	110	SPS	Roadrunner 115kV Sub (528028 "RDRUNNER")
GEN-2016-123	298	SPS	Crossroads 345kV
GEN-2016-124	150	SPS	Crossroads 345kV
GEN-2016-125	74	SPS	Crossroads 345kV
GEN-2016-171	64	SPS	Tap Hobbs –Yoakum 230kV Line
GEN-2016-172	231	SPS	Newhart 115kV
GEN-2016-177	17	SPS	XTO Cornell 115kV
CURRENT CLUSTER SUBTOTAL	1,020.30		
AREA TOTAL	5,925.51		

NPPD Distributed (Burt County Wind)	12	NPPD	Tekamah & Oakland 115kV
NPPD Distributed (Burwell)	3	NPPD	Ord 115kV
NPPD Distributed (Columbus Hydro)	45	NPPD	Columbus 115kV
NPPD Distributed (North Platte - Lexington)	54	NPPD	Multiple: Jeffrey 115kV, John_1 115kV, John_2 115kV
NPPD Distributed (Ord)	11.9	NPPD	Ord 115kV
NPPD Distributed (Stuart)	2.1	NPPD	Ainsworth 115kV
PRIOR QUEUED SUBTOTAL	4,777.55		
GEN-2016-074	200	NPPD	Sweetwater 345kV
GEN-2016-096	227.7	NPPD	Tap Pauline-Moore 345kV
GEN-2016-106	400	NPPD	Gentleman Substation 345kV
GEN-2016-110	152	WAPA	Tap Laramie River-Stegall 345kV Line
GEN-2016-147	40	NPPD	Sidney 115kV Sub
GEN-2016-165	202	WAPA	Grand Prairie 345kV
CURRENT CLUSTER SUBTOTAL	1,221.70		
AREA TOTAL	5,999.25		

GROUP 10: SOUTHEAST OKLAHOMA/NORTHEAST TEXAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2016-167	73.5	AEPW	Tap Lieberman - North Benton 138kV
CURRENT CLUSTER SUBTOTAL	73.50		
AREA TOTAL	73.50		

GROUP 12: NORTHWEST ARKANSAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2013-011	30	AEPW	Turk 138kV
GEN-2016-013	10	EMDE	La Russell 161kV
GEN-2016-014	10	EMDE	La Russell 161kV
PRIOR QUEUED SUBTOTAL	50.00		
GEN-2016-166	35	AEPW	Prairie Grove 69kV Substation
CURRENT CLUSTER SUBTOTAL	35.00		
AREA TOTAL	85.00		

GROUP 13: NORTHWEST MISSOURI AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2016-003	6	KCPL	Paola 161kV
ASGI-2017-006	238	AECI	Maryville 161 kV
ASGI-2018-001	230	AECI	Maryville 161 kV
ASGI-2018-007			Salisbury 161 kV
ASGI-2018-008			Centerville 161 kV
ASGI-2018-009			Paola 161kV
ASGI-2018-010			Pleasant Valley 161kV
ASGI-2018-011			South Ottawa 161kV
ASGI-2018-012			South Ottawa 161kV
GEN-2008-129	80	KCPL	Pleasant Hill 161kV
GEN-2010-036	4.6	WERE	6th Street 115kV
GEN-2011-011	50	KCPL	Iatan 345kV
GEN-2014-021	300	KCPL	Tap Nebraska City - Mullin Creek (Holt) 345kV
GEN-2015-005	200.1	KCPL	Tap Nebraska City - Sibley (Ketchem) 345kV
PRIOR QUEUED SUBTOTAL	1,108.70		
GEN-2016-088	151.2	KCPL	Transource Ketchem 345kV Station
GEN-2016-115	300	KCPL	Holt County Switching Station 345kV
GEN-2016-149	302	WERE	Stranger Creek 345kV Sub
GEN-2016-150	302	WERE	Stranger Creek 345kV Sub
GEN-2016-157	252	KCPL	West Gardner 345kV Sub
GEN-2016-158	252	KCPL	West Gardner 345kV Sub
GEN-2016-174	302	WERE	Stranger Creek 345kV Sub
GEN-2016-176	302	WERE	Stranger Creek 345kV Sub
CURRENT CLUSTER SUBTOTAL	2,163.20		
AREA TOTAL	3,271.90		

GROUP 14: SOUTH CENTRAL OKLAHOMA AREA

Request	Capacity	Area	Proposed Point of Interconnection
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ASGI-2015-006	9	SWPA	Tupelo 138kV
ASGI-2016-011	7.407	SWPA	Allen 138 kV
ASGI-2016-012	61.725	SWPA	Tupelo 138 kV
ASGI-2016-013	4.938	WFEC	Ashland 138 kV
GEN-2011-040	111	OKGE	Carter County 138kV
GEN-2011-050	108	AEPW	Santa Fe Tap 138kV
GEN-2012-004	41.4	OKGE	Carter County 138kV
GEN-2013-007	100	OKGE	Tap Prices Falls - Carter 138kV
GEN-2014-057	249.9	AEPW	Tap Lawton - Sunnyside (Terry Road) 345kV
GEN-2015-036	303.6	OKGE	Johnston County 345kV
GEN-2015-045	20	AEPW	Tap Lawton - Sunnyside (Terry Road) 345kV
GEN-2015-092	250	AEPW	Tap Lawton - Sunnyside (Terry Road) 345kV
GEN-2016-028	100	AEPW	Clayton 138kV
GEN-2016-030	99.9	OKGE	Brown 138kV
GEN-2016-063	200	OKGE	Tap Sunnyside – Hugo 345kV
PRIOR QUEUED SUBTOTAL	1,666.87		
GEN-2016-102	150.9	OKGE	Blue River 138kV Substation
GEN-2016-126	172.5	OKGE	Arbuckle 138kV Substation
GEN-2016-129	132	AEPW	Valliant 345kV substation
CURRENT CLUSTER SUBTOTAL	455.40		
AREA TOTAL	2,122.27		

GROUP 17: W-SOUTH DAKOTA AREA

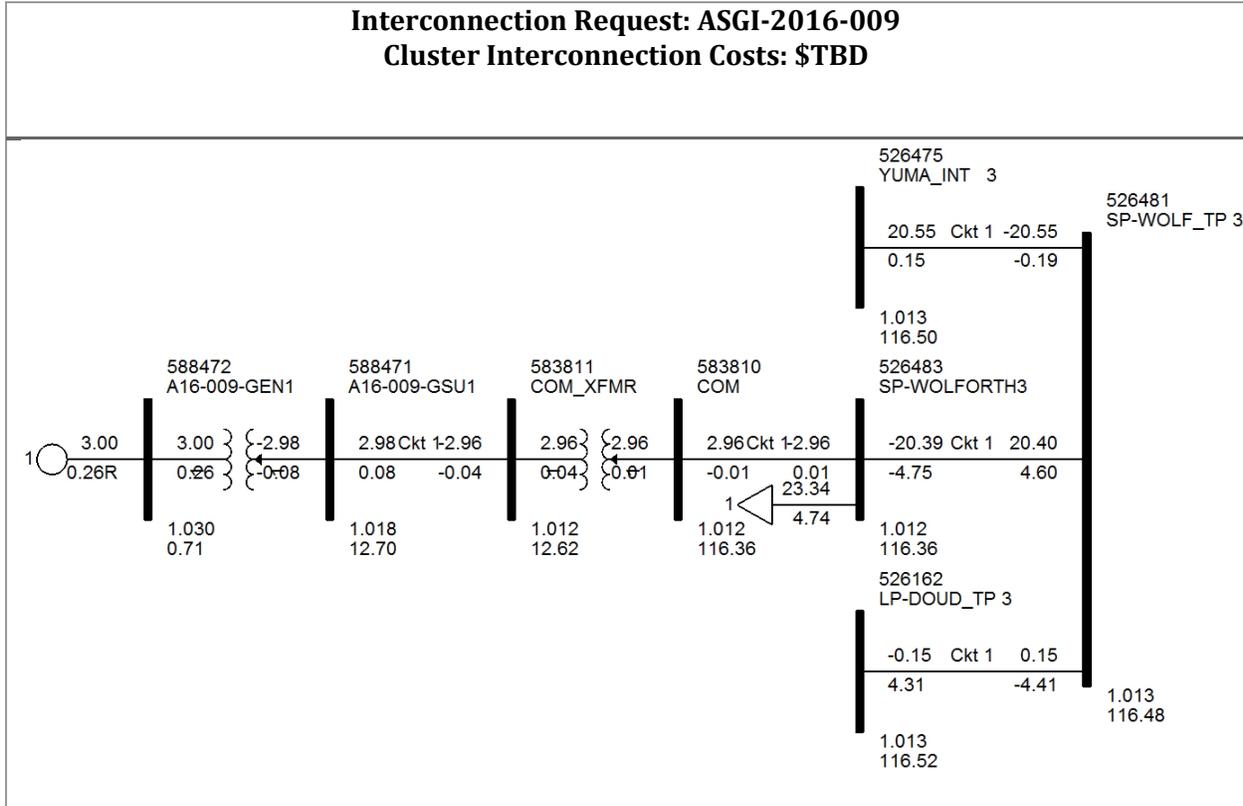
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2006-002IS	51	WAPA	Wessington Springs 230kV
GEN-2009-020AIS	130.5	WAPA	Tripp Junction 115kV
GEN-2016-054	3.4	WAPA	Wessington Springs 230kV
PRIOR QUEUED SUBTOTAL	184.90		
AREA TOTAL	184.90		

GROUP 18: E-NORTH DAKOTA AREA

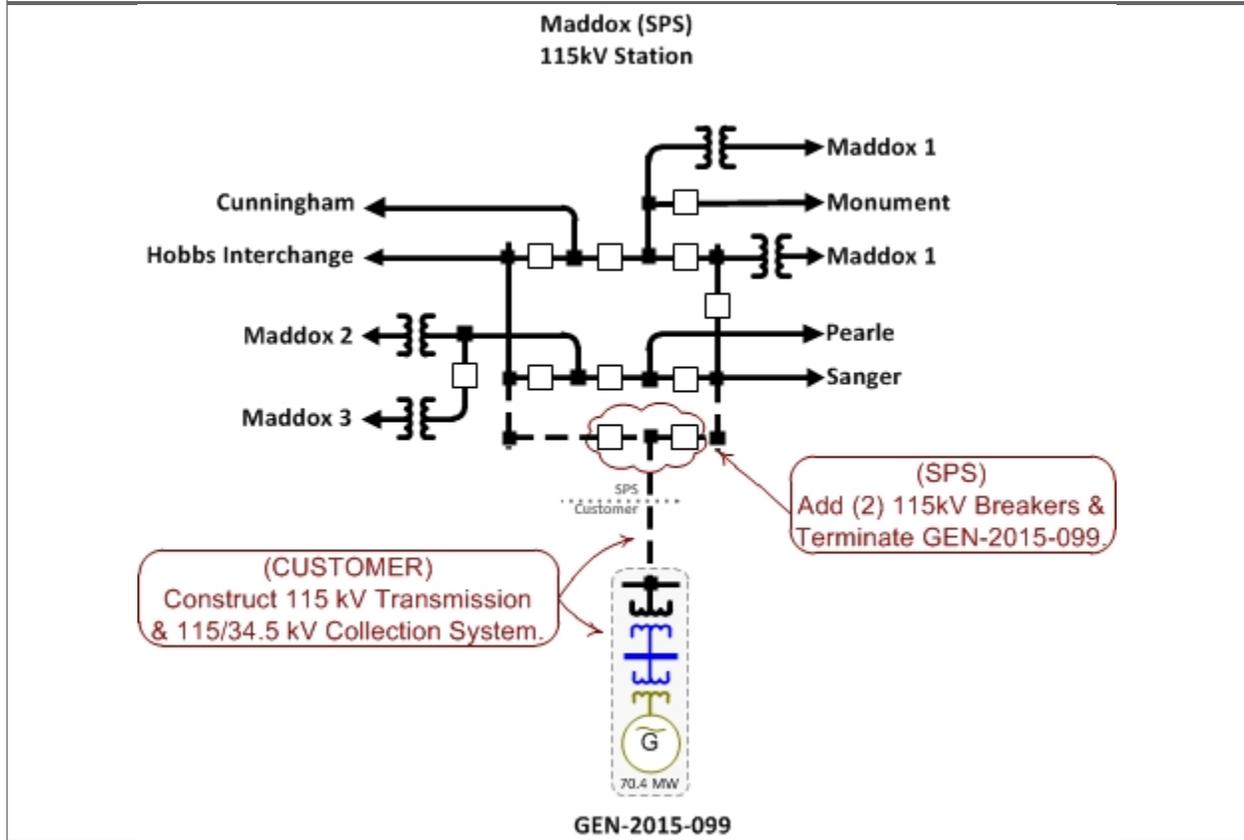
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2002-008IS	40.5	WAPA	Edgeley 115kV [Pomona 115kV]
GEN-2005-003IS	100	WAPA	Nelson 115kV
GEN-2006-006IS	10	XEL	Marshall 115kV
GEN-2007-020IS	16	WAPA	Nelson 115kV
GEN-2008-008IS	5	WAPA	Nelson 115kV
GEN-2016-007	100	WAPA	Valley City 115kV
MPC00100	99	OTP	Langdon 115 kV
MPC00200	60	OTP	Langdon 115 kV
MPC00300	40.5	OTP	Langdon 115 kV
MPC00500	378.8	OTP	Maple River 230 kV
MPC01200	49.6	OTP	Maple River 230 kV
PRIOR QUEUED SUBTOTAL	899.40		
AREA TOTAL	899.40		

CLUSTER TOTAL (CURRENT STUDY)	12,180.0	MW
PQ TOTAL (PRIOR QUEUED)	42,250.0	MW
CLUSTER TOTAL (INCLUDING PRIOR QUEUED)	54,430.0	MW

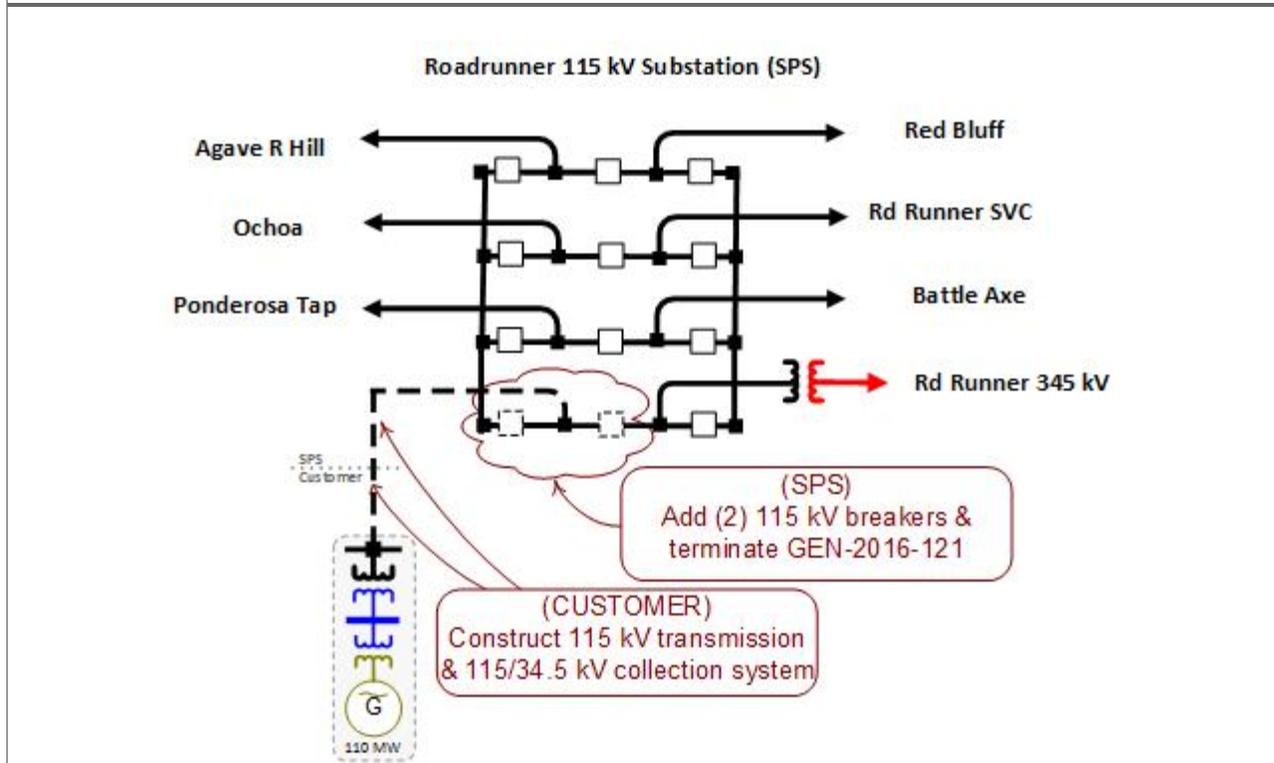
D: PROPOSED POINT OF INTERCONNECTION ONE-LINE DIAGRAMS



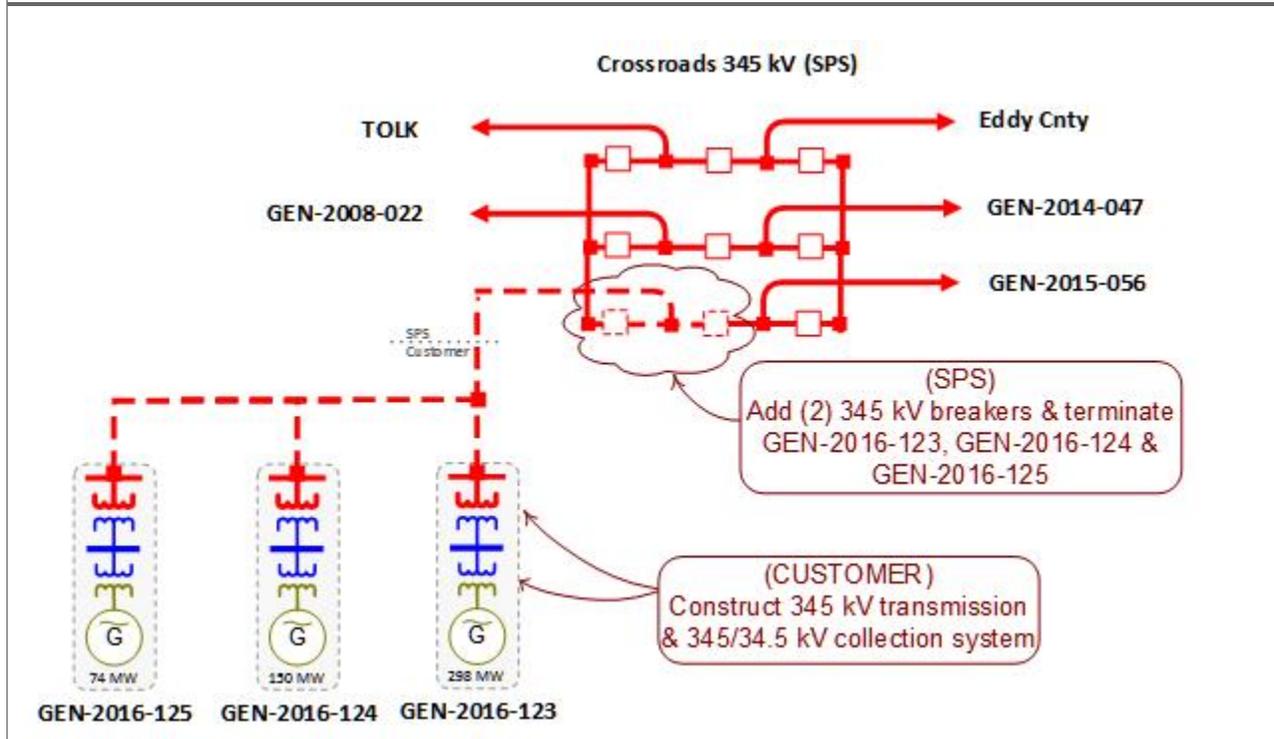
Interconnection Request: GEN-2015-099
Cluster Interconnection Costs: \$4,688,000



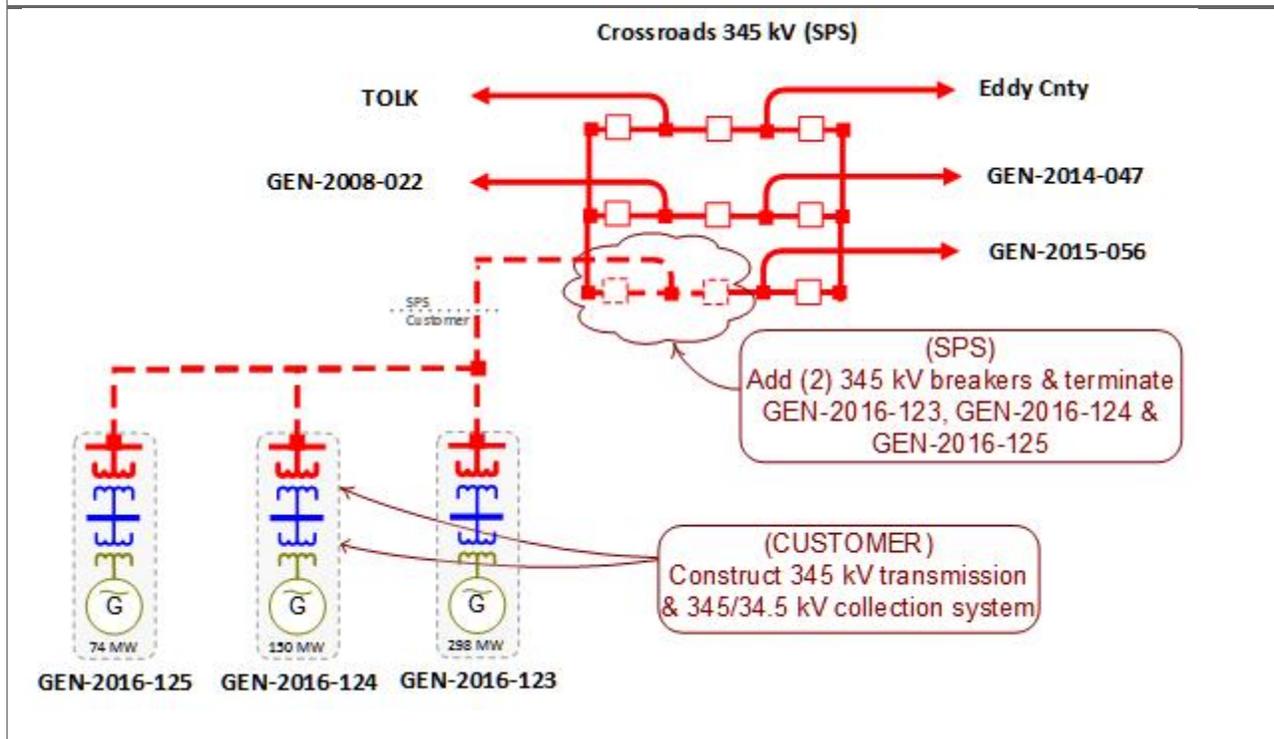
Interconnection Request: GEN-2016-121
Cluster Interconnection Costs: \$2,799,536



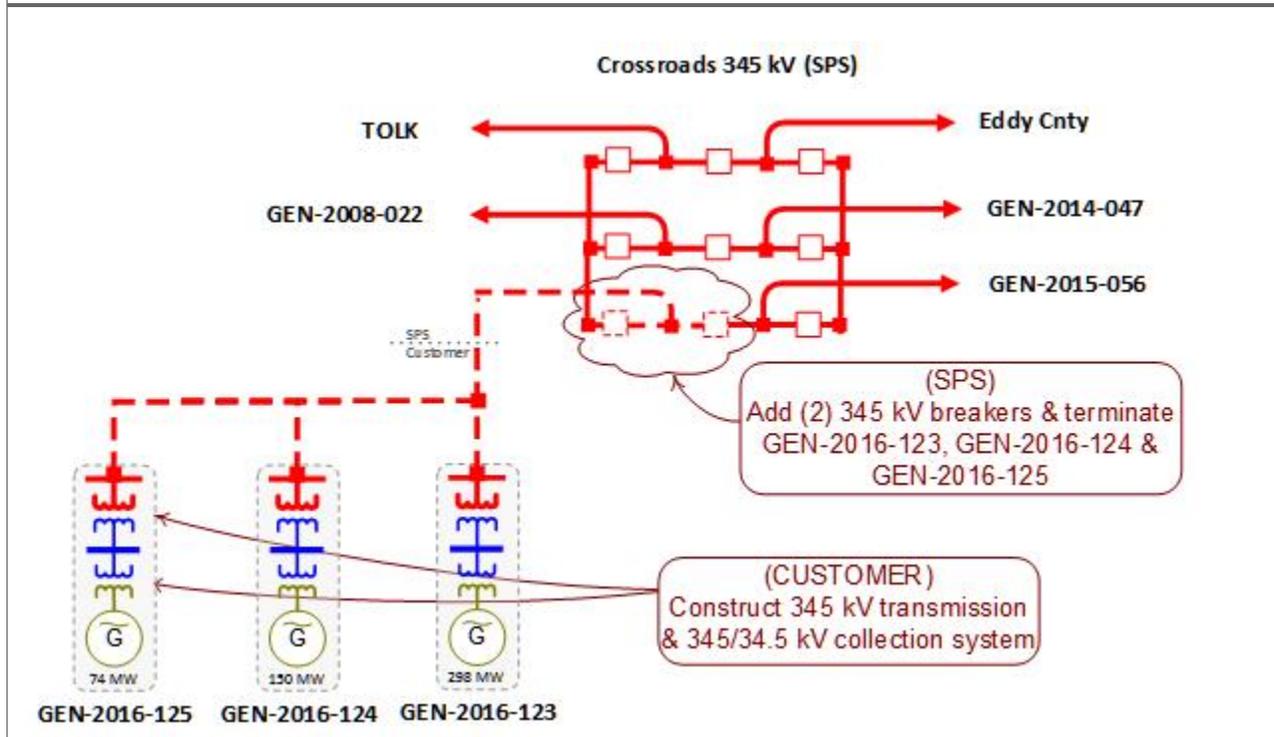
Interconnection Request: GEN-2016-123
Cluster Interconnection Costs: \$1,585,403



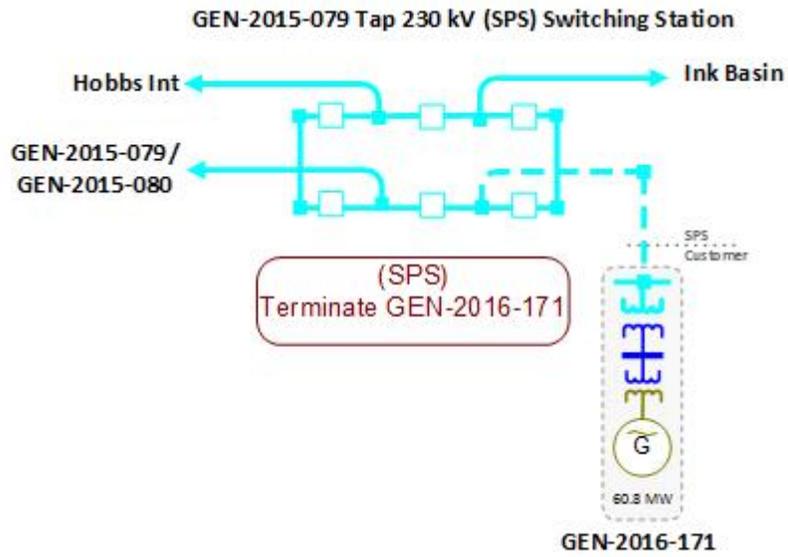
Interconnection Request: GEN-2016-124
Cluster Interconnection Costs: \$1,585,403



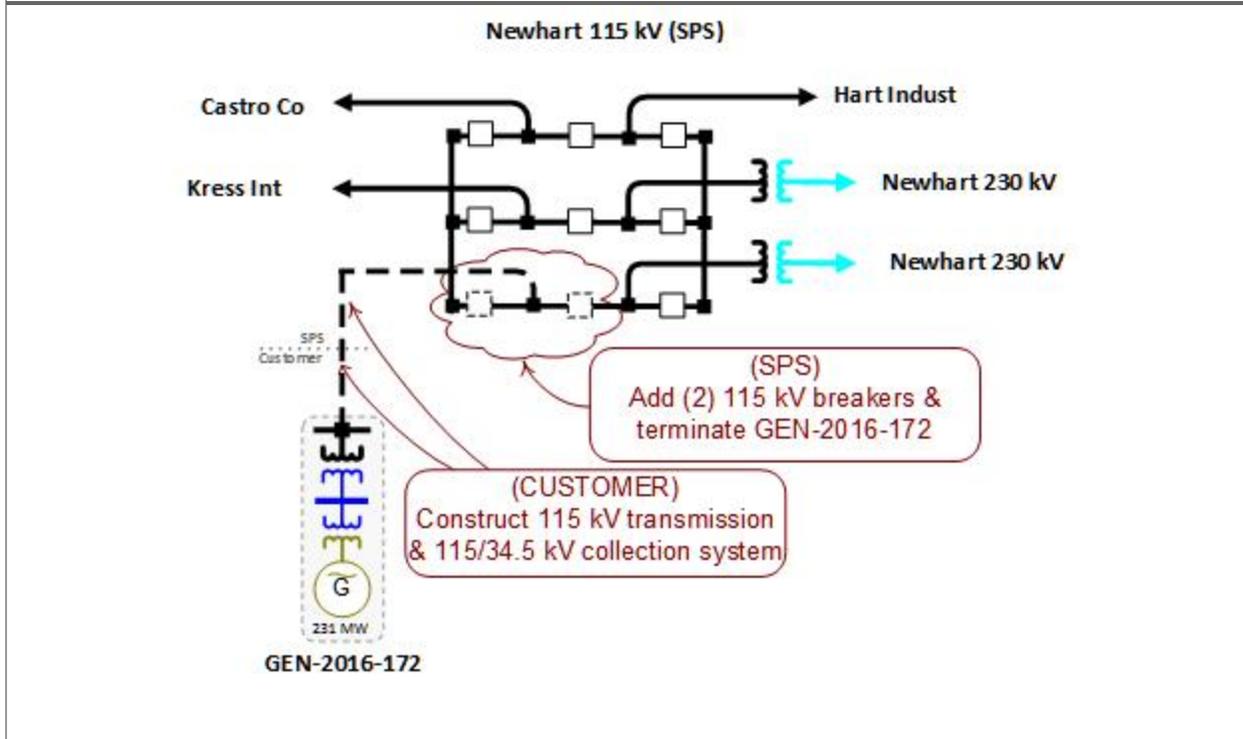
Interconnection Request: GEN-2016-125
Cluster Interconnection Costs: \$1,585,403



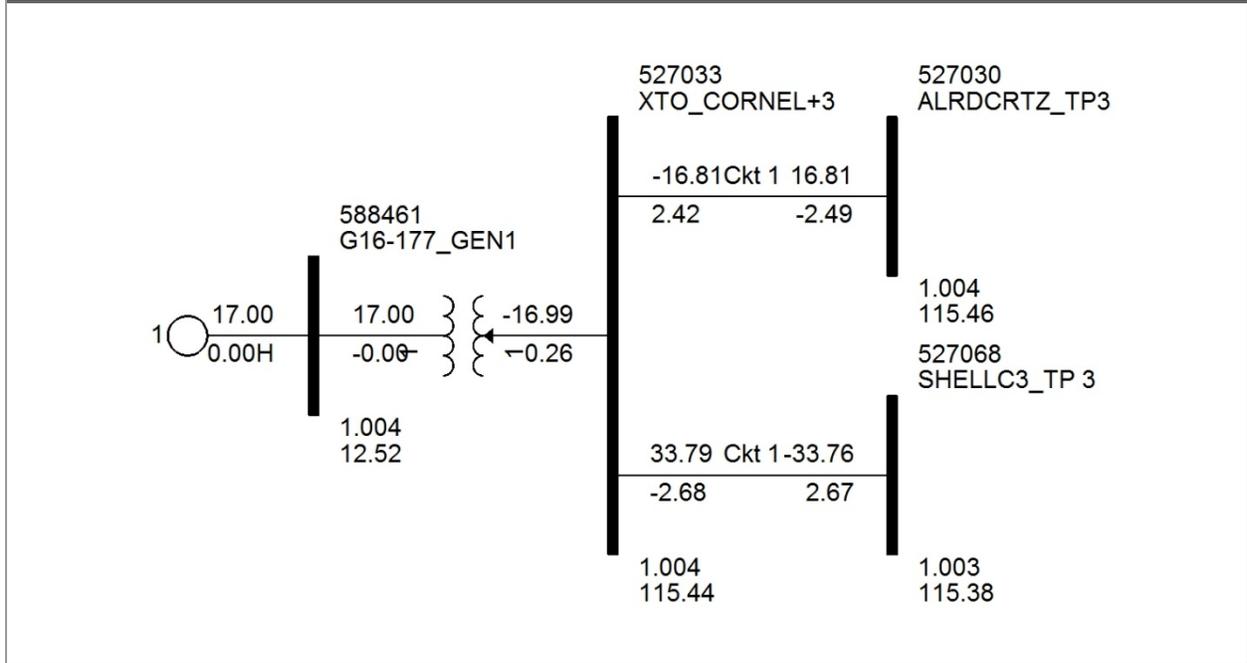
Interconnection Request: GEN-2016-171
Cluster Interconnection Costs: \$210,000



Interconnection Request: GEN-2016-172
Cluster Interconnection Costs: \$1,166,280



Interconnection Request: GEN-2016-177
Cluster Interconnection Costs: \$1,458,215



E: COST ALLOCATION PER REQUEST

Appendix E. Cost Allocation Per Request

(Including Previously Allocated Network Upgrades*)

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
ASGI-2016-009			
ASGI-2016-009 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$11,467	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$1,117,318	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$16,466	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$99,971	\$34,000,000
Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS) Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw	Current Study	\$309,728	\$24,764,205
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$16,466	\$5,600,000
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$335,196	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$33,637	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$117,612	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$8,233	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$289,621	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$5,483	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$2,361,198	

GEN-2015-099

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$280,182	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$27,299,814	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$402,313	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$2,442,615	\$34,000,000
Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS) Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw	Current Study	\$1,696,439	\$24,764,205
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$377,297	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$402,313	\$5,600,000
GEN-2015-099 Interconnection Costs See One-Line Diagram.	Current Study	\$4,688,000	\$4,688,000
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$8,189,944	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$821,868	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$2,873,665	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$201,157	\$2,800,000

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$7,076,399	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$138,062	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$56,890,067	

GEN-2016-121

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$420,465	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$40,968,343	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$603,744	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$3,665,589	\$34,000,000
Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS) Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw	Current Study	\$2,086,036	\$24,764,205
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$713,335	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$603,744	\$5,600,000
GEN-2016-121 Interconnection Costs See One-Line Diagram.	Current Study	\$2,799,536	\$2,799,536
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$12,290,503	\$114,000,000

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$1,233,363	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$4,312,457	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$301,872	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$10,619,426	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$208,029	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$80,826,440	

GEN-2016-123

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$1,139,077	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$110,986,965	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$1,635,597	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$9,930,413	\$34,000,000
Crossroads - Eddy County 345 kV CKT 1 (SPS) Replace 2 x 345 kV structures, wave traps (3x), and jumpers to achieve minimum emergency rating of 972 MVA	Current Study	\$1,427,203	\$2,500,000
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$5,041,488	\$10,200,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$1,635,597	\$5,600,000
GEN-2016-123 Interconnection Costs See One-Line Diagram.	Current Study	\$1,585,403	\$1,585,403
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$33,296,089	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$3,341,292	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$11,682,838	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$817,799	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$28,768,990	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$586,232	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$211,874,982	

GEN-2016-124

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$573,361	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$55,865,922	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$823,287	\$5,600,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$4,998,530	\$34,000,000
Crossroads - Eddy County 345 kV CKT 1 (SPS) Replace 2 x 345 kV structures, wave traps (3x), and jumpers to achieve minimum emergency rating of 972 MVA	Current Study	\$718,391	\$2,500,000
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$2,537,662	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$823,287	\$5,600,000
GEN-2016-124 Interconnection Costs See One-Line Diagram.	Current Study	\$1,585,403	\$1,585,403
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$16,759,777	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$1,681,858	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$5,880,623	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$411,644	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$14,481,035	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$295,083	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tucó - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tucó to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$107,435,863	

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
GEN-2016-125			
Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$282,858	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$27,560,521	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$406,155	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$2,465,941	\$34,000,000
Crossroads - Eddy County 345 kV CKT 1 (SPS) Replace 2 x 345 kV structures, wave traps (3x), and jumpers to achieve minimum emergency rating of 972 MVA	Current Study	\$354,406	\$2,500,000
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$1,251,913	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$406,155	\$5,600,000
GEN-2016-125 Interconnection Costs See One-Line Diagram.	Current Study	\$1,585,403	\$1,585,403
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$8,268,156	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$829,717	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$2,901,108	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$203,078	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$7,143,977	\$98,500,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$145,574	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$53,804,963	

GEN-2016-171

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$244,634	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$23,836,127	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$351,269	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$2,132,706	\$34,000,000
Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS) Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw	Current Study	\$1,588,835	\$24,764,205
Crossroads - Tolk 345 kV CKT 1 (SPS) Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	Current Study	\$278,306	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$351,269	\$5,600,000
GEN-2016-171 Interconnection Costs See One-Line Diagram.	Current Study	\$210,000	\$210,000
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$7,150,838	\$114,000,000
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$717,593	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$2,509,066	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$175,635	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$6,178,575	\$98,500,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$120,262	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$45,845,115	

GEN-2016-172

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$882,976	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$86,033,520	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$1,267,862	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$7,697,736	\$34,000,000
Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS) Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw	Current Study	\$19,083,166	\$24,764,205
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$1,267,862	\$5,600,000
GEN-2016-172 Interconnection Costs See One-Line Diagram.	Current Study	\$1,166,280	\$1,166,280
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$25,810,056	\$114,000,000
Oklunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$2,590,062	\$11,440,000
Oklunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$9,056,160	\$40,000,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$633,931	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$22,300,794	\$98,500,000
Potter County 345/230/13.3 kV CKT 2 Transformer (SPS) Build new 345/230/13.3 kV Transformer circuit #2 at Potter County Interchange	Current Study	\$7,700,000	\$7,700,000
Rebuild Elk City 230/138 kV Transformer Terminal Equipment Upgrade station equipment to achieve a minimum normal rating of 294 MVA.	Current Study	\$501,274	\$2,000,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$185,991,680	

GEN-2016-177

Border 345 kV Capacitive Reactive Support (OKGE) Install +150Mvar Capacitor Bank(s) at Border 345kV	Current Study	\$64,981	\$3,900,000
Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP) Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$6,331,471	\$380,000,000
Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.	Current Study	\$93,306	\$5,600,000
Crawfish Draw 345 kV Dynamic Reactive Support (SPS) Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.	Current Study	\$566,500	\$34,000,000
Crossroads 345 kV Capacitive Reactive Support (SPS) Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	Current Study	\$93,306	\$5,600,000
GEN-2016-177 Interconnection Costs See One-Line Diagram.	Current Study	\$1,458,215	\$1,458,215
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1 Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$1,899,441	\$114,000,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Oklaunion 345 kV Capacitive Reactive Support (AEP) Install +130Mvar Capacitor Bank(s) at Oklaunion 345kV.	Current Study	\$190,611	\$11,440,000
Oklaunion 345 kV Dynamic Reactive Support (AEP) Install +300/-150Mvar SVC Injection at Oklaunion 345kV.	Current Study	\$666,471	\$40,000,000
Potter 345 kV Capacitive Reactive Support (SPS) Install +100Mvar Capacitor Bank(s) at Potter 345kV	Current Study	\$46,653	\$2,800,000
Potter County - Grapevine 345 kV CKT 1 (SPS) Build ~65 miles of new 345kV from Potter County - Grapevine with a minimum normal/emergency rating of 1195 MVA.	Current Study	\$1,641,184	\$98,500,000
SPP NTC 200309 (Hobbs - Yoakum 345 kV CKT 1) Construct new 52-mile 345 kV line from Hobbs to Yoakum.	Previously Allocated		\$87,349,796
SPP NTC 200395 (Tuco - Yoakum 345 kV CKT 1) Construct new 107-mile 345 kV line from Tuco to Yoakum. Install any necessary 345 kV terminal equipment at Yoakum associated with new 345/230 kV transformer.	Previously Allocated		\$123,902,322
SPP NTC 210484 (Yoakum 345/230 kV CKT 1 Transformer) Install new 345/230 kV 640 MVA transformer at Yoakum substation. Install any necessary 230 kV terminal equipment.	Previously Allocated		\$4,703,455
SPP NTC 210507 (Eddy County - Kiowa 345 kV CKT 1) Build new 34 mile 345 kV line from Eddy County to Kiowa.	Previously Allocated		\$63,730,259
	Current Study Total	\$13,052,138	
TOTAL CURRENT STUDY COSTS:		\$758,082,447	

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

F: COST ALLOCATION PER PROPOSED STUDY NETWORK UPGRADE

Appendix F. Cost Allocation by Upgrade

ASGI-2016-009 Interconnection Costs

\$0

See One-Line Diagram.

ASGI-2016-009 \$0

Total Allocated Costs \$0

Border 345 kV Capacitive Reactive Support (OKGE)

\$3,900,000

Install +150Mvar Capacitor Bank(s) at Border 345kV

ASGI-2016-009	\$11,467
GEN-2015-099	\$280,182
GEN-2016-121	\$420,465
GEN-2016-123	\$1,139,077
GEN-2016-124	\$573,361
GEN-2016-125	\$282,858
GEN-2016-171	\$244,634
GEN-2016-172	\$882,976
GEN-2016-177	\$64,981

Total Allocated Costs \$3,900,000

Crawfish Draw (SPS) - Lawton Eastside 345kV CKT 1 (AEP)

\$380,000,000

Build ~250 miles of new 345kV from Crawfish Draw - Lawton Eastside with a minimum normal/emergency rating of 1195 MVA.

ASGI-2016-009	\$1,117,318
GEN-2015-099	\$27,299,814
GEN-2016-121	\$40,968,343
GEN-2016-123	\$110,986,965
GEN-2016-124	\$55,865,922
GEN-2016-125	\$27,560,521
GEN-2016-171	\$23,836,127
GEN-2016-172	\$86,033,520
GEN-2016-177	\$6,331,471

Total Allocated Costs \$380,000,000

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Crawfish Draw 345 kV Capacitive Reactive Support (SPS) Stability**\$5,600,000**

Install +200Mvar Capacitor Bank(s) at Crawfish Draw 345kV.

ASGI-2016-009	\$16,466
GEN-2015-099	\$402,313
GEN-2016-121	\$603,744
GEN-2016-123	\$1,635,597
GEN-2016-124	\$823,287
GEN-2016-125	\$406,155
GEN-2016-171	\$351,269
GEN-2016-172	\$1,267,862
GEN-2016-177	\$93,306

Total Allocated Costs	\$5,600,000
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Crawfish Draw 345 kV Dynamic Reactive Support (SPS)**\$34,000,000**

Install +225/-150Mvar SVC Injection at Crawfish Draw 345kV.

ASGI-2016-009	\$99,971
GEN-2015-099	\$2,442,615
GEN-2016-121	\$3,665,589
GEN-2016-123	\$9,930,413
GEN-2016-124	\$4,998,530
GEN-2016-125	\$2,465,941
GEN-2016-171	\$2,132,706
GEN-2016-172	\$7,697,736
GEN-2016-177	\$566,500

Total Allocated Costs	\$34,000,000
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Crawfish Draw 345/230/12.8 kV CKT 1 Transformer (SPS)**\$24,764,205**

Build new 345/230/12.8 kV Transformer circuit #2 at Crawfish Draw

ASGI-2016-009	\$309,728
GEN-2015-099	\$1,696,439
GEN-2016-121	\$2,086,036
GEN-2016-171	\$1,588,835
GEN-2016-172	\$19,083,166

Total Allocated Costs	\$24,764,205
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* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Crossroads - Eddy County 345 kV CKT 1 (SPS)	\$2,500,000
Replace 2 x 345 kV structures, wave traps (3x), and jumpers to achieve minimum emergency rating of 972 MVA	
GEN-2016-123	\$1,427,203
GEN-2016-124	\$718,391
GEN-2016-125	\$354,406
Total Allocated Costs	\$2,500,000
Crossroads - Tolk 345 kV CKT 1 (SPS)	\$10,200,000
Replace approximately 4 structures on the Tolk – Crossroads 345 kV line and add equipment necessary to achieve a minimum emergency rating of 921 MVA	
GEN-2015-099	\$377,297
GEN-2016-121	\$713,335
GEN-2016-123	\$5,041,488
GEN-2016-124	\$2,537,662
GEN-2016-125	\$1,251,913
GEN-2016-171	\$278,306
Total Allocated Costs	\$10,200,000
Crossroads 345 kV Capacitive Reactive Support (SPS)	\$5,600,000
Install +200Mvar Capacitor Bank(s) at Crossroads 345kV	
ASGI-2016-009	\$16,466
GEN-2015-099	\$402,313
GEN-2016-121	\$603,744
GEN-2016-123	\$1,635,597
GEN-2016-124	\$823,287
GEN-2016-125	\$406,155
GEN-2016-171	\$351,269
GEN-2016-172	\$1,267,862
GEN-2016-177	\$93,306
Total Allocated Costs	\$5,600,000

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Rebuild Elk City 230/138 kV Transformer Terminal Equipment**\$2,000,000**

Upgrade station equipment to achieve a minimum normal rating of 294 MVA.

ASGI-2016-009	\$5,483
GEN-2015-099	\$138,062
GEN-2016-121	\$208,029
GEN-2016-123	\$586,232
GEN-2016-124	\$295,083
GEN-2016-125	\$145,574
GEN-2016-171	\$120,262
GEN-2016-172	\$501,274

Total Allocated Costs **\$2,000,000**

GEN-2015-099 Interconnection Costs**\$4,688,000**

See One-Line Diagram.

GEN-2015-099	\$4,688,000
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Total Allocated Costs **\$4,688,000**

GEN-2016-121 Interconnection Costs**\$2,799,536**

See One-Line Diagram.

GEN-2016-121	\$2,799,536
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Total Allocated Costs **\$2,799,536**

GEN-2016-123 Interconnection Costs**\$1,585,403**

See One-Line Diagram.

GEN-2016-123	\$1,585,403
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Total Allocated Costs **\$1,585,403**

GEN-2016-124 Interconnection Costs**\$1,585,403**

See One-Line Diagram.

GEN-2016-124	\$1,585,403
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Total Allocated Costs **\$1,585,403**

GEN-2016-125 Interconnection Costs**\$1,585,403**

See One-Line Diagram.

GEN-2016-125	\$1,585,403
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Total Allocated Costs **\$1,585,403**

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

GEN-2016-171 Interconnection Costs		\$210,000
See One-Line Diagram.		
	GEN-2016-171	\$210,000
	Total Allocated Costs	\$210,000
GEN-2016-172 Interconnection Costs		\$1,166,280
See One-Line Diagram.		
	GEN-2016-172	\$1,166,280
	Total Allocated Costs	\$1,166,280
GEN-2016-177 Interconnection Costs		\$1,458,215
See One-Line Diagram.		
	GEN-2016-177	\$1,458,215
	Total Allocated Costs	\$1,458,215
Grapevine (SPS) - Chisholm (AEP) 345 kV CKT 1		\$114,000,000
Build ~75 miles of new 345kV from Grapevine - Chisholm with a minimum normal/emergency rating of 1195 MVA.		
	ASGI-2016-009	\$335,196
	GEN-2015-099	\$8,189,944
	GEN-2016-121	\$12,290,503
	GEN-2016-123	\$33,296,089
	GEN-2016-124	\$16,759,777
	GEN-2016-125	\$8,268,156
	GEN-2016-171	\$7,150,838
	GEN-2016-172	\$25,810,056
	GEN-2016-177	\$1,899,441
	Total Allocated Costs	\$114,000,000

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Potter 345 kV Capacitive Reactive Support (SPS)**\$2,800,000**

Install +100Mvar Capacitor Bank(s) at Potter 345kV

ASGI-2016-009	\$8,233
GEN-2015-099	\$201,157
GEN-2016-121	\$301,872
GEN-2016-123	\$817,799
GEN-2016-124	\$411,644
GEN-2016-125	\$203,078
GEN-2016-171	\$175,635
GEN-2016-172	\$633,931
GEN-2016-177	\$46,653

Total Allocated Costs **\$2,800,000**

Potter County 345/230/13.3 kV CKT 2 Transformer (SPS)**\$7,700,000**

Build new 345/230/13.3 kV Transformer circuit #2 at Potter County Interchange

GEN-2016-172	\$7,700,000
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Total Allocated Costs **\$7,700,000**

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

G-T: THERMAL POWER FLOW ANALYSIS (CONSTRAINTS REQUIRING TRANSMISSION REINFORCEMENT)

Legend:

Column	Definition
Solution	Solution Method
Group	Model Case Identification: <ul style="list-style-type: none"> • ##ALL: ERIS-HVER • 00: ERIS-LVER • ##NR or 00NR: NRIS
Scenario	Upgrade Scenario Identification
Season	Model Year and Season
Source	Gen ID producing the TDF above the limit for the constraint
Monitored Element	Monitored Bus Identification
Rate A	Planning Term Normal Rating
Rate B	Planning Term Emergency Rating
TDF	Transfer Distribution Factor for the Source
TC%LOADING	Post-transfer, loading percent for system intact or contingency
Contingency	Contingency Description

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, DIRECTION, MONITORED ELEMENT, RATEA (MVA), RATEB(MVA), TDF, TCXLOADING (% MVA), CONTINGENCY. The table lists various power flow scenarios and their associated transmission constraints.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, DIRECTION, MONITORED ELEMENT, RATEA (MVA), RATEB(MVA), TDF, TC%LOADING (% MVA), CONTINGENCY. Contains 1000 rows of data for various power flow scenarios.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, DIRECTION, MONITORED ELEMENT, RATEA (MW), RATEB(MW), TDF, TCXLOADING (% MW), CONTINGENCY. The table lists various transmission constraints and solutions across different seasons and scenarios, with 50 rows per scenario.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, DIRECTION, MONITORED ELEMENT, RATEA (MVA), RATEB(MVA), TDF, TCXLOADING (% MVA), CONTINGENCY. It lists various power flow constraints and contingencies such as 'EDDY NORTH 6230.00', 'HOBBS INTERCHANGE 230KV CKT 1', etc.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, DIRECTION, MONITORED ELEMENT, RATEA (MVA), RATEB(MVA), TDF, TC%LOADING (% MVA), CONTINGENCY. Contains 1000 rows of data for various transmission scenarios.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB(MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNSLock-Blown up	06ALL	0 21WP	G16_172			Non-Converge	615	699	0.12986	70.6859	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNSLock-Blown up	06ALL	0 21WP	G16_172			Non-Converge	615	699	0.12986	70.6859	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNSLock-Blown up	06ALL	0 26SP	G16_172			Non-Converge	0	0	0.46558	9999	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 18G	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.25506	103.6849	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21L	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.20162	101.9113	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21SP	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.23781	105.8431	LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21SP	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.23781	111.1664	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21WP	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.22598	114.9962	LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21WP	G16_172		TO->FROM'	CIMARRON - MINCO 345KV CKT 1'	956	956	0.22598	120.3499	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	2 21L	G16_172		TO->FROM'	CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'	1022	1143	0.24532	105.4072	CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 1'
FDNS	06ALL	2 21SP	G16_172		TO->FROM'	CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'	956	1042	0.31309	105.5271	CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 1'
FDNS	06ALL	2 21SP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	272	316	0.05438	100.4228	System Intact
FDNS	06ALL	2 21SP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	272	316	0.05438	100.4228	System Intact
FDNS	06ALL	2 21SP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	272	316	0.05438	100.11	System Intact
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	287	316	0.05196	102.1528	System Intact
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	287	316	0.05196	102.1528	System Intact
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	287	316	0.05196	101.3538	System Intact
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'	287	316	0.05196	101.3538	System Intact
FDNSLock-Blown up	06ALL	2 21L	G16_172			Non-Converge	0	0	0.12435	9999	"P23:345:AEPW-LAWTON EASTSIDE CB 3429B N8TB"
FDNSLock-Blown up	06ALL	2 21L	G16_172			Non-Converge	0	0	0.31145	9999	"P42:345:SPS:TUCO-1XXX"
FDNSLock-Blown up	06ALL	2 21SP	G16_172			Non-Converge	0	0	0.38269	9999	"P42:345:SPS:TUCO-1XXX"
FDNSLock-Blown up	06ALL	2 21WP	G16_172			Non-Converge	0	0	0.15151	9999	"P23:345:AEPW-LAWTON EASTSIDE CB 3429B N8TB"
FDNSLock-Blown up	06ALL	2 21WP	G16_172			Non-Converge	0	0	0.36484	9999	"P42:345:SPS:TUCO-1XXX"
FDNS	06ALL	2 21L	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.2066	144.6476	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 21L	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.2066	144.4356	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 21SP	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.24933	101.0826	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.23925	129.9269	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.23925	127.6278	"P12:345:SPS:J18.1.HOBBS.YOAKUM"
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.23053	121.4035	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'	559	559	0.23053	120.1632	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 2'	560	644	0.20827	119.0772	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	560	644	0.20827	119.0772	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	560	644	0.20827	112.9648	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	560	644	0.20827	112.9648	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	619	699	0.23271	100.4308	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'	619	699	0.23271	100.4308	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	559	643	0.20827	118.1293	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	559	643	0.20827	118.1293	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	559	643	0.20827	113.1779	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	2 21L	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	559	643	0.20827	113.1779	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	615	699	0.23271	100.4308	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	2 21WP	G16_172		FROM->TO'	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'	615	699	0.23271	100.4308	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'

G-V: VOLTAGE POWER FLOW ANALYSIS (CONSTRAINTS REQUIRING TRANSMISSION REINFORCEMENT)

Legend:

Column	Definition
Solution	Solution Method
Group	Model Case Identification: <ul style="list-style-type: none"> • ##ALL: ERIS-HVER • 00: ERIS-LVER • ##NR or 00NR: NRIS
Scenario	Upgrade Scenario Identification
Season	Model Year and Season
Source	Gen ID producing the TDF above the limit for the constraint
Monitored Element	Monitored Bus Identification
BC Voltage (pu)	Pre-transfer, post-contingency voltage
TC Voltage (pu)	Post-transfer, post-contingency voltage
Voltage Differ (pu)	TC Voltage - BC Voltage
VINIT (pu)	Post-transfer, pre-contingency (system intact) voltage
VMIN (pu)	Lower Voltage Limit
VMAX (pu)	Upper Voltage Limit
TDF	Transfer Distribution Factor for the Source
Contingency	Contingency Description

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, MONITORED ELEMENT, BC Voltage (PU), TC Voltage (PU), Voltage Differ (PU), VINIT (PU), VMIN (PU), VMAX(PU), TDF, and CONTINGENCY. The table contains a detailed list of power flow analysis scenarios for the OKLAUNION 345KV system, including contingencies like 'Hitchland Interchange', 'JOHNSON COUNTY - PITTSBURG 345KV CKT 1', and 'MOORE COUNTY INTERCHANGE'.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, MONITORED ELEMENT, BC Voltage (PU), TC Voltage (PU), Voltage Differ (PU), VINIT (PU), VMIN (PU), VMAX(PU), TDF, CONTINGENCY. Contains multiple rows of data for various power solutions and contingencies.

Table with columns: SOLUTION, GROUP, SCENARIO, SEASON, SOURCE, MONITORED ELEMENT, BC Voltage (PU), TC Voltage (PU), Voltage Differ (PU), VINIT (PU), VMIN (PU), VMAX(PU), TDF, CONTINGENCY. The table contains 1000 rows of data representing various power flow scenarios and contingencies.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNSLock	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.972404	0.918616	0.0537882	0.94142	0.92	0.28036	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'		
FDNS	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.9	0.08883	STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'		
FDNS	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.92	0.08883	STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'		
FDNS	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.9	0.08883	STLIN-DEMARC6 - SWEETWATER 230KV CKT 1'		
FDNS	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.92	0.08883	STLIN-DEMARC6 - SWEETWATER 230KV CKT 1'		
FDNS	06ALL	0 18G	G16_124	'SHAMROCK 69KV'	0.961202	0.917197	0.0440053	0.94142	0.92	0.10698	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	1	0.895314	0.104686	0.88941	0.9	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.992226	0.883218	0.109008	0.88941	0.9	0.05605	'CLEVELAND - G15066_T 345.00 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	1	0.897333	0.102667	0.88941	0.9	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	0.12862	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	0.12862	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.091046	0.90737	0.9	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.091046	0.90737	0.9	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	0.0549	'HOLCOMB - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	0.0549	'HOLCOMB - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	1	0.880613	0.119387	0.88941	0.9	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.992454	0.898125	0.0943297	0.88941	0.9	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	0.05829	'MINGO - RED WILLOW 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	0.05829	'MINGO - RED WILLOW 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988603	0.896797	0.091805	0.90737	0.9	0.05667	'MINGO - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'		
FDNSLock	06ALL	0 21WP	G16_124	'SPNSPUR_WND7345.00 345KV'	1	0.88416	0.11584	0.88941	0.9	0.04175	'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988744	0.897451	0.0912929	0.90737	0.9	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'		
FDNSLock	06ALL	2 18SP	G16_124	'STATELINE INTERCHANGE 115KV'	1.021039	1.075547	0.0545086	1.02261	0.9	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'		
FDNSLock	06ALL	2 18SP	G16_124	'STATELINE INTERCHANGE 230KV'	1.021124	1.069772	0.048648	1.01641	0.9	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	0.05397	System Intact		
FDNS	06ALL	0 21L	G16_124	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	0.05397	System Intact		
FDNS	06ALL	0 21WP	G16_124	'STATELINE INTERCHANGE 230KV'	0.999138	0.921867	0.0772707	0.92187	0.95	0.06866	System Intact		
FDNSLock	06ALL	2 18SP	G16_124	'STLN-DEMARC6 230KV'	1.020763	1.077596	0.0568331	1.01717	0.9	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'STLN-DEMARC6 230KV'	1.003486	0.940168	0.0633178	0.94017	0.95	0.08108	System Intact		
FDNSLock	06ALL	2 18SP	G16_124	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.9	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'		
FDNSLock	06ALL	2 18SP	G16_124	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.92	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'SWEETWATER 230KV'	1.005199	0.94769	0.0575091	0.94769	0.95	0.08108	System Intact		
FDNS	06ALL	0 21SP	G16_124	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21SP	G16_124	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	0.03761	System Intact		
FDNS	06ALL	0 21SP	G16_124	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	0.03761	System Intact		
FDNS	06ALL	0 21L	G16_124	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	0.77674	System Intact		
FDNS	06ALL	0 21L	G16_124	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	0.77674	System Intact		
FDNS	06ALL	0 21WP	G16_124	'TOLK STATION 345KV'	0.998751	0.931691	0.0670596	0.93169	0.95	0.79	System Intact		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	0.0549	'HOLCOMB - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	0.0549	'HOLCOMB - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'		
FDNS	06ALL	0 21WP	G16_124	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	0.05829	'MINGO - RED WILLOW 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	0.05829	'MINGO - RED WILLOW 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.98007	0.87691	0.10316	0.89054	0.9	0.05667	'MINGO - SETAB 345KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980898	0.883063	0.0978354	0.89054	0.9	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980898	0.883063	0.0978354	0.89054	0.9	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'		
FDNS	06ALL	0 21L	G16_124	'TUCO INTERCHANGE 345KV'	0.980444	0.88015	0.100294	0.89054	0.9	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'		

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.980444	0.88015	0.100294	0.89054	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.981517	0.880907	0.10061	0.89054	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_124	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_124	'WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.09982	System Intact
FDNS	06ALL	0	21L	G16_124	'WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.09982	System Intact
FDNS	06ALL	0	21W/P	G16_124	'WALKEMEYER 7345.00 345KV'	1.007796	0.942456	0.0653399	0.94246	0.95	1.05	0.12173	System Intact
FDNS	06ALL	0	18G	G16_124	'WELLINGTON 138KV'	0.974511	0.90498	0.0695304	0.98387	0.9	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	1	0.893351	0.106649	0.88805	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.95668	0.872255	0.0844254	0.88972	0.9	1.05	0.04093	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956363	0.883308	0.0763254	0.88972	0.9	1.05	0.07496	'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956363	0.883308	0.0763254	0.88972	0.9	1.05	0.07496	'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0635	'BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0635	'BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.957466	0.87909	0.0783766	0.88972	0.9	1.05	0.09591	'BVRCNTY7 345.00 - CLARKCOUNTY345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.95559	0.882665	0.0792949	0.88972	0.9	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955598	0.874507	0.0810914	0.88972	0.9	1.05	0.08567	'CHISHOLM7 345.00 - ELK CITY 230KV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.954336	0.873399	0.080937	0.88972	0.9	1.05	0.13443	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	0.989832	0.882469	0.107363	0.88805	0.9	1.05	0.05605	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955954	0.873539	0.0824149	0.88972	0.9	1.05	0.2904	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	1	0.894915	0.105085	0.88805	0.9	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956485	0.87518	0.0813048	0.88972	0.9	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956603	0.880581	0.0760213	0.88972	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956603	0.880581	0.0760213	0.88972	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955246	0.877048	0.0781975	0.88972	0.9	1.05	0.08567	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956451	0.881292	0.0751584	0.88972	0.9	1.05	0.06823	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.95642	0.868502	0.0879176	0.88972	0.9	1.05	0.06823	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955979	0.884514	0.0714648	0.88972	0.9	1.05	0.03768	'GEN542962 2-IATAN UNIT #2'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955566	0.884194	0.071372	0.88972	0.9	1.05	0.06902	'GEN640011 2-GERALD GENTLEMAN STATION UNIT 2'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955134	0.874023	0.0811113	0.88972	0.9	1.05	0.13443	'GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_124	'XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_124	'XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	1	0.880141	0.119859	0.88805	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955292	0.873096	0.0821962	0.88972	0.9	1.05	0.11609	'LAWTON EASTSIDE - TERRY RD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21W/P	G16_124	'XIT_INTG 6230.00 230KV'	0.990057	0.895858	0.0941991	0.88805	0.9	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.954897	0.874378	0.0805191	0.88972	0.9	1.05	0.11609	'SUNNYSIDE - TERRY RD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956892	0.881898	0.0749943	0.88972	0.9	1.05	0.07372	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_124	'XIT_INTG 6230.00 230KV'	0.956884	0.88173	0.0751533					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968898	0.870405	0.0984938	0.87749	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	18G	G16_125	'BORDER 7345.00 345KV'	0.967197	0.890522	0.0766751	0.95785	0.9	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.97206	0.882626	0.0894338	0.87749	0.9	1.05	0.05568	'G15063_T 345.00 - WOODWARD 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968558	0.870812	0.0977464	0.87749	0.9	1.05	0.05211	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968879	0.872198	0.0966812	0.87749	0.9	1.05	0.04607	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.966661	0.856513	0.110148	0.87749	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.15773	System Intact
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.15773	System Intact
FDNS	06ALL	0	21SP	G16_125	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.18992	System Intact
FDNS	06ALL	0	21SP	G16_125	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.18992	System Intact
FDNS	06ALL	0	21WVP	G16_125	'BORDER 7345.00 345KV'	0.973293	0.916543	0.0567498	0.91654	0.95	1.05	0.18131	System Intact
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969786	0.86839	0.101396	0.87749	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'BORDER 7345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'BOWERS INTERCHANGE 69KV'	1.034897	1.071238	0.0363411	1.03926	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'BOWERS TAP 69KV'	1.024455	1.061259	0.0368036	1.02888	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.07496	System Intact
FDNS	06ALL	0	21SP	G16_125	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.07496	System Intact
FDNS	06ALL	0	21WVP	G16_125	'BUSHLAND INTERCHANGE 230KV'	1.008722	0.932744	0.0759785	0.93274	0.95	1.05	0.07248	System Intact
FDNS	06ALL	0	21L	G16_125	'BVCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.10134	System Intact
FDNS	06ALL	0	21L	G16_125	'BVCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.10134	System Intact
FDNS	06ALL	0	21WVP	G16_125	'BVCNTY7 345.00 345KV'	1.006863	0.937326	0.0695368	0.93733	0.95	1.05	0.12063	System Intact
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.96842	0.890848	0.0775719	0.90812	0.9	1.05	0.04093	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.969176	0.897907	0.0712687	0.90812	0.9	1.05	0.09591	'BVCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.12685	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.12685	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.12685	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.12685	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.96764	0.893942	0.0736985	0.90812	0.9	1.05	0.08567	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.966475	0.893407	0.0734277	0.90812	0.9	1.05	0.13443	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967829	0.892317	0.075512	0.90812	0.9	1.05	0.2904	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968271	0.893636	0.0746344	0.90812	0.9	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968393	0.899	0.0693936	0.90812	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968393	0.899	0.0693936	0.90812	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967369	0.896732	0.0706367	0.90812	0.9	1.05	0.08567	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968277	0.899867	0.0684105	0.90812	0.9	1.05	0.06823	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968249	0.887365	0.0808841	0.90812	0.9	1.05	0.06823	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967124	0.893546	0.0735774	0.90812	0.9	1.05	0.13443	'GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967324	0.892308	0.0750153	0.90812	0.9	1.05	0.11609	'LAWTON EASTSIDE - TERRYD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967562	0.894086	0.073476	0.90812	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.967562	0.894086	0.073476	0.90812	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.969377	0.883503	0.0858741	0.90812	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL												

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_125	'CHAN+TASCOS6230.00 230KV'	0.968399	0.897758	0.0706407	0.90812	0.9	1.05	0.07934	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'CHISHOLM6 230.00 230KV'	1.000288	0.948971	0.0513175	0.94897	0.95	1.05	0.08108	System Intact
FDNSLock	06ALL	2	18SP	G16_125	'COBRN_CREEK3115.00 115KV'	1.025514	1.086157	0.060643	1.03258	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'CRAWFISH_DR 345.00 345KV'	0.986024	0.894426	0.0915983	0.90018	0.9	1.05	0.05636	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'CRAWFISH_DR 345.00 345KV'	0.986513	0.894866	0.0916473	0.90018	0.9	1.05	0.05636	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980035	0.879063	0.100972	0.88811	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980035	0.879063	0.100972	0.88811	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.979218	0.874262	0.104955	0.88811	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980072	0.880551	0.0995212	0.88811	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980072	0.880551	0.0995212	0.88811	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.9788	0.873777	0.105023	0.88811	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.9788	0.873777	0.105023	0.88811	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'CRAWFISH_DR 345.00 345KV'	0.986551	0.900183	0.0863677	0.90018	0.95	1.05	0.05636	System Intact
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980699	0.87833	0.102369	0.88811	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980371	0.869743	0.110627	0.88811	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'CRAWFISH_DR 345.00 345KV'	0.980371	0.869743	0.110627	0.88811	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.961158	0.926996	0.0341615	0.927	0.95	1.05	0.06793	System Intact
FDNS	06ALL	0	21SP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.961158	0.926996	0.0341615	0.927	0.95	1.05	0.06793	System Intact
FDNS	06ALL	0	21WP	G16_125	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.991095	0.92469	0.0664043	0.92469	0.95	1.05	0.0657	System Intact
FDNSLock	06ALL	2	18SP	G16_125	'DEMPSY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'DEMPSY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.92	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980991	0.885339	0.0956521	0.89054	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980991	0.885339	0.0956521	0.89054	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980867	0.881641	0.0992262	0.89054	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980867	0.881641	0.0992262	0.89054	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'ELK_CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'ELK_CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980069	0.876909	0.10316	0.89054	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980897	0.883062	0.0978355	0.89054	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980897	0.883062	0.0978355	0.89054	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980443	0.880149	0.100294	0.89054	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.980443	0.880149	0.100294	0.89054	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.979623	0.876328	0.103296	0.89054	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.979623	0.876328	0.103296	0.89054	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.981517	0.880906	0.100611	0.89054	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.98118	0.872152	0.109028	0.89054	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'ELK_CT1 345.00 345KV'	0.98118	0.872152	0.109028	0.89054	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039841	1.070043	0.0302023	1.07636	0.9	1.05	0.06425	'BVRCTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.07522	'BVRCTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.07522	'BVRCTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.07522	'BVRCTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.07522	'BVRCTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.034487	1.055636	0.0211487	1.07636	0.9	1.05	0.03816	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.039885	1.066267	0.0263828	1.07636	0.9	1.05	0.26749	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.044674	1.071002	0.0263281	1.07636	0.9	1.05	0.72308	'CROSSROADS 7345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.03816	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.03816	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.044405	1.066878	0.0224739	1.07636	0.9	1.05	0.07195	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'EVA REGULATOR 69KV'	1.044405	1.066						

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		2 21L	G16_125	'EVA REGULATOR 69KV'	1.038936	1.061424	0.0224878	1.07636	0.9	1.05	0.04407	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'EVA REGULATOR 69KV'	1.039113	1.066183	0.02707	1.07636	0.9	1.05	0.03866	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_125	'EVA REGULATOR 69KV'	1.039113	1.066183	0.02707	1.07636	0.9	1.05	0.03866	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_125	'EVA REGULATOR 69KV'	1.035187	1.060975	0.0257888	1.07636	0.9	1.05	0.04444	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		2 21L	G16_125	'EVA REGULATOR 69KV'	1.035187	1.060975	0.0257888	1.07636	0.9	1.05	0.04444	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0 21WP		G16_125	'EVA REGULATOR 69KV'	1	0.891847	0.108153	0.90099	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.996877	0.891114	0.105763	0.90694	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.99961	0.898925	0.100686	0.90694	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.99961	0.898925	0.100686	0.90694	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.999407	0.898982	0.100426	0.90694	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.999305	0.895412	0.103893	0.90694	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'FREWHELCOL17345.00 345KV'	0.999305	0.895412	0.103893	0.90694	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.001334	0.896008	0.105326	0.91176	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999401	0.898948	0.100453	0.90691	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14 345.00 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.001519	0.897894	0.103625	0.91001	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.001519	0.897894	0.103625	0.91001	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	0.99973	0.894228	0.105020	0.91001	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.000787	0.896003	0.104783	0.91001	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.000787	0.896003	0.104783	0.91001	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.002161	0.898514	0.103647	0.91001	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G10-14-1 115.00 115KV'	1.002161	0.898514	0.103647	0.91001	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G1149G1504 345.00 345KV'	0.968629	0.871264	0.0973891	0.87749	0.9	1.05	0.0521	'AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G1149G1504 345.00 345KV'	0.967938	0.871167	0.096715	0.87749	0.9	1.05	0.03055	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G1149G1504 345.00 345KV'	0.967938	0.871167	0.096715	0.87749	0.9	1.05	0.03055	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G1149G1504 345.00 345KV'	0.968898	0.870405	0.0984938	0.87749	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'G1149G1504 345.00 345KV'	0.968898	0.870405	0.0984938	0.87749	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_125	'G1149G1504 345.00 345KV'	0.967197	0.890522	0.07					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.966661	0.856513	0.110148	0.87749	0.9	1.05	0.05667	'MINGO - SETAB 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.969786	0.86839	0.101396	0.87749	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CRT @ 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'G1149G1504 345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'G16-045-SUB1345.00 345KV'	1	1.264422	0.264422	1.25588	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'G16-045-SUB2345.00 345KV'	1	1.2884	0.2884	1.27969	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GEN-2016-057345.00 345KV'	1	1.276997	0.276997	1.26837	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GEN-2016-057345.00 345KV'	1	1.324082	0.324082	1.31513	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987686	0.8893	0.098386	0.89793	0.9	1.05	0.06677	'CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987627	0.890547	0.097084	0.89794	0.9	1.05	0.05605	'CLEVELAND - G15066_T 345.00 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987221	0.890309	0.097412	0.89793	0.9	1.05	0.06677	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987658	0.887568	0.10009	0.89793	0.9	1.05	0.06677	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.986245	0.893592	0.092624	0.89794	0.9	1.05	0.11183	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.986045	0.890344	0.0957015	0.89794	0.9	1.05	0.05013	'GEN520947 1-HUGO1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	1	0.889226	0.110774	0.89794	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987716	0.887688	0.100028	0.89793	0.9	1.05	0.06677	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.98772	0.890597	0.0971233	0.89793	0.9	1.05	0.06677	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.05264	System Intact
FDNS	06ALL	0	21L	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.05264	System Intact
FDNS	06ALL	0	21WP	G16_125	'GRAPEVINE INTERCHANGE 230KV'	0.987715	0.897935	0.0897798	0.89794	0.95	1.05	0.06677	System Intact
FDNSLock	06ALL	2	18SP	G16_125	'Graves Sub 115KV'	1.02286	1.073505	0.056449	1.02368	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL	2	18SP	G16_125	'GRAVES SUB 69KV'	1.019223	1.076678	0.0574549	1.02628	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL	2	18SP	G16_125	'GREENBELT REC-KELLERVILLE 69KV'	1.022793	1.059641	0.0368478	1.02722	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL	2	18SP	G16_125	'GREENBELT REC-WHEELER 69KV'	1.018432	1.075929	0.0574974	1.02549	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CRT 2'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.9924	0.899665	0.092734	0.906	0.9	1.05	0.06669	'CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.991623	0.897496	0.0941273	0.906	0.9	1.05	0.06669	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CRT 2'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.04663	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.879993	0.109949	0.89231	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.879993	0.109949	0.89231	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	1	0.898257	0.101743	0.906	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CRT 1'
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.899397	0.0930243	0.906	0.9	1.05	0.06669	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.989009	0.876968	0.112041	0.89231	0.9	1.05	0.05667	'MINGO - SETAB 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990952	0.886007	0.104945	0.89231	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990952	0.886007	0.104945	0.89231	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.991239	0.884106	0.107134	0.89231	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.991239	0.884106	0.107134	0.89231	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.892308	0.0985786	0.89231	0.95	1.05	0.05348	System Intact
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.892308	0.0985786	0.89231	0.95	1.05	0.05348	System Intact
FDNS	06ALL	0	21SP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.997279	0.948785	0.0484942	0.94879	0.95	1.05	0.07074	System Intact
FDNS	06ALL	0	21SP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.997279	0.948785	0.0484942	0.94879	0.95	1.05	0.07074	System Intact
FDNS	06ALL	0	21WP	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.906	0.0864221	0.906	0.95	1.05	0.06669	System Intact
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.883832	0.107056	0.89231	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CRT @ 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990774	0.879976	0.110798	0.89231	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL	0	21L	G16_125	'HITCHLAND INTERCHANGE 230KV'	0.990774	0.879976	0.110798	0.89231	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.9994	0.906907	0.0924932	0.90691	0.95	1.05	0.20226	System Intact
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.9994	0.906907	0.0924932	0.90691	0.95	1.05	0.20226	System Intact
FDNS	06ALL		0 21WP	G16_125	'Hitchland Interchange 345KV'	1.002146	0.922169	0.0799766	0.92217	0.95	1.05	0.23533	System Intact
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.999401	0.898848	0.100453	0.90691	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'Hitchland Interchange 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'HOLLIS 138KV'	0.976893	0.911222	0.0656702	0.9869	0.92	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'HOLLIS TAP 138KV'	0.976866	0.911279	0.0655869	0.98686	0.92	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'HOPI SUB 115KV'	1.023085	1.051076	0.0279913	1.04506	0.9	1.05	0.10716	'HOBBS - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'HOPI SUB 115KV'	1.023085	1.051076	0.0279913	1.04506	0.9	1.05	0.10716	'HOBBS - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.9	1.05	0.08417	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.92	1.05	0.08417	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.9	1.05	0.08417	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.92	1.05	0.08417	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	'KINGSMILL INTERCHANGE 69KV'	1.029913	1.052916	0.0230038	1.03322	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'LAWTON EASTSIDE 345KV'	0.988849	0.913434	0.0754145	0.97952	0.92	1.05	0.06823	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'LAWTON EASTSIDE 345KV'	0.989403	0.914396	0.0750066	0.97531	0.92	1.05	0.08746	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_125	'LAWTON EASTSIDE 345KV'	0.989431	0.918226	0.0712057	0.97728	0.92	1.05	0.08777	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.18026	System Intact
FDNS	06ALL		0 21L	G16_125	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.18026	System Intact
FDNSLock	06ALL		2 18SP	G16_125	'LYONS SUB 69KV'	1.014907	1.052071	0.0371634	1.01937	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	'LYONS TAP 69KV'	1.02031	1.057277	0.0369672	1.02475	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	'MAGIC CITY 69KV'	1.019556	1.073698	0.057742	1.02305	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	'MCCULLOUGH SUB 69KV'	1.029286	1.058355	0.0290693	1.03294	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.9	1.05	0.10584	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.92	1.05	0.10584	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.9	1.05	0.10584	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.92	1.05	0.10584	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.9	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.92	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_125	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.9	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	1	0.89583	0.10417	0.88973	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984361	0.88184	0.10252	0.88973	0.9	1.05	0.05884	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	1	0.899523	0.100477	0.88973	0.9	1.05	0.05884	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984429	0.883546	0.100883	0.88973	0.9	1.05	0.05605	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	1	0.897376	0.102624	0.88973	0.9	1.05	0.05636	'CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.9844	0.882784	0.101617	0.88973	0.9	1.05	0.05884	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984013	0.880494	0.10352	0.88973	0.9	1.05	0.05884	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 18SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.894821	0.0836055	0.90209	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.894821	0.0836055	0.90209	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978885	0.894146	0.0847391	0.90209	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978885	0.894146	0.0847391	0.90209	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984366	0.881034	0.103332	0.88973	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984366	0.881034	0.103332	0.88973	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	1	0.880735	0.119265	0.88973	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984394	0.881206	0.103188	0.88973	0.9	1.05	0.05884	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984782	0.898919	0.0858634	0.88973	0.9	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979439	0.894086	0.0853535	0.90209	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979439	0.894086	0.0853535	0.90209	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978672	0.891548	0.0871245	0.90209	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.958425	0.898039	0.0603866	0.922	0.9	1.05	0.06227	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.969552	0.897217	0.0723359	0.922	0.9	1.05	0.06227	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979023	0.896141	0.0828824	0.90209	0.9	1.05	0.06839	'NEHWART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979023	0.896141	0.0828824	0.90209	0.9	1.05	0.06839	'NEHWART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.981309	0.89794	0.0833692	0.922	0.9	1.05	0.06227	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984412	0.88307	0.101342	0.88973	0.9	1.05	0.05884	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	1	0.895688	0.104312	0.88973	0.9	1.05	0.05884	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979364	0.895636	0.0837274	0.90209	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.979364	0.895636	0.0837274	0.90209	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.902086	0.0768393	0.90209	0.95	1.05	0.04867	System Intact
FDNS	06ALL	</											

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0602421	0.92201	0.95	1.05	0.06227	System Intact	
FDNS	06ALL	0 21SP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0602421	0.92201	0.95	1.05	0.06227	System Intact	
FDNS	06ALL	0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984394	0.889732	0.0946618	0.88973	0.95	1.05	0.05884	System Intact	
FDNS	06ALL	0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.89435	0.0845755	0.90209	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'	
FDNS	06ALL	0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978815	0.891285	0.0875295	0.90209	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.978815	0.891285	0.0875295	0.90209	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'MOORE COUNTY INTERCHANGE 230KV'	0.984493	0.896089	0.0884044	0.88973	0.9	1.05	0.05884	TOLK STATION TMR TERTIARY 13KV SWITCHED SHUNT	
FDNS	06ALL	0 21SP	G16_125	'NEWHART 230 230KV'	0.958234	0.899124	0.0591093	0.93684	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'	
FDNS	06ALL	0 21SP	G16_125	'NEWHART 230 230KV'	0.958234	0.899124	0.0591093	0.93684	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'	
FDNS	06ALL	0 21SP	G16_125	'NEWHART 230 230KV'	0.978922	0.936841	0.0420805	0.93684	0.95	1.05	0.07054	System Intact	
FDNS	06ALL	0 21SP	G16_125	'NEWHART 230 230KV'	0.978922	0.936841	0.0420805	0.93684	0.95	1.05	0.07054	System Intact	
FDNS	06ALL	0 21WP	G16_125	'NEWHART 230 230KV'	1.00408	0.937379	0.0667012	0.93738	0.95	1.05	0.06826	System Intact	
FDNSLock	06ALL	2 18SP	G16_125	'NEXTERA 230KV'	1.019908	1.081619	0.0617117	1.01831	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'	
FDNSLock	06ALL	2 18SP	G16_125	'NEXTERA 230KV'	1.019908	1.081619	0.0617117	1.01831	0.92	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'NICHOLS STATION 230KV'	1.007788	0.942771	0.0650167	0.94277	0.95	1.05	0.03563	System Intact	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000878	0.893891	0.106987	0.9106	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000878	0.893891	0.106987	0.9106	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	0.999577	0.89775	0.101827	0.9106	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	0.999577	0.89775	0.101827	0.9106	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000096	0.898488	0.101608	0.9106	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000096	0.898488	0.101608	0.9106	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	0.998723	0.894825	0.103898	0.9106	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000589	0.899108	0.101481	0.9106	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 3115.00 115KV'	1.000589	0.899108	0.101481	0.9106	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.996893	0.891121	0.105771	0.90695	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999633	0.898931	0.100702	0.90695	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999633	0.898931	0.100702	0.90695	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.99943	0.898988	0.100441	0.90695	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999327	0.895419	0.103908	0.90695	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'NOVUS1 7345.00 345KV'	0.999327	0.895419	0.103908	0.90695	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.9	1.05	0.10584	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.92	1.05	0.10584	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.9	1.05	0.10584	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.92	1.05	0.10584	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.92	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	2 21SP	G16_125	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.92	1.05	0.03962	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'OCHILTREE 230KV'	1	0.899887	0.100113	0.89422	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.989882	0.88333	0.106552	0.88854	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.989882	0.88333	0.106552	0.88854	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'	
FDNS	06ALL	0 21WP	G16_125	'OCHILTREE 230KV'	0.981367	0.889038	0.0923285	0.89422	0.9	1.05	0.05605	'CLEVELAND - G15066 T 345.00 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.990686	0.87324	0.117446	0.88854	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.990686	0.87324	0.117446	0.88854	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'	
FDNS	06ALL	0 21SP	G16_125	'OCHILTREE 230KV'	0.979564	0.896802	0.0827622	0.93289	0.9	1.05	0.12862	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'	
FDNS	06ALL	0 21SP	G16_125	'OCHILTREE 230KV'	0.979564	0.896802	0.0827622	0.93289	0.9	1.05	0.12862	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'	
FDNS	06ALL	0 21WP	G16_125	'OCHILTREE 230KV'	1	0.886255	0.113745	0.89422	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'	
FDNS	06ALL	0 21L	G16_125	'OCHILTREE 230KV'	0.98985	0.877							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_125	'OCHILTREE 230KV'	0.990281	0.880413	0.109868	0.88854	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OCHILTREE 230KV'	0.989866	0.879984	0.109882	0.88854	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'OCHILTREE 230KV'	0.989752	0.87607	0.113682	0.88854	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OCHILTREE 230KV'	0.989752	0.87607	0.113682	0.88854	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.06071	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.06071	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.9	1.05	0.08079	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.92	1.05	0.08079	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.9	1.05	0.0521	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.92	1.05	0.0521	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.06317	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.06317	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.07482	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.92	1.05	0.07482	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.06317	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.06317	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.07482	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.92	1.05	0.07482	BADGER 345.00 - BVRNCYT7 345.00 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980537	0.900088	0.0804487	0.90693	0.9	1.05	0.0789	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980537	0.900088	0.0804487	0.90693	0.92	1.05	0.0789	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.9	1.05	0.06253	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.06253	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.06253	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.06253	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.9865	0.909737	0.0767626	0.92105	0.92	1.05	0.046	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.9	1.05	0.04093	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.92	1.05	0.04093	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.9	1.05	0.12063	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.92	1.05	0.12063	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	2	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	1.002267	0.907976	0.0942918	0.9613	0.9	1.05	0.1386	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	3	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.9	1.05	0.12088	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	3	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.92	1.05	0.12088	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	3	21WP	G16_125	'OKLAUN HVDC7345.00 345KV'	1.002499	0.912851	0.0899981	0.96336	0.92	1.05	0.13878	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.9	1.05	0.13635	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.92	1.05	0.13635	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.9	1.05	0.03055	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.92	1.05	0.03055	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.9	1.05	0.03055	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.92	1.05	0.03055	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03395	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03395	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03395	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03395	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.988869	0.915819	0.0730501	0.92105	0.92	1.05	0.08487	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.9	1.05	0.05807	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.92	1.05	0.05807	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.988869	0.915819	0.0730501	0.92105	0.9	1.05	0.08487	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.9	1.05	0.05807	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.92	1.05	0.05807	BUFFALO 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989671	0.914596	0.0750753	0.92105	0.92	1.05	0.07809	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989671	0.914596	0.0750753	0.92105	0.92	1.05	0.07809	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.9	1.05	0.07496	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.92	1.05	0.07496	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.9	1.05	0.07496	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.92	1.05	0.07496	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.0635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05	0.0635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.0635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05		

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.9873	0.910261	0.077039	0.92105	0.92	1.05	0.04198	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.9	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.92	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.9	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.92	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.9	1.05	0.09285	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.92	1.05	0.09285	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.9	1.05	0.08567	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.92	1.05	0.08567	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.9	1.05	0.04832	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.92	1.05	0.04832	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.988	0.912526	0.0754739	0.90693	0.92	1.05	0.13443	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976369	0.814477	0.161892	0.82236	0.9	1.05	0.03602	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976369	0.814477	0.161892	0.82236	0.92	1.05	0.03602	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97879	0.817345	0.161444	0.82662	0.9	1.05	0.05605	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.97879	0.817345	0.161444	0.82662	0.92	1.05	0.05605	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	2 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	1.004016	0.909447	0.0945695	0.95817	0.92	1.05	0.11626	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	3 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	1.003876	0.916102	0.087743	0.96159	0.92	1.05	0.11645	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.984929	0.914829	0.0701002	0.90693	0.92	1.05	0.2904	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	1	0.836797	0.163203	0.82662	0.9	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	1	0.836797	0.163203	0.82662	0.92	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98211	0.898251	0.0838595	0.90693	0.9	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98211	0.898251	0.0838595	0.90693	0.92	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989075	0.915082	0.0739931	0.92105	0.9	1.05	0.07118	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.989075	0.915082	0.0739931	0.92105	0.92	1.05	0.07118	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.92	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	0.92	1.05	0.04198	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	0.9	1.05	0.04198	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.9	1.05	0.11709	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.9	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 18G	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.9	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.92	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.92	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.92	1.05	0.10852	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.92	1.05	0.10852	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980339	0.828918	0.151421	0.82236	0.9	1.05	0.05568	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980339	0.828918	0.151421	0.82236	0.92	1.05	0.05568	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980726	0.829473	0.151252	0.82236	0.9	1.05	0.05568	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980726	0.829473	0.151252	0.82236	0.92	1.05	0.05568	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.9	1.05	0.03602	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.92	1.05	0.03602	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.9	1.05	0.05605	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.92	1.05	0.05605	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.92	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0 21L	G16_125	G16_125	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05		

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.973708	0.843787	0.129921	0.90693	0.9	1.05	0.06823	G16-091-TAP 345.00 -LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.973708	0.843787	0.129921	0.90693	0.92	1.05	0.06823	G16-091-TAP 345.00 -LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.007264	0.914312	0.0929524	0.95817	0.92	1.05	0.08746	G16-091-TAP 345.00 -LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.007696	0.919528	0.0881681	0.96159	0.92	1.05	0.0877	G16-091-TAP 345.00 -LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.97829	0.821196	0.157095	0.82662	0.9	1.05	0.11183	GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.97829	0.821196	0.157095	0.82662	0.92	1.05	0.11183	GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977538	0.82082	0.156718	0.82662	0.9	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977538	0.82082	0.156718	0.82662	0.92	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977537	0.820819	0.156718	0.82662	0.9	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977537	0.820819	0.156718	0.82662	0.92	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977302	0.819764	0.157538	0.82662	0.9	1.05	0.11183	GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.977302	0.819764	0.157538	0.82662	0.92	1.05	0.11183	GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.975394	0.813797	0.161597	0.82662	0.9	1.05	0.05013	GEN520947 1-HUGOI1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.975394	0.813797	0.161597	0.82662	0.92	1.05	0.05013	GEN520947 1-HUGOI1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.985011	0.912126	0.0728853	0.90693	0.92	1.05	0.10852	GEN531447 1-HOLCOMB GENERATOR'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976606	0.814764	0.161842	0.82236	0.9	1.05	0.04607	GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976606	0.814764	0.161842	0.82236	0.92	1.05	0.04607	GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.876869	0.123131	0.92105	0.9	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.876869	0.123131	0.92105	0.92	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.876869	0.123131	0.92105	0.9	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.876869	0.123131	0.92105	0.92	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.890695	0.109305	0.92105	0.9	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.890695	0.109305	0.92105	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.890695	0.109305	0.92105	0.9	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	1	0.890695	0.109305	0.92105	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.987879	0.906545	0.0813338	0.92105	0.92	1.05	0.06798	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.987879	0.906545	0.0813338	0.92105	0.92	1.05	0.06798	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978717	0.882379	0.0963377	0.90693	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978717	0.882379	0.0963377	0.90693	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978717	0.882379	0.0963377	0.90693	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978717	0.882379	0.0963377	0.90693	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	OKLAUN HVDC7345.00 345KV	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	OKLAUN HVDC7345.00 345KV	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	OKLAUN HVDC7345.00 345KV	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	OKLAUN HVDC7345.00 345KV	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	OKLAUN HVDC7345.00 345KV	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	OKLAUN HVDC7345.00 345KV	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	OKLAUN HVDC7345.00 345KV	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	OKLAUN HVDC7345.00 345KV	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.006676	0.905008	0.101668	0.95817	0.92	1.05	0.15207	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.006676	0.905008	0.101668	0.95817	0.92	1.05	0.15207	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.006676	0.905008	0.101668	0.95817	0.92	1.05	0.15207	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.006209	0.910131	0.096078	0.96159	0.92	1.05	0.15065	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.006209	0.910131	0.096078	0.96159	0.92	1.05	0.15065	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978096	0.874518	0.103579	0.90693	0.9	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978096	0.874518	0.103579	0.90693	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978096	0.874518	0.103579	0.90693	0.9	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.978096	0.874518	0.103579	0.90693	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976873	0.811795	0.165078	0.82236	0.9	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976873	0.811795	0.165078	0.82236	0.92	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976873	0.811795	0.165078	0.82236	0.9	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976873	0.811795	0.165078	0.82236	0.92	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976642	0.805198	0.171445	0.82236	0.9	1.05	0.0536	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976642	0.805198	0.171445	0.82236	0.92	1.05	0.0536	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976642	0.805198	0.171445	0.82236	0.9	1.05	0.0536	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.976642	0.805198	0.171445	0.82236	0.92	1.05	0.0536	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06732	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06732	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06732	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06732	HOLCOMB - SETAB 345KV CKT 1'
FDNS													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	1	0.819516	0.180484	0.82662	0.9	1.05	0.04815	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	1	0.819516	0.180484	0.82662	0.92	1.05	0.04815	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979503	0.835244	0.144259	0.82662	0.9	1.05	0.08347	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979503	0.835244	0.144259	0.82662	0.92	1.05	0.08347	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.978107	0.883386	0.0947209	0.92105	0.9	1.05	0.10698	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.978107	0.883386	0.0947209	0.92105	0.92	1.05	0.10698	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979272	0.897923	0.0813496	0.90693	0.9	1.05	0.07382	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979272	0.897923	0.0813496	0.90693	0.92	1.05	0.07382	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979276	0.897924	0.0813521	0.90693	0.9	1.05	0.07377	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979276	0.897924	0.0813521	0.90693	0.92	1.05	0.07377	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.989081	0.915814	0.0732667	0.92105	0.92	1.05	0.06413	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.989081	0.915814	0.0732667	0.92105	0.92	1.05	0.06413	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.973717	0.795087	0.178631	0.82236	0.9	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.973717	0.795087	0.178631	0.82236	0.92	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.973717	0.795087	0.178631	0.82236	0.9	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.973717	0.795087	0.178631	0.82236	0.92	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.980152	0.900762	0.0793899	0.90693	0.92	1.05	0.06902	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.980152	0.900762	0.0793899	0.90693	0.92	1.05	0.06902	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.988977	0.915872	0.0731052	0.92105	0.92	1.05	0.06427	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974052	0.793744	0.180308	0.82236	0.9	1.05	0.05667	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974052	0.793744	0.180308	0.82236	0.92	1.05	0.05667	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979655	0.898747	0.0809081	0.90693	0.9	1.05	0.06803	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979655	0.898747	0.0809081	0.90693	0.92	1.05	0.06803	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.987523	0.907259	0.0802643	0.92105	0.92	1.05	0.06031	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.987523	0.907259	0.0802643	0.92105	0.92	1.05	0.06031	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.977078	0.810603	0.166475	0.82236	0.9	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.977078	0.810603	0.166475	0.82236	0.92	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.977078	0.810603	0.166475	0.82236	0.9	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.977078	0.810603	0.166475	0.82236	0.92	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979135	0.894492	0.084643	0.90693	0.9	1.05	0.07054	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979135	0.894492	0.084643	0.90693	0.92	1.05	0.07054	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979135	0.894492	0.084643	0.90693	0.9	1.05	0.07054	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.989144	0.912432	0.0767128	0.92105	0.92	1.05	0.0634	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.989144	0.912432	0.0767128	0.92105	0.92	1.05	0.0634	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.977927	0.875245	0.102681	0.90693	0.9	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.977927	0.875245	0.102681	0.90693	0.9	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	1	0.819847	0.180153	0.82662	0.9	1.05	0.04175	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	1	0.819847	0.180153	0.82662	0.92	1.05	0.04175	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979088	0.821298	0.157791	0.82662	0.9	1.05	0.03495	PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979088	0.821298	0.157791	0.82662	0.92	1.05	0.03495	PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979088	0.821298	0.157791	0.82662	0.9	1.05	0.03495	PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	OKLAUN HVDC7345.00 345KV	0.979088	0.821298	0.157791	0.82662	0.92	1.05	0.03495	PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.988662	0.914379	0.0742828	0.92105	0.92	1.05	0.06515	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.988662	0.914379	0.0742828	0.92105	0.92	1.05	0.06515	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974773	0.799356	0.175417	0.82236	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974773	0.799356	0.175417	0.82236	0.92	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974773	0.799356	0.175417	0.82236	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.974773	0.799356	0.175417	0.82236	0.92	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06682	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06682	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06682	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06682	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.977849	0.843276	0.134573	0.92105	0.9	1.05	0.28036	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.977849	0.843276	0.134573	0.92105	0.92	1.05	0.28036	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	OKLAUN HVDC7345.00 345KV	1.009382	0.908955	0.100427	0.95817	0.92	1.05	0.25279	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_125	OKLAUN HVDC7345.00 345KV	1.005603	0.919735	0.0858682	0.9613	0.92	1.05	0.26749	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.980195	0.875814	0.104381	0.92105	0.9	1.05	0.08883	STALINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.980195	0.875814	0.104381	0.92105	0.92	1.05	0.08883	STALINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.980171	0.875531	0.10464	0.92105	0.9	1.05	0.08883	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	OKLAUN HVDC7345.00 345KV	0.980171	0.875531	0.10464	0.92105	0.92	1.05	0.08883	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	OKLAUN HVDC7345.00 345KV	0.99092	0.919373	0.0715467	0.90693	0.92	1.05	0.11609	SUNNYSIDE - TERRV07 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.00 345KV	0.975713	0.801221	0.174492	0.82236	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	OKLAUN HVDC7345.								

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980147	0.89673	0.083417	0.90693	0.92	1.05	0.07372	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.9	1.05	0.07387	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.92	1.05	0.07387	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977901	0.810213	0.167688	0.82236	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.977901	0.810213	0.167688	0.82236	0.92	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUN HVDC7345.00 345KV'	0.982034	0.901547	0.0804876	0.90693	0.92	1.05	0.13049	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.92	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.92	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.92	1.05	0.06071	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.92	1.05	0.06071	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.92	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	1	0.834104	0.165896	0.82646	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	1	0.834104	0.165896	0.82646	0.92	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.9	1.05	0.0521	'AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.92	1.05	0.0521	'AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.06317	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.06317	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.07482	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.07482	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.06317	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.06317	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 2'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.07482	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 2'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.07482	'BADGER 345.00 - BVRCTNY7 345.00 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.0789	'BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.92	1.05	0.0789	'BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.0789	'BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.06253	'BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.06253	'BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.06253	'BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.06253	'BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.986311	0.909563	0.076748	0.92088	0.92	1.05	0.046	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.9	1.05	0.04093	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.92	1.05	0.04093	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.9	1.05	0.12063	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.92	1.05	0.12063	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21W	G16_125	'OKLAUNION 345KV'	1.002076	0.907802	0.0942737	0.96111	0.92	1.05	0.1386	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	3 21L	G16_125	'OKLAUNION 345KV'	1.001238	0.898356	0.102881	0.9614	0.9	1.05	0.12088	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	3 21L	G16_125	'OKLAUNION 345KV'	1.001238	0.898356	0.102881	0.9614	0.92	1.05	0.12088	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	3 21W	G16_125	'OKLAUNION 345KV'	1.002657	0.912676	0.0899807	0.96317	0.92	1.05	0.13878	'BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.9	1.05	0.13635	'BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.92	1.05	0.13635	'BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.991068	0.915633	0.0754344	0.92088	0.92	1.05	0.22033	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.991068	0.915633	0.0754344	0.92088	0.92	1.05	0.22033	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.9	1.05	0.21939	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.92	1.05	0.21939	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.9	1.05	0.21939	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.92	1.05	0.21939	'BORDER 7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.9	1.05	0.03055	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.92	1.05	0.03055	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.9	1.05	0.03055	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03395	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.92	1.05	0.03395	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03395	'BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08487	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08487	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05807	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92	1.05	0.07809	'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92			

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.9	1.05	0.0635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.92	1.05	0.0635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.9	1.05	0.21939	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.92	1.05	0.21939	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.9	1.05	0.21939	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.92	1.05	0.21939	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.986971	0.904776	0.0821953	0.92088	0.92	1.05	0.09997	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978215	0.889019	0.0891958	0.90675	0.9	1.05	0.09591	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978215	0.889019	0.0891958	0.90675	0.92	1.05	0.09591	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12684	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12684	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12684	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12684	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.9	1.05	0.20927	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.92	1.05	0.20927	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.987111	0.910087	0.0770242	0.92088	0.92	1.05	0.04198	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978221	0.893666	0.0845613	0.90675	0.9	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978221	0.893666	0.0845613	0.90675	0.92	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.9	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.92	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.9	1.05	0.09285	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.92	1.05	0.09285	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.9	1.05	0.08567	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.92	1.05	0.08567	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.9	1.05	0.04832	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.92	1.05	0.04832	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.987811	0.912352	0.0754595	0.90675	0.92	1.05	0.13443	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.836506	0.163494	0.82646	0.9	1.05	0.20927	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.836506	0.163494	0.82646	0.92	1.05	0.20927	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.9762	0.814321	0.161879	0.8222	0.9	1.05	0.03602	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.9762	0.814321	0.161879	0.8222	0.92	1.05	0.03602	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.978603	0.817189	0.161413	0.82646	0.9	1.05	0.05605	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.978603	0.817189	0.161413	0.82646	0.92	1.05	0.05605	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_125	'OKLAUNION 345KV'	1.003842	0.909273	0.0945696	0.95798	0.92	1.05	0.11626	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_125	'OKLAUNION 345KV'	1.003703	0.915927	0.0877757	0.9614	0.92	1.05	0.11645	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.984741	0.914654	0.0700877	0.90675	0.92	1.05	0.2904	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.9	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.92	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981922	0.898079	0.0838434	0.90675	0.9	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981922	0.898079	0.0838434	0.90675	0.92	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.9	1.05	0.20927	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.92	1.05	0.20927	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988886	0.914907	0.073979	0.92088	0.92	1.05	0.07118	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988886	0.914907	0.073979	0.92088	0.92	1.05	0.07118	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.92	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05238	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.9	1.05	0.20927	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.92	1.05	0.20927	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04198	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04198	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.11709	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'								

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.10852	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.979812	0.89295	0.086862	0.90675	0.9	1.05	0.10852	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.10852	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.98017	0.82876	0.15141	0.8222	0.9	1.05	0.05568	G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.98017	0.82876	0.15141	0.8222	0.92	1.05	0.05568	G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.980556	0.829315	0.151241	0.8222	0.9	1.05	0.05568	G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.980556	0.829315	0.151241	0.8222	0.92	1.05	0.05568	G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.97636	0.814802	0.161557	0.8222	0.9	1.05	0.03602	G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.97636	0.814802	0.161557	0.8222	0.92	1.05	0.03602	G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.978702	0.819989	0.158713	0.82646	0.9	1.05	0.05605	G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.978702	0.819989	0.158713	0.82646	0.92	1.05	0.05605	G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975396	0.797374	0.178021	0.8222	0.9	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975396	0.797374	0.178021	0.8222	0.92	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975396	0.797374	0.178021	0.8222	0.9	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975396	0.797374	0.178021	0.8222	0.92	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	0.97866	0.886465	0.0921957	0.92088	0.9	1.05	0.09285	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	0.97866	0.886465	0.0921957	0.92088	0.92	1.05	0.09285	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.973172	0.877585	0.0955868	0.90675	0.9	1.05	0.08567	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.973172	0.877585	0.0955868	0.90675	0.92	1.05	0.08567	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975301	0.810651	0.16465	0.8222	0.9	1.05	0.0521	G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.975301	0.810651	0.16465	0.8222	0.92	1.05	0.0521	G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	1	0.832428	0.167572	0.82646	0.9	1.05	0.05013	G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	1	0.832428	0.167572	0.82646	0.92	1.05	0.05013	G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	0.983544	0.911925	0.0716185	0.92088	0.92	1.05	0.0687	G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.97532	0.893634	0.081686	0.90675	0.9	1.05	0.06823	G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.97532	0.893634	0.081686	0.90675	0.92	1.05	0.06823	G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.973522	0.843626	0.129896	0.90675	0.9	1.05	0.06823	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.973522	0.843626	0.129896	0.90675	0.92	1.05	0.06823	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	OKLAUNION 345KV	1.00709	0.914137	0.0929529	0.95798	0.92	1.05	0.08746	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	3	21L	G16_125	OKLAUNION 345KV	1.007522	0.919352	0.0881696	0.9614	0.92	1.05	0.0877	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.978103	0.821039	0.157065	0.82646	0.9	1.05	0.11183	GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.978103	0.821039	0.157065	0.82646	0.92	1.05	0.11183	GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.977351	0.820663	0.156688	0.82646	0.9	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.977351	0.820663	0.156688	0.82646	0.92	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.97735	0.820662	0.156688	0.82646	0.9	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.97735	0.820662	0.156688	0.82646	0.92	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.977115	0.819607	0.157508	0.82646	0.9	1.05	0.11183	GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.977115	0.819607	0.157508	0.82646	0.92	1.05	0.11183	GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.975208	0.813641	0.161567	0.82646	0.9	1.05	0.05013	GEN520947 1-HUGO1'
FDNS	06ALL	0	21WVP	G16_125	OKLAUNION 345KV	0.975208	0.813641	0.161567	0.82646	0.92	1.05	0.05013	GEN520947 1-HUGO1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.984823	0.911952	0.0728713	0.90675	0.92	1.05	0.10852	GEN531447 1-HOLCOMB GENERATOR'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.976438	0.814608	0.161829	0.8222	0.9	1.05	0.04607	GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.976438	0.814608	0.161829	0.8222	0.92	1.05	0.04607	GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.876701	0.123299	0.92088	0.9	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.876701	0.123299	0.92088	0.92	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.876701	0.123299	0.92088	0.9	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.876701	0.123299	0.92088	0.92	1.05	0.07318	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.890525	0.109475	0.92088	0.9	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.890525	0.109475	0.92088	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.890525	0.109475	0.92088	0.9	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	1	0.890525	0.109475	0.92088	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	0.98769	0.906372	0.0813183	0.92088	0.92	1.05	0.06798	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	OKLAUNION 345KV	0.98769	0.906372	0.0813183	0.92088	0.9	1.05	0.06798	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.97853	0.88221	0.0963194	0.90675	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	17WVP	G16_125	OKLAUNION 345KV	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	17WVP	G16_125	OKLAUNION 345KV	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	17WVP	G16_125	OKLAUNION 345KV	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	17WVP	G16_125	OKLAUNION 345KV	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	OKLAUNION 345KV	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	OKLAUNION 345KV	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	OKLAUNION 345KV	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_125	OKLAUNION 345KV	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	OKLAUNION 345KV	1.006502	0.904835	0.101667	0.95798	0.92	1.05	0.15207	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	OKLAUNION 345KV	1.006502	0.904835	0.101667	0.95798	0.9	1.05	0.15207	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	3	21L	G16_125	OKLAUNION 345KV	1.006035	0.909957	0.096078	0.9614	0.92	1.05	0.15065	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	3	21L	G16_125	OKLAUNION 345KV	1.006035	0.909957	0.096078	0.9614	0.9	1.05	0.15065	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	OKLAUNION 345KV	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	OKLAUNION 345KV	0.976704	0.81164	0.165064	0.8222	0.9	1.05</		

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.92	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.92	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.92	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.9	1.05	0.06732	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.92	1.05	0.06732	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.9	1.05	0.06732	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.92	1.05	0.06732	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.9	1.05	0.04243	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.92	1.05	0.04243	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.9	1.05	0.04243	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.92	1.05	0.04243	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.0412	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.0412	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.0412	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.0412	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.819359	0.180641	0.82646	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	1	0.819359	0.180641	0.82646	0.92	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.9	1.05	0.20927	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.92	1.05	0.20927	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.9	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.92	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.97792	0.883217	0.0947028	0.92088	0.9	1.05	0.10698	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.97792	0.883217	0.0947028	0.92088	0.92	1.05	0.10698	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979085	0.897751	0.0813341	0.90675	0.9	1.05	0.07382	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979085	0.897751	0.0813341	0.90675	0.92	1.05	0.07382	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979089	0.897753	0.0813365	0.90675	0.9	1.05	0.07377	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979089	0.897753	0.0813365	0.90675	0.92	1.05	0.07377	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988892	0.915639	0.0732526	0.92088	0.92	1.05	0.06413	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988892	0.915639	0.0732526	0.92088	0.92	1.05	0.06413	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.92	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.92	1.05	0.06902	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.9	1.05	0.06902	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988788	0.915697	0.0730912	0.92088	0.92	1.05	0.06427	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.92	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.9	1.05	0.06803	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.92	1.05	0.06803	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.92	1.05	0.06031	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.92	1.05	0.06031	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.98162	0.900538	0.081082	0.90675	0.92	1.05	0.21939	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.981681	0.900667	0.081614	0.90675	0.92	1.05	0.21939	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.92	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.92	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.92	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.92	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.92	1.05	0.0634	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.92	1.05	0.0634	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.92	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FD													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.924076	0.840754	0.0833216	0.92088	0.9	1.05	0.22033	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.924076	0.840754	0.0833216	0.92088	0.92	1.05	0.22033	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.9	1.05	0.22033	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.92	1.05	0.22033	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	18SP	G16_125	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.9	1.05	0.21907	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	18SP	G16_125	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.92	1.05	0.21907	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	18SP	G16_125	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.9	1.05	0.21907	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	0	18SP	G16_125	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.92	1.05	0.21907	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.916689	0.814681	0.102008	0.90675	0.9	1.05	0.21939	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.916689	0.814681	0.102008	0.90675	0.92	1.05	0.21939	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	18G	G16_125	'OKLAUNION 345KV'	0.958182	0.918899	0.0392824	0.98544	0.92	1.05	0.15472	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	2	18G	G16_125	'OKLAUNION 345KV'	0.958182	0.918899	0.0392824	0.98544	0.92	1.05	0.15472	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	21L	G16_125	'OKLAUNION 345KV'	0.956337	0.88633	0.0700077	0.95798	0.9	1.05	0.1258	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	21L	G16_125	'OKLAUNION 345KV'	0.956337	0.88633	0.0700077	0.95798	0.92	1.05	0.1258	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	21SP	G16_125	'OKLAUNION 345KV'	0.952946	0.916513	0.0364331	0.98214	0.92	1.05	0.15248	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	2	21SP	G16_125	'OKLAUNION 345KV'	0.952947	0.916475	0.0364715	0.98214	0.92	1.05	0.15248	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	21WP	G16_125	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.9	1.05	0.14628	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	2	21WP	G16_125	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.92	1.05	0.14628	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	2	21WP	G16_125	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.9	1.05	0.14628	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	2	21WP	G16_125	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.92	1.05	0.14628	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	18G	G16_125	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.15491	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	3	18G	G16_125	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.15491	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	21L	G16_125	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.9	1.05	0.126	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	21L	G16_125	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.92	1.05	0.126	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	21SP	G16_125	'OKLAUNION 345KV'	0.952924	0.917157	0.0357668	0.98247	0.92	1.05	0.15261	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	3	21SP	G16_125	'OKLAUNION 345KV'	0.952923	0.917124	0.0357989	0.98247	0.92	1.05	0.15261	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	21WP	G16_125	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.9	1.05	0.14644	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	3	21WP	G16_125	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.92	1.05	0.14644	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	3	21WP	G16_125	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.9	1.05	0.14644	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL	3	21WP	G16_125	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.92	1.05	0.14644	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03495	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03495	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03495	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03495	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.92	1.05	0.06515	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.92	1.05	0.06515	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06682	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06682	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06682	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06682	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.9	1.05	0.28036	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.92	1.05	0.28036	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21L	G16_125	'OKLAUNION 345KV'	1.009207	0.908781	0.100426	0.95798	0.92	1.05	0.25279	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21WP	G16_125	'OKLAUNION 345KV'	1.005411	0.919559	0.0858518	0.96111	0.92	1.05	0.26749	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.9	1.05	0.20927	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.92	1.05	0.20927	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.9	1.05	0.20927	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.92	1.05	0.20927	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.9	1.05	0.08883	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.92	1.05	0.08883	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.9	1.05	0.08883	'STATELINE INTERCHANGE - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.92	1.05	0.08883	'STATELINE INTERCHANGE - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.99073	0.919197	0.071533	0.90675	0.92	1.05	0.11609	'SUNNYSIDE - TERRYD07 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.92	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.92	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.92	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.92	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.9	1.05	0.22033	'System Intact'
FDNS	06ALL	0	18G	G16_125	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.95	1.05	0.22033	'System Intact'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977732	0.822204						

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.97996	0.896559	0.0834011	0.90675	0.92	1.05	0.07372	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.9	1.05	0.07387	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.92	1.05	0.07387	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977732	0.810058	0.167674	0.8222	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977732	0.810058	0.167674	0.8222	0.92	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.981847	0.901375	0.0804722	0.90675	0.92	1.05	0.13049	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.92	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.92	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.9	1.05	0.20927	TOLK STATION FMR TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.92	1.05	0.20927	TOLK STATION FMR TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.980323	0.90143	0.0788932	0.90675	0.92	1.05	0.21939	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_125	'OKLAUNION 345KV'	0.980313	0.901231	0.0790821	0.90675	0.92	1.05	0.21939	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.06227	System Intact
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.06227	System Intact
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 230KV'	0.999107	0.920025	0.0790821	0.92003	0.95	1.05	0.06014	System Intact
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.06025	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.888072	0.111928	0.88217	0.9	1.05	0.08079	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978173	0.899788	0.0783843	0.91598	0.9	1.05	0.04093	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976707	0.895245	0.0814623	0.91598	0.9	1.05	0.27861	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976783	0.894322	0.0824615	0.91598	0.9	1.05	0.27861	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.98763	0.874154	0.113476	0.88217	0.9	1.05	0.27206	CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.891394	0.108606	0.88217	0.9	1.05	0.27206	CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.98772	0.87598	0.11174	0.88217	0.9	1.05	0.05605	CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976402	0.896065	0.0803373	0.91598	0.9	1.05	0.2904	CRAWFISH_DR 345.00 - LAWTON INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.890089	0.109911	0.88217	0.9	1.05	0.05636	CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.977074	0.897986	0.0790876	0.91598	0.9	1.05	0.20697	CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987702	0.875053	0.112649	0.88217	0.9	1.05	0.27206	CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.98753	0.873304	0.114226	0.88217	0.9	1.05	0.27206	EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.984866	0.888783	0.096083	0.8984	0.9	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.984866	0.888783	0.096083	0.8984	0.9	1.05	0.06317	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978239	0.895983	0.0822566	0.91598	0.9	1.05	0.06823	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.97696	0.893675	0.0832849	0.91598	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.97696	0.893675	0.0832849	0.91598	0.9	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.12862	Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.12862	Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.091233	0.8984	0.9	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.091233	0.8984	0.9	1.05	0.04663	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.0536	Hitchland Interchange (SEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.0536	Hitchland Interchange (SEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.0549	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04612	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04612	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.873377	0.126623	0.88217	0.9	1.05	0.04815	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.873885	0.113808	0.88217	0.9	1.05	0.27206	MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987989	0.890881	0.0971085	0.88217	0.9	1.05	0.08347	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05829	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983824	0.887861	0.0959628	0.8984	0.9	1.05	0.05667	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983657	0.890972	0.092685	0.8984	0.9	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983657	0.890972	0.092685	0.8984	0.9	1.05	0.06839	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.06227	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.876923	0.123077	0.88217	0.9	1.05	0.04175	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.977311	0.890959	0.0863523	0.91598	0.9	1.05	0.27861	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987718	0.875335	0.112383	0.88217	0.9	1.05	0.27206	ROOSEVELT COUNTY REC-PORTEALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	1	0.887851	0.112149	0.88217	0.9	1.05	0.27206	SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983793	0.889768	0.0940244	0.8984	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983793	0.889768	0.0940244	0.8984	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.977111	0.898563	0.0785478	0.91598	0.9	1.05	0.03761	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.977111	0.898563	0.0785478	0.91598	0.9	1.05	0.03761	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.2612	System Intact
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.2612	System Intact
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.27861	System Intact
FDNS	06ALL	0	21SP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.27861	System Intact
FDNS	06ALL	0	21WP	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.882171	0.105522	0.88217	0.95	1.05	0.27206	System Intact
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.98399	0.888512	0.0954778	0.8984	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983851	0.887131	0.0967205	0.8984	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'POTTER COUNTY INTERCHANGE 345KV'	0.983851	0.887131	0.0967205	0.8				

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNSLock	06ALL		2 18SP	G16_125	ROARK6 230.00 230KV'	1.020224	1.080051	0.0598267	1.02	0.9	1.05	0.04715	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	ROARK6 230.00 230KV'	1.020224	1.080051	0.0598267	1.02	0.9	1.05	0.04715	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_125	ROBERTS COUNTY TAP 69KV'	1.019254	1.056662	0.0374085	1.02375	0.9	1.05	0.04715	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.990055	0.912374	0.0776806	0.91779	0.92	1.05	0.07482	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.990055	0.912374	0.0776806	0.91779	0.92	1.05	0.07482	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	0.953607	0.873704	0.0799028	0.95684	0.9	1.05	0.08883	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	0.953607	0.873704	0.0799028	0.95684	0.92	1.05	0.08883	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 115KV'	0.989482	0.91903	0.0704518	0.94503	0.92	1.05	0.08567	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.991221	0.912006	0.0792154	0.91779	0.92	1.05	0.05605	CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.991273	0.912663	0.07861	0.91779	0.92	1.05	0.05605	G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.989353	0.912742	0.076611	0.91779	0.92	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.989352	0.912741	0.0766112	0.91779	0.92	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.988367	0.910602	0.077765	0.91779	0.92	1.05	0.05013	GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 115KV'	0.990367	0.916864	0.0735025	0.94503	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 115KV'	0.990367	0.916864	0.0735025	0.94503	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.991653	0.911222	0.0804307	0.91779	0.92	1.05	0.04612	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	0.991653	0.911222	0.0804307	0.91779	0.92	1.05	0.04612	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 115KV'	1	0.911987	0.080125	0.91779	0.92	1.05	0.04815	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	0.975588	0.910931	0.0646564	0.95684	0.92	1.05	0.08883	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 115KV'	0.974107	0.911925	0.062182	0.95684	0.92	1.05	0.08883	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 138KV'	0.973572	0.899847	0.0737244	0.98078	0.9	1.05	0.08883	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	1	0.915479	0.0845211	0.90842	0.92	1.05	0.08079	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.07482	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.07482	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.95464	0.915326	0.0393143	0.9309	0.92	1.05	0.04093	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972962	0.912699	0.060263	0.9309	0.92	1.05	0.09591	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.12685	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.964962	0.908186	0.067757	0.9309	0.92	1.05	0.04159	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	SHAMROCK 69KV'	0.967834	0.914151	0.053683	0.96076	0.92	1.05	0.09304	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.9	1.05	0.08883	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.92	1.05	0.08883	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.971364	0.905931	0.0654329	0.9309	0.92	1.05	0.08567	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.9702	0.902855	0.0673447	0.90842	0.92	1.05	0.05605	CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.954453	0.918686	0.0357667	0.9309	0.92	1.05	0.2904	CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	1	0.916379	0.0836212	0.90842	0.92	1.05	0.05636	CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04159	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04159	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.10852	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.10852	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.10852	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.10852	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.97221	0.912887	0.0593234	0.9309	0.92	1.05	0.08567	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.955257	0.910689	0.0445682	0.9309	0.92	1.05	0.06823	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.9685	0.903615	0.0648848	0.90842	0.92	1.05	0.11183	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.9685	0.903615	0.0648848	0.90842	0.92	1.05	0.11183	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_125	SHAMROCK 69KV'	0.967541	0.901347	0.0661935	0.90842	0.92	1.05	0.05013	GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 69KV'	1	0.90884	0.0911602	0.94142	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_125	SHAMROCK 69KV'	1	0.90884	0.0911602	0.94142	0.92	1.05	0.07523	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972097	0.906409	0.0656882	0.9309	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972097	0.906409	0.0656882	0.9309	0.92	1.05	0.07074	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_125	SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.25085	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.9	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.25218	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.12862	Hitchland Interchange - WALKEMEYER 734

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNSLock	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.972404	0.918616	0.0537882	0.94142	0.92	1.05	0.28036	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.9	1.05	0.08883	'STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.92	1.05	0.08883	'STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.9	1.05	0.08883	'STLIN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.92	1.05	0.08883	'STLIN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_125	'SHAMROCK 69KV'	0.961202	0.917197	0.0440053	0.94142	0.92	1.05	0.10698	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	1	0.895314	0.104686	0.88941	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.992226	0.883218	0.109008	0.88941	0.9	1.05	0.05605	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	1	0.897333	0.102667	0.88941	0.9	1.05	0.05636	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.0910406	0.90737	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.0910406	0.90737	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	1	0.880613	0.119387	0.88941	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.992454	0.898125	0.0943297	0.88941	0.9	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988603	0.896797	0.091805	0.90737	0.9	1.05	0.05667	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	1.05	0.06839	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_125	'SPNSPUR_WND7345.00 345KV'	1	0.88416	0.11584	0.88941	0.9	1.05	0.04175	'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05412	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988744	0.897451	0.0912929	0.90737	0.9	1.05	0.12873	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'STATELINE INTERCHANGE 115KV'	1.021039	1.075547	0.0545086	1.02261	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'STATELINE INTERCHANGE 230KV'	1.021124	1.069772	0.048648	1.01641	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.05397	System Intact
FDNS	06ALL	0	21L	G16_125	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.05397	System Intact
FDNS	06ALL	0	21WP	G16_125	'STATELINE INTERCHANGE 230KV'	0.999138	0.921867	0.0772707	0.92187	0.95	1.05	0.06866	System Intact
FDNSLock	06ALL	2	18SP	G16_125	'STLN-DEMARC6 230KV'	1.020763	1.077596	0.0568331	1.01717	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'STLN-DEMARC6 230KV'	1.003486	0.940168	0.0633178	0.94017	0.95	1.05	0.08108	System Intact
FDNSLock	06ALL	2	18SP	G16_125	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.9	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_125	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.92	1.05	0.04715	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'SWEETWATER 230KV'	1.005199	0.94769	0.0575091	0.94769	0.95	1.05	0.08108	System Intact
FDNS	06ALL	0	21SP	G16_125	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_125	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	1.05	0.03761	System Intact
FDNS	06ALL	0	21SP	G16_125	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	1.05	0.03761	System Intact
FDNS	06ALL	0	21L	G16_125	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	1.05	0.77674	System Intact
FDNS	06ALL	0	21L	G16_125	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	1.05	0.77674	System Intact
FDNS	06ALL	0	21WP	G16_125	'TOLK STATION 345KV'	0.998751	0.931691	0.0670596	0.93169	0.95	1.05	0.79	System Intact
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	1.05	0.0348	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	1.05	0.05333	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.06317	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.04663	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.0536	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.0549	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_125	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05829	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_125	'TUCO INTERCHANGE 345KV'	0.98007	0.87691	0.10316	0.89054	0.9	1.05	0.05667</	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.980444	0.88015	0.100294	0.89054	0.9	1.05	0.05412	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.0348	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.981517	0.880907	0.10061	0.89054	0.9	1.05	0.12873	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.05333	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_125	'WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.09982	System Intact
FDNS	06ALL		0 21L	G16_125	'WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.09982	System Intact
FDNS	06ALL		0 21WVP	G16_125	'WALKEMEYER 7345.00 345KV'	1.007796	0.942456	0.0653399	0.94246	0.95	1.05	0.12173	System Intact
FDNS	06ALL		0 18G	G16_125	'WELLINGTON 138KV'	0.974511	0.90498	0.0695304	0.98387	0.9	1.05	0.08883	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.06025	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	1	0.893351	0.106649	0.88805	0.9	1.05	0.08079	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.95668	0.872255	0.0844254	0.88972	0.9	1.05	0.04093	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.07496	'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.07496	'BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0635	'BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0635	'BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.957466	0.87909	0.0783766	0.88972	0.9	1.05	0.09591	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.12685	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.95559	0.882665	0.0792949	0.88972	0.9	1.05	0.04159	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955598	0.874507	0.0810914	0.88972	0.9	1.05	0.08567	'CHISHOLM7 345.00 - ELK CITY 230KV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.954336	0.873399	0.080937	0.88972	0.9	1.05	0.13443	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	0.989832	0.882469	0.107363	0.88805	0.9	1.05	0.05605	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955954	0.873539	0.0824149	0.88972	0.9	1.05	0.2904	'CRAWFISH DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	1	0.894915	0.105085	0.88805	0.9	1.05	0.05636	'CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956485	0.87518	0.0813048	0.88972	0.9	1.05	0.20697	'CROSSROADS 7345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956603	0.880581	0.0760213	0.88972	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956603	0.880581	0.0760213	0.88972	0.9	1.05	0.20697	'EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04159	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10852	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955246	0.877048	0.0781975	0.88972	0.9	1.05	0.08567	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956451	0.881292	0.0751584	0.88972	0.9	1.05	0.06823	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.95642	0.885802	0.0879176	0.88972	0.9	1.05	0.06823	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955979	0.884514	0.0714648	0.88972	0.9	1.05	0.03768	'GEN542962 2-IATAN UNIT #2'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955566	0.884194	0.071372	0.88972	0.9	1.05	0.06902	'GEN640011 2-GERALD GENTLEMAN STATION UNIT 2'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955134	0.874023	0.0811113	0.88972	0.9	1.05	0.13443	'GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07074	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	'XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_125	'XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.25218	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12862	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04612	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	1	0.880141	0.119859	0.88805	0.9	1.05	0.04815	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955292	0.873096	0.0821962	0.88972	0.9	1.05	0.11609	'LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WVP	G16_125	'XIT_INTG 6230.00 230KV'	0.990057	0.895858	0.0941991	0.88805	0.9	1.05	0.08347	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07054	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.06227	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.954897	0.874378	0.0805191	0.88972	0.9	1.05	0.11609	'SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.03761	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956892	0.881898	0.0749943	0.88972	0.9	1.05	0.07372	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_125	'XIT_INTG 6230.00 230KV'	0.956884	0.88173	0.0751533					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969652	0.862165	0.107487	0.87749	0.9	1.05	0.05461	'CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'BORDER 7345.00 345KV'	0.967197	0.890522	0.0766751	0.95785	0.9	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.97206	0.882626	0.0894338	0.87749	0.9	1.05	0.05723	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968558	0.870812	0.0977464	0.87749	0.9	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968879	0.872198	0.0966812	0.87749	0.9	1.05	0.04494	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.966661	0.856513	0.110148	0.87749	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.17234	System Intact
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.17234	System Intact
FDNS	06ALL	0	21SP	G16_171	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.20453	System Intact
FDNS	06ALL	0	21SP	G16_171	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.20453	System Intact
FDNS	06ALL	0	21WTP	G16_171	'BORDER 7345.00 345KV'	0.973293	0.916543	0.0567498	0.91654	0.95	1.05	0.19592	System Intact
FDNS	06ALL	0	21L	G16_171	'BORDER 7345.00 345KV'	0.969786	0.86839	0.101396	0.87749	0.9	1.05	0.03903	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @1'
FDNSLock	06ALL	2	18SP	G16_171	'BOWERS INTERCHANGE 69KV'	1.034897	1.071238	0.0363411	1.03926	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'BOWERS TAP 69KV'	1.024455	1.061259	0.0368036	1.02888	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.08786	System Intact
FDNS	06ALL	0	21SP	G16_171	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.08786	System Intact
FDNS	06ALL	0	21WTP	G16_171	'BUSHLAND INTERCHANGE 230KV'	1.008722	0.932744	0.0759785	0.93274	0.95	1.05	0.08538	System Intact
FDNS	06ALL	0	21L	G16_171	'BVCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.09168	System Intact
FDNS	06ALL	0	21L	G16_171	'BVCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.09168	System Intact
FDNS	06ALL	0	21WTP	G16_171	'BVCNTY7 345.00 345KV'	1.006863	0.937326	0.0695368	0.93733	0.95	1.05	0.11097	System Intact
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.96842	0.890848	0.0775179	0.90812	0.9	1.05	0.04399	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.969176	0.897907	0.0712687	0.90812	0.9	1.05	0.09222	'BVCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.1172	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.1172	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.1172	'BVCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967664	0.893942	0.0736985	0.90812	0.9	1.05	0.08514	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.966475	0.893047	0.0734277	0.90812	0.9	1.05	0.14027	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967829	0.892317	0.075512	0.90812	0.9	1.05	0.03003	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967369	0.896732	0.0706367	0.90812	0.9	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968277	0.899867	0.0684105	0.90812	0.9	1.05	0.07504	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968249	0.897365	0.0808841	0.90812	0.9	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967124	0.893546	0.0735774	0.90812	0.9	1.05	0.14027	'GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967324	0.892308	0.0750153	0.90812	0.9	1.05	0.12002	'LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967562	0.894086	0.073476	0.90812	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.967562	0.894086	0.073476	0.90812	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.96							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968155	0.899792	0.0683638	0.90812	0.9	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21SP	G16_171	'CHAN+TASCOS6230.00 230KV'	0.968155	0.899792	0.0683638	0.90812	0.9	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21WP	G16_171	'CHISHOLM6 230.00 230KV'	1.000288	0.948971	0.0513175	0.94897	0.95	1.05	0.07752	System Intact
FDNSLock	06ALL		2 18SP	G16_171	'COBRN CREEK3115.00 115KV'	1.025514	1.086157	0.060643	1.03258	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986452	0.894945	0.0915074	0.90018	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986452	0.894945	0.0915074	0.90018	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.97954	0.868599	0.110941	0.88811	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.97954	0.868599	0.110941	0.88811	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986024	0.894426	0.0915983	0.90018	0.9	1.05	0.21339	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.985125	0.893163	0.0919619	0.88811	0.9	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986513	0.894866	0.0916473	0.90018	0.9	1.05	0.21339	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980035	0.879063	0.100972	0.88811	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980035	0.879063	0.100972	0.88811	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.979218	0.874262	0.104955	0.88811	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980072	0.880551	0.0995212	0.88811	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980072	0.880551	0.0995212	0.88811	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9788	0.873777	0.105023	0.88811	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9788	0.873777	0.105023	0.88811	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9807	0.888114	0.0925859	0.88811	0.95	1.05	0.18527	System Intact
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.9807	0.888114	0.0925859	0.88811	0.95	1.05	0.18527	System Intact
FDNS	06ALL		0 21WP	G16_171	'CRAWFISH_DR 345.00 345KV'	0.986551	0.900183	0.0863677	0.90018	0.95	1.05	0.21339	System Intact
FDNS	06ALL		0 21L	G16_171	'CRAWFISH_DR 345.00 345KV'	0.980699	0.87833	0.102369	0.88811	0.9	1.05	0.03903	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.961158	0.926996	0.0341615	0.927	0.95	1.05	0.07809	System Intact
FDNS	06ALL		0 21SP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.961158	0.926996	0.0341615	0.927	0.95	1.05	0.07809	System Intact
FDNS	06ALL		0 21WP	G16_171	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.991095	0.92469	0.0664043	0.92469	0.95	1.05	0.07586	System Intact
FDNSLock	06ALL		2 18SP	G16_171	'DEMPSEY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'DEMPSEY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.92	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'ELK CT1 345.00 345KV'	0.987103	0.897366	0.0897368	0.90252	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'ELK CT1 345.00 345KV'	0.987103	0.897366	0.0897368	0.90252	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980336	0.871074	0.109263	0.89054	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980336	0.871074	0.109263	0.89054	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.986993	0.898431	0.0885621	0.89054	0.9	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980991	0.885339	0.0956521	0.89054	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980991	0.885339	0.0956521	0.89054	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980867	0.881641	0.0992262	0.89054	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980867	0.881641	0.0992262	0.89054	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'ELK CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'ELK CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980069	0.876909	0.10316	0.89054	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980897	0.883062	0.0978355	0.89054	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980897	0.883062	0.0978355	0.89054	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'ELK CT1 345.00 345KV'	0.980443	0.880149	0.100294	0.89054	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_17									

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.044674	1.071002	0.0263281	1.07636	0.9	1.05	0.17155	CROSSROADS 7345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.03608	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.03608	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.044405	1.066878	0.0224739	1.07636	0.9	1.05	0.06928	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.044405	1.066878	0.0224739	1.07636	0.9	1.05	0.06928	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.044444	1.066241	0.0217973	1.07636	0.9	1.05	0.06928	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.044444	1.066241	0.0217973	1.07636	0.9	1.05	0.06928	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.04416	1.070633	0.0264726	1.07636	0.9	1.05	0.09812	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.038936	1.061424	0.0224878	1.07636	0.9	1.05	0.04435	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.038936	1.061424	0.0224878	1.07636	0.9	1.05	0.04435	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.039113	1.066183	0.02707	1.07636	0.9	1.05	0.03916	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.039113	1.066183	0.02707	1.07636	0.9	1.05	0.03916	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.035187	1.060975	0.0257888	1.07636	0.9	1.05	0.04502	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		2 21L	G16_171	'EVA REGULATOR 69KV'	1.035187	1.060975	0.0257888	1.07636	0.9	1.05	0.04502	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21WP	G16_171	'EVA REGULATOR 69KV'	1	0.891847	0.108153	0.90099	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.99923	0.893822	0.105408	0.90694	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.99923	0.893822	0.105408	0.90694	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.996877	0.891114	0.105763	0.90694	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.99961	0.898925	0.100686	0.90694	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.99961	0.898925	0.100686	0.90694	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'FREWHELCOL17345.00 345KV'	0.999407	0.898982	0.100426	0.90694	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 2'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.003684	0.898703	0.104981	0.91176	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.003684	0.898703	0.104981	0.91176	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.001334	0.896008	0.105326	0.91176	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999223	0.893788	0.105435	0.90691	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999223	0.893788	0.105435	0.90691	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.997976	0.894016	0.103996	0.90691	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.997976	0.894016	0.103996	0.90691	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14 345.00 345KV'	0.999401	0.898948	0.100453	0.90691	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.002085	0.896928	0.105157	0.91001	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.002085	0.896928	0.105157	0.91001	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9			

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.97206	0.882626	0.0894338	0.87749	0.9	1.05	0.05723	'G15063_T 345.00 - WOODRIDGE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968558	0.870812	0.0977464	0.87749	0.9	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968879	0.872198	0.0966812	0.87749	0.9	1.05	0.04494	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.966661	0.85613	0.110148	0.87749	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.969206	0.869002	0.100204	0.87749	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.968237	0.862759	0.105478	0.87749	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'G1149G1504 345.00 345KV'	0.969786	0.86839	0.101396	0.87749	0.9	1.05	0.03903	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21W	G16_171	'G16-045-SUB1345.00 345KV'	1	1.264222	0.264222	1.25588	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'G16-045-SUB2345.00 345KV'	1	1.2884	0.2884	1.27969	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GEN-2016-057345.00 345KV'	1	1.276997	0.276997	1.26837	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GEN-2016-057345.00 345KV'	1	1.324082	0.324082	1.31513	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987726	0.889917	0.0978087	0.89794	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987726	0.889917	0.0978087	0.89794	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987686	0.8893	0.098386	0.89793	0.9	1.05	0.06387	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987627	0.890547	0.0970804	0.89794	0.9	1.05	0.05586	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987721	0.890309	0.097412	0.89793	0.9	1.05	0.06387	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987658	0.887568	0.10009	0.89793	0.9	1.05	0.06387	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.986245	0.893592	0.0926524	0.89794	0.9	1.05	0.11576	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.986045	0.890344	0.0957015	0.89794	0.9	1.05	0.0513	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	1	0.889226	0.110774	0.89794	0.9	1.05	0.05009	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987716	0.887688	0.100028	0.89793	0.9	1.05	0.06387	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.98772	0.890597	0.0971233	0.89793	0.9	1.05	0.06387	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.04973	System Intact
FDNS	06ALL		0 21L	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.04973	System Intact
FDNS	06ALL		0 21W	G16_171	'GRAPEVINE INTERCHANGE 230KV'	0.987715	0.897935	0.0897798	0.89794	0.95	1.05	0.06387	System Intact
FDNSLock	06ALL		2 18SP	G16_171	'Graves Sub 115KV'	1.02286	1.073505	0.0506449	1.02368	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'GRAVES SUB 69KV'	1.019223	1.076678	0.0574549	1.02628	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'GREENBELT REC-KELLERVILLE 69KV'	1.022793	1.059641	0.0368478	1.02722	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'GREENBELT REC-WHEELER 69KV'	1.018432	1.075929	0.0574974	1.02549	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05675	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05675	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990685	0.878241	0.112444	0.89231	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990685	0.878241	0.112444	0.89231	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.9924	0.899665	0.092734	0.906	0.9	1.05	0.0664	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.991623	0.897496	0.0941273	0.906	0.9	1.05	0.0664	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.87993	0.109949	0.89231	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.87993	0.109949	0.89231	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	1	0.898257	0.101743	0.906	0.9	1.05	0.05009	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21W	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.899397	0.0930243	0.906	0.9	1.05	0.0664	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.989009	0.876968	0.112041	0.89231	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990952	0.886007	0.104945	0.89231	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990952	0.886007	0.104945	0.89231	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.991239	0.884106	0.107134	0.89231	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.991							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.997279	0.948785	0.0484942	0.94879	0.95	1.05	0.07044	System Intact
FDNS	06ALL	0	21WP	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.906	0.0864221	0.906	0.95	1.05	0.0664	System Intact
FDNS	06ALL	0	21L	G16_171	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.883832	0.107056	0.89231	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999223	0.893788	0.105435	0.90691	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999223	0.893788	0.105435	0.90691	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999605	0.898891	0.100714	0.90691	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.9994	0.906907	0.0924932	0.90691	0.95	1.05	0.17796	System Intact
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.9994	0.906907	0.0924932	0.90691	0.95	1.05	0.17796	System Intact
FDNS	06ALL	0	21WP	G16_171	'Hitchland Interchange 345KV'	1.002146	0.922169	0.0799766	0.92217	0.95	1.05	0.21102	System Intact
FDNS	06ALL	0	21L	G16_171	'Hitchland Interchange 345KV'	0.999401	0.898948	0.100453	0.90691	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	18G	G16_171	'HOLLIS 138KV'	0.976893	0.911222	0.0656702	0.9869	0.92	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'HOLLIS TAP 138KV'	0.976866	0.911279	0.0655869	0.98686	0.92	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'HOPI SUB 115KV'	1.023085	1.051076	0.0279913	1.04506	0.9	1.05	0.13735	'HOBBS - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'HOPI SUB 115KV'	1.023085	1.051076	0.0279913	1.04506	0.9	1.05	0.13735	'HOBBS - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.9	1.05	0.07685	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.92	1.05	0.07685	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.9	1.05	0.07685	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.92	1.05	0.07685	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'KINGSMILL INTERCHANGE 69KV'	1.029913	1.052916	0.0230038	1.03322	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'LAWTON EASTSIDE 345KV'	0.988849	0.913434	0.0754145	0.97952	0.92	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'LAWTON EASTSIDE 345KV'	0.989403	0.914396	0.0750066	0.97531	0.92	1.05	0.09812	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	3	21L	G16_171	'LAWTON EASTSIDE 345KV'	0.989431	0.918226	0.0712057	0.97728	0.92	1.05	0.09821	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.19378	System Intact
FDNS	06ALL	0	21L	G16_171	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.19378	System Intact
FDNSLock	06ALL	2	18SP	G16_171	'LYONS SUB 69KV'	1.014907	1.052071	0.0371634	1.01937	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'LYONS TAP 69KV'	1.02031	1.057277	0.0396972	1.02475	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'MAGIC CITY 69KV'	1.019556	1.073698	0.057742	1.02305	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'MCCULLOUGH SUB 69KV'	1.029286	1.058355	0.0290693	1.03294	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.9	1.05	0.09852	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.92	1.05	0.09852	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.9	1.05	0.09852	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.92	1.05	0.09852	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.9	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.92	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	2	21SP	G16_171	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.92	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984391	0.88238	0.102011	0.88973	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984391	0.88238	0.102011	0.88973	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	1	0.89583	0.10417	0.88973	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978709	0.889495	0.0892145	0.90209	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978709	0.889495	0.0892145	0.90209	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984361	0.88184	0.10252	0.88973	0.9	1.05	0.05791	CARLISLE INTERCHANGE 115KV SWITCHED SHUNT
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	1	0.899523	0.100477	0.88973	0.9	1.05	0.05791	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984429	0.883546	0.100883	0.88973	0.9	1.05	0.05586	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	1	0.897376	0.102624	0.88973	0.9	1.05	0.21339	'CRAWFISH DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.9844	0.882784	0.101617	0.88973	0.9	1.05	0.05791	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984013	0.880494	0.10352	0.88973	0.9	1.05	0.05791	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.884821	0.0836055	0.90209	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.884821	0.0836055	0.90209	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.979439	0.894086	0.0853535	0.90209	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978672	0.891548	0.0871245	0.90209	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.958425	0.898039	0.0603866	0.922	1.05	1.05	0.06134	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.969552	0.897217	0.0723359	0.922	0.9	1.05	0.06134	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.979023	0.896141	0.0828824	0.90209	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.979023	0.896141	0.0828824	0.90209	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.981309	0.89794	0.0833692	0.922	0.9	1.05	0.06134	'OKLAUN HV0C7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984412	0.88307	0.101342	0.88973	0.9	1.05	0.05791	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	1	0.895688	0.104312	0.88973	0.9	1.05	0.05791	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.979364	0.895636	0.0837274	0.90209	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.979364	0.895636	0.0837274	0.90209	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.902086	0.0768393	0.90209	0.95	1.05	0.04774	'System Intact'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.902086	0.0768393	0.90209	0.95	1.05	0.04774	'System Intact'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0624221	0.92201	0.95	1.05	0.06134	'System Intact'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0624221	0.92201	0.95	1.05	0.06134	'System Intact'
FDNS	06ALL		0 21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984394	0.889732	0.0946618	0.88973	0.95	1.05	0.05791	'System Intact'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.98052	0.896604	0.083916	0.92201	0.9	1.05	0.07618	'TOLK STATION (ABBXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.98052	0.896604	0.083916	0.92201	0.9	1.05	0.07618	'TOLK STATION (ABBXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.89435	0.0845755	0.90209	0.9	1.05	0.03903	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21WP	G16_171	'MOORE COUNTY INTERCHANGE 230KV'	0.984493	0.896089	0.0884044	0.88973	0.9	1.05	0.05791	'TOLK STATION TMR TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_171	'NEWHART 230 230KV'	0.958234	0.899124	0.0591093	0.93684	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'NEWHART 230 230KV'	0.958234	0.899124	0.0591093	0.93684	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'NEWHART 230 230KV'	0.978922	0.936841	0.0420805	0.93684	0.95	1.05	0.07321	'System Intact'
FDNS	06ALL		0 21SP	G16_171	'NEWHART 230 230KV'	0.978922	0.936841	0.0420805	0.93684	0.95	1.05	0.07321	'System Intact'
FDNS	06ALL		0 21WP	G16_171	'NEWHART 230 230KV'	1.00408	0.937379	0.0667012	0.93738	0.95	1.05	0.07093	'System Intact'
FDNS	06ALL		2 18SP	G16_171	'NEXTERA 230KV'	1.019908	1.081619	0.0617117	1.01831	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		2 18SP	G16_171	'NEXTERA 230KV'	1.019908	1.081619	0.0617117	1.01831	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000531	0.897523	0.103008	0.9106	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000531	0.897523	0.103008	0.9106	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000878	0.893891	0.106987	0.9106	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000878	0.893891	0.106987	0.9106	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	0.999577	0.89775	0.101827	0.9106	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	0.999577	0.89775	0.101827	0.9106	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000096	0.898488	0.101608	0.9106	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	1.000096	0.898488	0.101608	0.9106	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	0.998723	0.894825	0.103898	0.9106	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999252	0.893829	0.105423	0.90695	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999252	0.893829	0.105423	0.90695	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.996893	0.891121	0.105771	0.90695	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999633	0.898931	0.100702	0.90695	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999633	0.898931	0.100702	0.90695	0.9	1.05	0.05755	'SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'NOVUS1 7345.00 345KV'	0.999443	0.898988	0.100441	0.90695	0.9	1.05	0.03903	'TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.9	1.05	0.09852	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.92	1.05	0.09852	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.9	1.05	0.09852	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.92	1.05	0.09852	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.92	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_171	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.92	1.05	0.03968	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OCHILTREE 230KV'	0.981338	0.888149	0.0931889	0.89422	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OCHILTREE 230KV'	0.981338	0.888149	0.0931889	0.89422	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_171	'OCHILTREE 230KV'	0.979564	0.896802	0.0827622	0.93289	0.9	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.04672	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.04672	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.05371	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.05371	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OCHILTREE 230KV'	1	0.886255	0.113745	0.89422	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.98985	0.87741	0.11244	0.88854	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.98985	0.87741	0.11244	0.88854	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.988305	0.873763	0.114542	0.88854	0.9	1.05	0.05512	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.989964	0.882228	0.107736	0.88854	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.989964	0.882228	0.107736	0.88854	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.988998	0.875227	0.113771	0.88854	0.9	1.05	0.05287	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.988998	0.875227	0.113771	0.88854	0.9	1.05	0.05287	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.990281	0.880413	0.109868	0.88854	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.990281	0.880413	0.109868	0.88854	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OCHILTREE 230KV'	0.989866	0.879984	0.109882	0.88854	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.07594	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.07594	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.92	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.92	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979563	0.818514	0.161049	0.82662	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979563	0.818514	0.161049	0.82662	0.92	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979563	0.818514	0.161049	0.82662	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.9	1.05	0.08063	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.92	1.05	0.08063	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.9	1.05	0.05137	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.9	1.05	0.05137	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.92	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.92	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980537	0.900088	0.0804487	0.90693	0.92	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980537	0.900088	0.0804487	0.90693	0.92	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.9	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.9	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.9865	0.909737	0.0767626	0.92105	0.92	1.05	0.04598	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.9	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.92	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.9	1.05	0.13262	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.92	1.05	0.13262	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1.002267	0.907976	0.0942918	0.9613	0.92	1.05	0.15058	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.9	1.05	0.13279	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.92	1.05	0.13279	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1.002849	0.912851	0.0899981	0.9636	0.92	1.05	0.15069	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.9	1.05	0.1401	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.92	1.05	0.1401	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.988869	0.915819	0.0730501	0.92105	0.92	1.05	0.08418	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236				

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98716	0.904949	0.0822111	0.92105	0.92	1.05	0.09849	'BVRcnty77 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978402	0.889189	0.0892129	0.90693	0.9	1.05	0.09222	'BVRcnty77 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978402	0.889189	0.0892129	0.90693	0.92	1.05	0.09222	'BVRcnty77 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.12327	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.12327	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.12327	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.12327	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.1172	'BVRcnty77 345.00 - Hitcland Interchange 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97778	0.801845	0.175935	0.82236	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97778	0.801845	0.175935	0.82236	0.92	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97778	0.801845	0.175935	0.82236	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97778	0.801845	0.175935	0.82236	0.92	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.9873	0.910261	0.077039	0.92105	0.92	1.05	0.04267	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.9	1.05	0.04163	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.92	1.05	0.04163	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.9	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.92	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.9	1.05	0.09379	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.92	1.05	0.09379	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.9	1.05	0.08514	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.92	1.05	0.08514	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.9	1.05	0.04792	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.92	1.05	0.04792	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.988	0.912526	0.0754739	0.90693	0.92	1.05	0.14027	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976369	0.814477	0.161892	0.82236	0.9	1.05	0.03583	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976369	0.814477	0.161892	0.82236	0.92	1.05	0.03583	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97879	0.817345	0.161444	0.82662	0.9	1.05	0.05586	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21WVP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97879	0.817345	0.161444	0.82662	0.92	1.05	0.05586	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.004016	0.909447	0.0945695	0.95817	0.92	1.05	0.1251	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	31L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.003876	0.916102	0.0877743	0.96159	0.92	1.05	0.12526	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.984929	0.914829	0.0701002	0.90693	0.92	1.05	0.03003	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980148	0.828259	0.151889	0.82236	0.9	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980148	0.828259	0.151889	0.82236	0.92	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WVP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.836797	0.163203	0.82662	0.9	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WVP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.836797	0.163203	0.82662	0.92	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989075	0.915082	0.0739931	0.92105	0.9	1.05	0.08995	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989075	0.915082	0.0739931	0.92105	0.92	1.05	0.08995	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.92	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.92	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	0.92	1.05	0.04267	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	0.92	1.05	0.04267	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - Hitcland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.9	1.05	0.11536	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.92	1.05	0.11536	'FIN

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980726	0.829473	0.151252	0.82236	0.92	1.05	0.05723	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.9	1.05	0.03583	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.92	1.05	0.03583	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.9	1.05	0.05586	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.92	1.05	0.05586	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.92	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.92	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978847	0.886634	0.0922134	0.92105	0.9	1.05	0.09379	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978847	0.886634	0.0922134	0.92105	0.92	1.05	0.09379	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973358	0.877753	0.0956051	0.90693	0.9	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973358	0.877753	0.0956051	0.90693	0.92	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975469	0.810806	0.164663	0.82236	0.9	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975469	0.810806	0.164663	0.82236	0.92	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.832587	0.167413	0.82662	0.9	1.05	0.0513	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.832587	0.167413	0.82662	0.92	1.05	0.0513	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.983732	0.912099	0.0716323	0.92105	0.92	1.05	0.07018	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975507	0.893805	0.0817016	0.90693	0.9	1.05	0.07504	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975507	0.893805	0.0817016	0.90693	0.92	1.05	0.07504	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973708	0.843787	0.129921	0.90693	0.9	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973708	0.843787	0.129921	0.90693	0.92	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.007264	0.914312	0.0929524	0.95817	0.92	1.05	0.09812	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.007696	0.919528	0.0881681	0.96159	0.92	1.05	0.09821	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97829	0.821196	0.157095	0.82662	0.9	1.05	0.11576	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97829	0.821196	0.157095	0.82662	0.92	1.05	0.11576	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977538	0.82082	0.156718	0.82662	0.9	1.05	0.11576	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977538	0.82082	0.156718	0.82662	0.92	1.05	0.11576	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977537	0.820819	0.156718	0.82662	0.9	1.05	0.11576	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977537	0.820819	0.156718	0.82662	0.92	1.05	0.11576	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977302	0.819764	0.157538	0.82662	0.9	1.05	0.11576	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977302	0.819764	0.157538	0.82662	0.92	1.05	0.11576	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975394	0.813797	0.161597	0.82662	0.9	1.05	0.0513	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975394	0.813797	0.161597	0.82662	0.92	1.05	0.0513	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.985011	0.912126	0.0728853	0.90693	0.92	1.05	0.10446	'GEN531447 1-HOLCOMB GENERATOR'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976606	0.814764	0.161842	0.82236	0.9	1.05	0.04494	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976606	0.814764	0.161842	0.82236	0.92	1.05	0.04494	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.876869	0.123131	0.92105	0.9	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.876869	0.123131	0.92105	0.92	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.876869	0.123131	0.92105	0.9	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.876869	0.123131	0.92105	0.92	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.890695	0.109305	0.92105	0.9	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.890695	0.109305	0.92105	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.890695	0.109305	0.92105	0.9	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.890695	0.109305	0.92105	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987879	0.906545	0.0813338	0.92105	0.92	1.05	0.07078	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987879	0.906545	0.0813338	0.92105	0.9	1.05	0.07078	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978717	0.882379	0.0963377	0.90693	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978717	0.882379	0.0963377	0.90693	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978717	0.882379	0.0963377	0.90693	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978717	0.882379	0.0963377	0.90693	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.006676	0.905008	0.101668	0.95817	0.92	1.05	0.13547	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.006676	0.905008	0.101668	0.95817	0.9	1.05	0.13547	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.006209	0.910131	0.096078	0.96159	0.92	1.05	0.13779	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.006209	0.910131	0.096078	0.96159	0.9	1.05	0.13779	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978096	0.874518	0.103579	0				

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06578	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06578	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06578	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06578	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.9	1.05	0.04352	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.92	1.05	0.04352	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.9	1.05	0.04352	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.92	1.05	0.04352	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.9	1.05	0.04287	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.92	1.05	0.04287	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.9	1.05	0.04287	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.92	1.05	0.04287	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.92	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.92	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.819516	0.180484	0.82662	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.819516	0.180484	0.82662	0.92	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981753	0.901686	0.0800664	0.90693	0.9	1.05	0.04893	JONES STATION - TUCCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981753	0.901686	0.0800664	0.90693	0.92	1.05	0.04893	JONES STATION - TUCCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979503	0.835244	0.144259	0.82662	0.9	1.05	0.08239	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979503	0.835244	0.144259	0.82662	0.92	1.05	0.08239	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978107	0.883386	0.0947209	0.92105	0.9	1.05	0.10563	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.978107	0.883386	0.0947209	0.92105	0.92	1.05	0.10563	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979272	0.897923	0.0813496	0.90693	0.9	1.05	0.07162	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979272	0.897923	0.0813496	0.90693	0.92	1.05	0.07162	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979276	0.897924	0.0813521	0.90693	0.9	1.05	0.07157	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979276	0.897924	0.0813521	0.90693	0.92	1.05	0.07157	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989081	0.915814	0.0732667	0.92105	0.92	1.05	0.06357	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989081	0.915814	0.0732667	0.92105	0.9	1.05	0.06357	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.92	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.92	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980152	0.900762	0.0793899	0.90693	0.92	1.05	0.0676	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980152	0.900762	0.0793899	0.90693	0.9	1.05	0.0676	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.988977	0.915872	0.0731052	0.92105	0.92	1.05	0.06366	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.974052	0.793744	0.180308	0.82236	0.9	1.05	0.05512	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.974052	0.793744	0.180308	0.82236	0.92	1.05	0.05512	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979655	0.898747	0.0809081	0.90693	0.9	1.05	0.06649	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979655	0.898747	0.0809081	0.90693	0.92	1.05	0.06649	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987523	0.907259	0.0802643	0.92105	0.92	1.05	0.06214	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.987523	0.907259	0.0802643	0.92105	0.9	1.05	0.06214	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976871	0.815834	0.161037	0.82236	0.9	1.05	0.12164	NEEDMORE 230.00 - TOLK STATION WEST 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.976871	0.815834	0.161037	0.82236	0.92	1.05	0.12164	NEEDMORE 230.00 - TOLK STATION WEST 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977078	0.810603	0.166475	0.82236	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977078	0.810603	0.166475	0.82236	0.92	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977078	0.810603	0.166475	0.82236	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977078	0.810603	0.166475	0.82236	0.92	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979135	0.894492	0.084643	0.90693	0.9	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979135	0.894492	0.084643	0.90693	0.92	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979135	0.894492	0.084643	0.90693	0.9	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979135	0.894492	0.084643	0.90693	0.92	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989144	0.912432	0.0767128	0.92105	0.92	1.05	0.0826	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.989144	0.912432	0.0767128	0.92105	0.9	1.05	0.0826	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.819847	0.180153	0.82662	0.9	1.05	0.05832	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1	0.819847	0.180153</					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977849	0.843276	0.134573	0.92105	0.9	1.05	0.20781	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977849	0.843276	0.134573	0.92105	0.92	1.05	0.20781	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	1.009382	0.908955	0.100427	0.95817	0.92	1.05	0.1799	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_171	'OKLAUN HVDC7345.00 345KV'	1.005603	0.919735	0.0858682	0.9613	0.92	1.05	0.1946	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.875814	0.104381	0.92105	0.9	1.05	0.09048	STALINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980195	0.875814	0.104381	0.92105	0.92	1.05	0.09048	STALINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980171	0.875531	0.10464	0.92105	0.9	1.05	0.09048	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980171	0.875531	0.10464	0.92105	0.92	1.05	0.09048	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.99092	0.919373	0.0715467	0.90693	0.92	1.05	0.12002	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975713	0.801221	0.174492	0.82236	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975713	0.801221	0.174492	0.82236	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975713	0.801221	0.174492	0.82236	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.975713	0.801221	0.174492	0.82236	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97771	0.888777	0.0889333	0.90693	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97771	0.888777	0.0889333	0.90693	0.92	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97771	0.888777	0.0889333	0.90693	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.97771	0.888777	0.0889333	0.90693	0.92	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.983407	0.893025	0.0903822	0.92105	0.9	1.05	0.10563	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUN HVDC7345.00 345KV'	0.983407	0.893025	0.0903822	0.92105	0.92	1.05	0.10563	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980147	0.89673	0.083417	0.90693	0.9	1.05	0.07153	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980147	0.89673	0.083417	0.90693	0.92	1.05	0.07153	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.9	1.05	0.07167	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.92	1.05	0.07167	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.92	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977901	0.810213	0.167688	0.82236	0.92	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUN HVDC7345.00 345KV'	0.977901	0.810213	0.167688	0.82236	0.92	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.982034	0.901547	0.0804876	0.90693	0.92	1.05	0.0408	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.92	1.05	0.07594	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.92	1.05	0.07594	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.9	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.92	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.92	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979376	0.818358	0.161018	0.82646	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979376	0.818358	0.161018	0.82646	0.92	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979376	0.818358	0.161018	0.82646	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	1	0.834104	0.165896	0.82646	0.9	1.05	0.08063	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	1	0.834104	0.165896	0.82646	0.92	1.05	0.08063	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.92	1.05	0.05137	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.92	1.05	0.05137	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.05536	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.06701	BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.92	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.92	1.05	0.07109	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.0612	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.986311	0.909563	0.076748	0.92088	0.92	1.05	0.04598	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.9	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.92	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.9	1.05	0.13262	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.92	1.05	0.13262	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		3 21L	G16_171	'OKLAUNION 345KV'	1.001238	0.898356	0.102881	0.9614	0.92	1.05	0.13279	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21WP	G16_171	'OKLAUNION 345KV'	1.002657	0.912676	0.0899807	0.96317	0.92	1.05	0.15069	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.9	1.05	0.1401	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.92	1.05	0.1401	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.991068	0.915633	0.0754344	0.92088	0.92	1.05	0.22359	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.991068	0.915611	0.0754568	0.92088	0.92	1.05	0.22359	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.9	1.05	0.23291	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.92	1.05	0.23291	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.9	1.05	0.23291	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.92	1.05	0.23291	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.92	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.92	1.05	0.03133	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08418	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05675	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05675	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08418	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05675	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05675	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92	1.05	0.09963	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92	1.05	0.09963	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.9	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.92	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.9	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.92	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.92	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.92	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.9	1.05	0.23291	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.92	1.05	0.23291	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNSLock	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.9	1.05	0.23291	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNSLock	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.92	1.05	0.23291	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.986971	0.904776	0.0821953	0.92088	0.92	1.05	0.09849	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978215	0.889019	0.0891958	0.90675	0.9	1.05	0.09222	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978215	0.889019	0.0891958	0.90675	0.92	1.05	0.09222	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12327	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12327	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12327	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.989388	0.915096	0.0742922	0.92088	0.92	1.05	0.12327	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.1172	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.977611	0.801691	0.17592	0.8222	0.9	1.05	0.05461	CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.977611	0.801691	0.17592	0.8222	0.92	1.05	0.05461	CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.977611	0.801691	0.17592	0.8222	0.9	1.05	0.05461	CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.9	1.05	0.22279	CARLSLE INTERCHANGE 115KV SWITCHED SHUNT
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.92	1.05	0.22279	CARLSLE INTERCHANGE 115KV SWITCHED SHUNT
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.987111	0.910087	0.0770242	0.92088	0.92	1.05	0.04267	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978221	0.89366	0.0845613	0.90675	0.9	1.05	0.04163	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978221	0.89366	0.0845613	0.90675	0.92	1.05	0.04163	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.9	1.05	0.09048	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.92	1.05	0.09048	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.9	1.05	0.09379	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.92	1.05	0.09379	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.9	1.05	0.08514	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.92	1.05	0.08514	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.9	1.05	0.04792	CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.92	1.05	0.04792	CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.987811	0.912352	0.0754595	0.90675	0.92	1.05	0.14027	CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	1	0.836506	0.163494	0.826				

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.984741	0.914654	0.070087	0.90675	0.92	1.05	0.03003	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.979978	0.8281	0.151878	0.8222	0.9	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.979978	0.8281	0.151878	0.8222	0.92	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.9	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.92	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.9	1.05	0.22279	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.92	1.05	0.22279	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.988886	0.914907	0.073979	0.92088	0.92	1.05	0.08995	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.988886	0.914907	0.073979	0.92088	0.92	1.05	0.08995	'DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.92	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.92	1.05	0.05298	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.9	1.05	0.22279	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.92	1.05	0.22279	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04267	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04267	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.11536	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.11536	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.11536	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.9	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.98017	0.82876	0.15141	0.8222	0.9	1.05	0.05723	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.98017	0.82876	0.15141	0.8222	0.92	1.05	0.05723	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.980556	0.829315	0.151241	0.8222	0.9	1.05	0.05723	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.980556	0.829315	0.151241	0.8222	0.92	1.05	0.05723	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.97636	0.814802	0.161557	0.8222	0.9	1.05	0.03583	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.97636	0.814802	0.161557	0.8222	0.92	1.05	0.03583	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.978702	0.819989	0.158713	0.82646	0.9	1.05	0.05586	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.978702	0.819989	0.158713	0.82646	0.92	1.05	0.05586	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975396	0.797374	0.178021	0.8222	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975396	0.797374	0.178021	0.8222	0.92	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975396	0.797374	0.178021	0.8222	0.9	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975396	0.797374	0.178021	0.8222	0.92	1.05	0.05536	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.97866	0.886465	0.0921957	0.92088	0.9	1.05	0.09379	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.97866	0.886465	0.0921957	0.92088	0.92	1.05	0.09379	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.973172	0.877585	0.0955868	0.90675	0.9	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.973172	0.877585	0.0955868	0.90675	0.92	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975301	0.810651	0.16465	0.8222	0.9	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975301	0.810651	0.16465	0.8222	0.92	1.05	0.05137	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.832428	0.167572	0.82646	0.9	1.05	0.0513	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.832428	0.167572	0.82646	0.92	1.05	0.0513	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.983544	0.911925	0.0716185	0.92088	0.92	1.05	0.07018	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.97532	0.893634	0.081686	0.90675	0.9	1.05	0.07504	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.97532	0.893634	0.081686	0.90675	0.92	1.05	0.07504	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.973522	0.843626	0.129896	0.90675	0.9	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.973522	0.843626	0.129896	0.90675	0.92	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	1.00709	0.914137	0.092529	0.95798	0.92	1.05	0.09812	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	1.007522	0.919352	0.0881696	0.9614	0.92	1.05	0.09821	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.978103	0.821039	0.157065	0.82646	0.9	1.05	0.11576	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.978103	0.821039	0.157065	0.82646	0.92	1.05	0.11576	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.977351	0.820663	0.156688	0.82646	0.9	1.05	0.11576	'GEN515223 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.977351	0.820663	0.156688	0.82646	0.92	1.05	0.11576	'GEN515223 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.97735	0.820662	0.156688	0.82646	0.9	1.05	0.11576	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.97735	0.820662	0.156688	0.82646	0.92	1.05	0.11576	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.977115	0.819607	0.157508	0.82646	0.9	1.05	0.11576	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.977115	0.819607	0.157508	0.82646	0.92	1.05	0.11576	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.975208	0.813641	0.161567	0.82646	0.9	1.05	0.0513	'GEN520947 1-HUGO1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.975208	0.813641	0.161567					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.876701	0.123299	0.92088	0.9	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.876701	0.123299	0.92088	0.92	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.876701	0.123299	0.92088	0.9	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.876701	0.123299	0.92088	0.92	1.05	0.07448	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.890525	0.109475	0.92088	0.9	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.890525	0.109475	0.92088	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.890525	0.109475	0.92088	0.9	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'		0.890525	0.109475	0.92088	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.98769	0.906372	0.0813183	0.92088	0.92	1.05	0.07078	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.98769	0.906372	0.0813183	0.92088	0.92	1.05	0.07078	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	1.006502	0.904835	0.101667	0.95798	0.92	1.05	0.13547	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	1.006502	0.904835	0.101667	0.95798	0.92	1.05	0.13547	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUNION 345KV'	1.006035	0.909957	0.096078	0.9614	0.92	1.05	0.13779	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_171	'OKLAUNION 345KV'	1.006035	0.909957	0.096078	0.9614	0.92	1.05	0.13779	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.92	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.9	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.92	1.05	0.04672	'Hitchland Interchange (H T80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.92	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.975049	0.802397	0.172651	0.8222	0.92	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.9	1.05	0.06578	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.92	1.05	0.06578	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.9	1.05	0.06578	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.92	1.05	0.06578	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.833947	0.166053	0.82646	0.82646	0.9	1.05	0.04352	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.833947	0.166053	0.82646	0.82646	0.92	1.05	0.04352	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.833947	0.166053	0.82646	0.82646	0.9	1.05	0.04352	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.833947	0.166053	0.82646	0.82646	0.92	1.05	0.04352	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.04287	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.04287	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.04287	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.04287	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.819359	0.180641	0.82646	0.82646	0.9	1.05	0.05009	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.819359	0.180641	0.82646	0.82646	0.92	1.05	0.05009	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981565	0.901514	0.0800511	0.90675	0.9	1.05	0.04893	'JONES STATION - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981565	0.901514	0.0800511	0.90675	0.92	1.05	0.04893	'JONES STATION - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.9	1.05	0.22279	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.92	1.05	0.22279	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.9	1.05	0.08239	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.92	1.05	0.08239	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.97792	0.883217	0.0947028	0.92088	0.9	1.05	0.10563	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.92	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.92	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.92	1.05	0.06676	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.92	1.05	0.06676	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.988788	0.915697	0.0730912	0.92088	0.92	1.05	0.06366	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.92	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.9	1.05	0.06649	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.92	1.05	0.06649	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.92	1.05	0.06214	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.92	1.05	0.06214	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.98162	0.900538	0.081082	0.90675	0.92	1.05	0.23291	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.981681	0.900067	0.081614	0.90675	0.92	1.05	0.23291	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976702	0.815678	0.161024	0.8222	0.9	1.05	0.12164	'NEEDMORE 230.00 - TOLK STATION WEST 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976702	0.815678	0.161024	0.8222	0.92	1.05	0.12164	'NEEDMORE 230.00 - TOLK STATION WEST 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.92	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.976909	0.810448	0.166461	0.8222	0.92	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.92	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.9	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.978948	0.894321	0.0846269	0.90675	0.92	1.05	0.07321	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.92	1.05	0.0826	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.92	1.05	0.0826	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.92	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.92	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	1	0.81969	0.18031	0.82646	0.9	1.05	0.05832	'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	1	0.81969	0.18031	0.82646	0.92	1.05	0.05832	'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.946178	0.889597	0.0565816	0.95614	0.9	1.05	0.22988	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.946178	0.889597	0.0565816	0.95614	0.92	1.05	0.22988	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.946013	0.885498	0.0605144	0.95614	0.9	1.05	0.22988	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 17WP	G16_171	'OKLAUNION 345KV'	0.946013	0.885498	0.0605144	0.95614	0.92	1.05	0.22988	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.924076	0.840754	0.0833216	0.92088	0.9	1.05	0.22359	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.924076	0.840754	0.0833216	0.92088	0.92	1.05	0.22359	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.9	1.05	0.22359	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.92	1.05	0.22359	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.9	1.05	0.2224	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.92	1.05	0.2224	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.9	1.05	0.2224	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 18SP	G16_171	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.92	1.05	0.2224	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.916689	0.814681	0.102008	0.90675	0.9	1.05	0.23291	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_171	'OKLAUNION 345KV'	0.916689	0.814681	0.102008	0.90675	0.92	1.05	0.23291	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 18G	G16_171	'OKLAUNION 345KV'	0.958182	0.918899	0.0392824	0.98544	0.92	1.05	0.16422	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 18G	G16_171	'OKLAUNION 345KV'	0.958182	0.918899	0.0392824	0.98544	0.92	1.05	0.16422	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	0.956337	0.88633	0.0700077	0.95798	0.9	1.05	0.13535	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21L	G16_171	'OKLAUNION 345KV'	0.956337	0.88633	0.0700077	0.95798	0.92	1.05	0.13535	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21SP	G16_171	'OKLAUNION 345KV'	0.952946	0.916513	0.0364331	0.98214	0.92	1.05	0.16203	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21SP	G16_171	'OKLAUNION 345KV'	0.952947	0.916475	0.0364715	0.98214	0.92	1.05	0.16203	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21WP	G16_171	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.9	1.05	0.15583	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21WP	G16_171	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.92	1.05	0.15583	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21WP	G16_171	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.9	1.05	0.15583	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21WP	G16_171	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.92	1.05	0.15583	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 18G	G16_171	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.16437	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 18G	G16_171	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.16437	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21L	G16_171	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.9	1.05	0.13553	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21L	G16_171	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.92	1.05	0.13553	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21SP	G16_171	'OKLAUNION 345KV'	0.952924	0.917157	0.0357668	0.98247	0.92	1.05	0.16214	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21SP	G16_171	'OKLAUNION 345KV'	0.952923	0.917124	0.0357989	0.98247	0.9	1.05	0.16214	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21WP	G16_171	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.9	1.05	0.15597	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21WP	G16_171	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.92	1.05	0.15597	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21WP	G16_171	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.9	1.05	0.15597	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21WP	G16_171	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.92	1.05	0.15597	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03496	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03496	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03496	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03496	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.92	1.05	0.06463	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.92	1.05	0.06463	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05		

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05	0.05287	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06556	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.9	1.05	0.20781	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.92	1.05	0.20781	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21L	G16_171	'OKLAUNION 345KV'	1.009207	0.908781	0.100426	0.95798	0.92	1.05	0.1799	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	2	21WP	G16_171	'OKLAUNION 345KV'	1.005411	0.919559	0.0858518	0.96111	0.92	1.05	0.1946	POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.92	1.05	0.22279	ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.92	1.05	0.22279	ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.9	1.05	0.22279	SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.92	1.05	0.22279	SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.9	1.05	0.09048	STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.92	1.05	0.09048	STATELINE INTERCHANGE - STLIN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.9	1.05	0.09048	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.92	1.05	0.09048	STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.99073	0.919197	0.071533	0.90675	0.92	1.05	0.12002	SUNNYSIDE - TERRYD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.975545	0.801068	0.174477	0.8222	0.92	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.92	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.977523	0.888607	0.0889163	0.90675	0.92	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.95	1.05	0.22359	System Intact
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.95	1.05	0.22359	System Intact
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977732	0.822204	0.155528	0.8222	0.95	1.05	0.19378	System Intact
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977732	0.822204	0.155528	0.8222	0.95	1.05	0.19378	System Intact
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.906754	0.0751818	0.90675	0.95	1.05	0.23291	System Intact
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981936	0.906754	0.0751818	0.90675	0.95	1.05	0.23291	System Intact
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979428	0.826461	0.152967	0.82646	0.95	1.05	0.22279	System Intact
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.983219	0.892855	0.0903648	0.92088	0.9	1.05	0.10563	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_171	'OKLAUNION 345KV'	0.983219	0.892855	0.0903648	0.92088	0.92	1.05	0.10563	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.97996	0.896559	0.0834011	0.90675	0.9	1.05	0.07153	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.97996	0.896559	0.0834011	0.90675	0.92	1.05	0.07153	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.9	1.05	0.07167	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.92	1.05	0.07167	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.980232	0.8849	0.095332	0.90675	0.9	1.05	0.07618	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.980232	0.8849	0.095332	0.90675	0.92	1.05	0.07618	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.980232	0.8849	0.095332	0.90675	0.9	1.05	0.07618	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977732	0.810058	0.167674	0.8222	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21L	G16_171	'OKLAUNION 345KV'	0.977732	0.810058	0.167674	0.8222	0.92	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981847	0.901375	0.0804722	0.90675	0.92	1.05	0.0408	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.9	1.05	0.22279	TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.92	1.05	0.22279	TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.9	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.9	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.980323	0.90143	0.0788932	0.90675	0.9	1.05	0.23291	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_171	'OKLAUNION 345KV'	0.980313	0.901231	0.0790821	0.90675	0.92	1.05	0.23291	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.07807	System Intact
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.07807	System Intact
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 230KV'	0.999107	0.920025	0.0790821	0.92003	0.95	1.05	0.07594	System Intact
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.07593	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987669	0.874451	0.113217	0.88217	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987669	0.874451	0.113217	0.88217	0.9	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	1	0.888072	0.111928	0.88217	0.9	1.05	0.08063	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978173	0.899788	0.0783843	0.91598	0.9	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976707	0.895245	0.0814623	0.91598	0.9	1.05	0.19901	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL	0	21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976783	0.894322	0.0824615	0.91598	0.9	1.05	0.19901	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983742	0.88479	0.0989521	0.8984	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983742	0.88479	0.0989521	0.8984	0.9	1.05	0.05461	CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.98763	0.874154	0.113476	0.88217	0.9	1.05	0.19246	CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	1							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.984866	0.888783	0.096083	0.8984	0.9	1.05	0.05536	G16-003-TAP 345.00 - WOODWARD DISTRICT EH 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978239	0.895983	0.0822566	0.91598	0.9	1.05	0.07504	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976696	0.893675	0.0832849	0.91598	0.9	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976696	0.893675	0.0832849	0.91598	0.9	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.0912333	0.8984	0.9	1.05	0.04672	Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.0912333	0.8984	0.9	1.05	0.04672	Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.05371	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.05371	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.05335	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	1	0.873377	0.126623	0.88217	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.873885	0.113808	0.88217	0.9	1.05	0.19246	MAJESTIC WIND 115KV SWITCHED SHUNT
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987989	0.890881	0.0971085	0.88217	0.9	1.05	0.08239	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05688	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983824	0.887861	0.0959628	0.8984	0.9	1.05	0.05512	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983657	0.890972	0.092685	0.8984	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983657	0.890972	0.092685	0.8984	0.9	1.05	0.07107	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	1	0.876923	0.123077	0.88217	0.9	1.05	0.05832	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.977311	0.890959	0.0863523	0.91598	0.9	1.05	0.19901	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05287	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05287	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987718	0.875335	0.112383	0.88217	0.9	1.05	0.19246	ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	1	0.887851	0.112149	0.88217	0.9	1.05	0.19246	SEMINOLE GAS 13KV SWITCHED SHUNT
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983793	0.889768	0.0940244	0.8984	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983793	0.889768	0.0940244	0.8984	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.977111	0.898563	0.0785478	0.91598	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.977111	0.898563	0.0785478	0.91598	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.1816	System Intact
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.1816	System Intact
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.19901	System Intact
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.19901	System Intact
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.882171	0.105522	0.88217	0.95	1.05	0.19246	System Intact
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978713	0.886244	0.0924695	0.91598	0.9	1.05	0.07618	TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.978713	0.886244	0.0924695	0.91598	0.9	1.05	0.07618	TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.983999	0.888512	0.0954778	0.8984	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230V CKT @ 1'
FDNS	06ALL		0 21WP	G16_171	'POTTER COUNTY INTERCHANGE 345KV'	0.98811	0.888961	0.0991488	0.88217	0.9	1.05	0.19246	TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT
FDNS	06ALL		0 21WP	G16_171	'RANDALL COUNTY INTERCHANGE 230KV'	1.001004	0.938957	0.0620475	0.93896	0.95	1.05	0.02994	System Intact
FDNSLock	06ALL		2 18SP	G16_171	'ROARK6 230.00 230KV'	1.020224	1.080051	0.0598267	1.02	0.9	1.05	0.04724	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'ROARK6 230.00 230KV'	1.020224	1.080051	0.0598267	1.02	0.92	1.05	0.04724	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_171	'ROBERTS COUNTY TAP 69KV'	1.019254	1.056662	0.0734085	1.02375	0.9	1.05	0.04724	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.99168	0.912161	0.0795189	0.91779	0.92	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.99168	0.912161	0.0795189	0.91779	0.92	1.05	0.18259	AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.990055	0.912374	0.0776806	0.91779	0.92	1.05	0.06701	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.990055	0.912374	0.0776806	0.91779	0.92	1.05	0.06701	BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 115KV'	0.953607	0.873704	0.0799028	0.95684	0.9	1.05	0.09048	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 115KV'	0.953607	0.873704	0.0799028	0.95684	0.9	1.05	0.09048	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 115KV'	0.989482	0.91903	0.0704518	0.94503	0.92	1.05	0.08514	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.991221	0.912006	0.0792154	0.91779	0.92	1.05	0.05586	CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.991273	0.912663	0.07861	0.91779	0.92	1.05	0.05586	G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.989353	0.912742	0.076611	0.91779	0.92	1.05	0.11576	GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.989352	0.912741	0.076611	0.91779	0.92	1.05	0.11576	GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 115KV'	0.988367	0.910602	0.077765	0.91779	0.92	1.05	0.0513	GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.07663	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.07663	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.23724	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.23724	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 115KV'	0.990367	0.916864	0.0735025	0.94503	0.92	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 115								

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.97064	0.903145	0.067495	0.90842	0.92	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'		0.915479	0.0845211	0.90842	0.92	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.06701	'BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.06701	'BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.95464	0.915326	0.0393143	0.9309	0.92	1.05	0.04399	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972962	0.912699	0.060263	0.9309	0.92	1.05	0.09222	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.1172	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.1172	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.1172	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.1172	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.964962	0.908186	0.0567757	0.9309	0.92	1.05	0.04163	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'SHAMROCK 69KV'	0.967834	0.914151	0.053683	0.96076	0.92	1.05	0.09468	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.9	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.92	1.05	0.09048	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.971364	0.905931	0.0654329	0.9309	0.92	1.05	0.08514	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.9702	0.902855	0.0673447	0.90842	0.92	1.05	0.05586	'CLEVELAND - G15066. T 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.954453	0.918686	0.0357667	0.9309	0.92	1.05	0.03003	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'		0.916379	0.0836212	0.90842	0.92	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04163	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.10446	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.97221	0.912887	0.0593234	0.9309	0.92	1.05	0.08514	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.955257	0.910689	0.0445682	0.9309	0.92	1.05	0.07504	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.9685	0.903615	0.0648848	0.90842	0.92	1.05	0.11576	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.9685	0.903615	0.0648851	0.90842	0.92	1.05	0.11576	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.967541	0.901347	0.0661935	0.90842	0.92	1.05	0.0513	'GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'		0.90884	0.0911602	0.94142	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'		0.90884	0.0911602	0.94142	0.92	1.05	0.07663	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972097	0.906409	0.0566882	0.9309	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972097	0.906409	0.0566882	0.9309	0.92	1.05	0.07044	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_171	'SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.23588	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.9	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_171	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.23724	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.12381	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.970611	0.902157	0.0684541	0.90842	0.92	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.970611	0.902157	0.0684541	0.90842	0.92	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'		0.902947	0.0970531	0.90842	0.92	1.05	0.05009	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SHAMROCK 69KV'	0.970354	0.916817	0.0535374	0.90842	0.92	1.05	0.08239	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.955735	0.917017	0.0387179	0.94142	0.92	1.05	0.10563	'MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.957871	0.913092	0.0447791	0.9309	0.92	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.957871	0.913092	0.0447791	0.9309	0.92	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.972404	0.918616	0.0537882	0.94142	0.92	1.05	0.20781	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.9	1.05	0.09048	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.92	1.05	0.09048	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.9	1.05	0.09048	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.92	1.05	0.09048	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_171	'SHAMROCK 69KV'	0.961202	0.917197	0.0440053	0.94142	0.92	1.05	0.10563	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.954056	0.912626	0.0414308	0.9309	0.92	1.05	0.07618	'TOLK STATION (ABXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SHAMROCK 69KV'	0.954056	0.912626	0.0414308	0.9309	0.92	1.05	0.07618	'TOLK STATION (ABXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.92	1.05	0.07593	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.992182	0.881688	0.110494	0.88941	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.992182	0.881688	0.110494	0.88941	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SPNSPUR_WND7345.00 345KV'		0.895314	0.104686	0.88941	0.9	1.05	0.08063	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988533	0.893715	0.0948179	0.90737	0.9	1.05	0.05461	'CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988533	0.893715	0.0948179	0.90737	0.9	1.05	0.05461	'CARLSLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.992226	0.883218	0.109008	0.88941	0.9	1.05	0.05586	'CLEVELAND - G15066. T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_171	'SPNSPUR_WND7345.00 345KV'		0.897333	0.102667	0.88941	0.9	1.05	0.21339	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	1	0.880613	0.119387	0.88941	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.992454	0.898125	0.0943297	0.88941	0.9	1.05	0.08239	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988603	0.896797	0.091805	0.90737	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988461	0.89992	0.0885413	0.90737	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.07807	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_171	'SPNSPUR_WND7345.00 345KV'	1	0.88416	0.11584	0.88941	0.9	1.05	0.05832	'OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988576	0.898712	0.0898643	0.90737	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.984596	0.892986	0.0916106	0.92273	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SPNSPUR_WND7345.00 345KV'	0.984596	0.892986	0.0916106	0.92273	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'SPNSPUR_WND7345.00 345KV'	0.988744	0.897451	0.0912929	0.90737	0.9	1.05	0.03903	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 2'
FDNSLock	06ALL	2	18SP	G16_171	'STATELINE INTERCHANGE 115KV'	1.021039	1.075547	0.0545086	1.02261	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'STATELINE INTERCHANGE 115KV'	1.021124	1.069772	0.048648	1.01641	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.05096	System Intact
FDNS	06ALL	0	21L	G16_171	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.05096	System Intact
FDNS	06ALL	0	21WP	G16_171	'STATELINE INTERCHANGE 230KV'	0.999138	0.921867	0.0772707	0.92187	0.95	1.05	0.06566	System Intact
FDNSLock	06ALL	2	18SP	G16_171	'STLN-DEMARC6 230KV'	1.020763	1.077596	0.0568331	1.01717	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'STLN-DEMARC6 230KV'	1.003486	0.940168	0.0633178	0.94017	0.95	1.05	0.07752	System Intact
FDNSLock	06ALL	2	18SP	G16_171	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.9	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_171	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.92	1.05	0.04724	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'SWEETWATER 230KV'	1.005199	0.94769	0.0575091	0.94769	0.95	1.05	0.07752	System Intact
FDNS	06ALL	0	21SP	G16_171	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SWISHER COUNTY INTERCHANGE 230KV'	0.964427	0.899783	0.064644	0.93839	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	1.05	0.06036	System Intact
FDNS	06ALL	0	21SP	G16_171	'SWISHER COUNTY INTERCHANGE 230KV'	0.981995	0.938393	0.0436023	0.93839	0.95	1.05	0.06036	System Intact
FDNS	06ALL	0	21L	G16_171	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	1.05	0.13656	System Intact
FDNS	06ALL	0	21L	G16_171	'TOLK STATION 345KV'	0.988694	0.932858	0.0558364	0.93286	0.95	1.05	0.13656	System Intact
FDNS	06ALL	0	21WP	G16_171	'TOLK STATION 345KV'	0.998751	0.93169	0.0670596	0.93169	0.95	1.05	0.14983	System Intact
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 230KV'	0.997739	0.91617	0.0810212	0.93709	0.925	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 230KV'	0.997739	0.91617	0.0810212	0.93709	0.925	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 230KV'	0.997345	0.924012	0.0733337	0.93709	0.925	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987103	0.897367	0.0897366	0.90252	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987103	0.897367	0.0897366	0.90252	0.9	1.05	0.18259	'AMOCO SWITCHING STATION - YOAKUM COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980337	0.871075	0.109263	0.89054	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980337	0.871075	0.109263	0.89054	0.9	1.05	0.05461	'CARLISLE INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.986669	0.896838	0.0898305	0.90252	0.9	1.05	0.0423	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.986994	0.898432	0.088562	0.89054	0.9	1.05	0.18527	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987166	0.897297	0.0898693	0.90252	0.9	1.05	0.0423	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.05336	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.05336	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.04672	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.05371	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.05335	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04778	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05688	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.98007	0.87691	0.10316	0.89054	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.98007	0.87691	0.10316	0.89054	0.9	1.05	0.05512	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980898	0.883063	0.0978354	0.89054	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980898	0.883063	0.0978354	0.89054	0.9	1.05	0.07107	'NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980444	0.88015	0.100294	0.89054	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.980444	0.88015	0.100294	0.89054	0.9	1.05	0.05287	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.979624	0.876329	0.103296	0.89054	0.9	1.05	0.05755	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_171	'TUCO INTERCHANGE 345KV'	0.987203	0.902522	0.0846803	0.90252	0.95	1.05	0.0423	System Intact
FDNS	06ALL	0	21L	G16_171	'TUCO INTERCHANGE 345KV'	0.981517	0.88						

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.95668	0.872255	0.0844254	0.88972	0.9	1.05	0.04399	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.08786	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.0764	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.957466	0.87909	0.0783766	0.88972	0.9	1.05	0.09222	BVCRCNTY7 345.00 - CLARKCOUNTY345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.1172	BVCRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.1172	BVCRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.1172	BVCRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.95559	0.882665	0.0729249	0.88972	0.9	1.05	0.04163	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955598	0.874507	0.0810914	0.88972	0.9	1.05	0.08514	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.954336	0.873399	0.080937	0.88972	0.9	1.05	0.14027	CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	0.989832	0.882469	0.107363	0.88805	0.9	1.05	0.05586	CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955954	0.873539	0.0824149	0.88972	0.9	1.05	0.03003	CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	1	0.894915	0.105085	0.88805	0.9	1.05	0.21339	CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04163	ELK CITY 230KV (ELKCTY6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04163	ELK CITY 230KV (ELKCTY6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10446	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.10446	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10446	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.10446	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955246	0.877048	0.0781975	0.88972	0.9	1.05	0.08514	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956451	0.881292	0.0751584	0.88972	0.9	1.05	0.07504	G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.95642	0.868502	0.0879176	0.88972	0.9	1.05	0.07504	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955979	0.884514	0.0714648	0.88972	0.9	1.05	0.0374	GEN542962 2-IATAN UNIT #2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955566	0.884194	0.071372	0.88972	0.9	1.05	0.0676	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955134	0.874023	0.0811113	0.88972	0.9	1.05	0.14027	GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.07044	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_171	XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.23724	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_171	XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.23724	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.12381	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04778	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	1	0.880141	0.119859	0.88805	0.9	1.05	0.05009	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956663	0.88375	0.0729131	0.88972	0.9	1.05	0.04893	JONES STATION - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956663	0.88375	0.0729131	0.88972	0.9	1.05	0.04893	JONES STATION - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955292	0.873096	0.0821962	0.88972	0.9	1.05	0.12002	LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21WHP	G16_171	XIT_INTG 6230.00 230KV'	0.990057	0.895858	0.0941991	0.88805	0.9	1.05	0.08239	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.955999	0.876003	0.079996	0.88972	0.9	1.05	0.07321	NEWHART 230 - PLANT X STATION 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.07807	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.954897	0.874378	0.0805191	0.88972	0.9	1.05	0.12002	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956859	0.873174	0.0836843	0.88972	0.9	1.05	0.06036	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956892	0.881898	0.0749943	0.88972	0.9	1.05	0.07153	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956884	0.88173	0.0751533	0.88972	0.9	1.05	0.07167	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.954792	0.858261	0.0965316	0.88972	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.954792	0.858261	0.0965316	0.88972	0.9	1.05	0.07618	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956778	0.881682	0.0750968	0.88972	0.9	1.05	0.04048	TOLK STATION EAST - TOLK STATION TAP 230KV CKT @ 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956587	0.879243	0.0773441	0.88972	0.9	1.05	0.31389	TUCO INTERCHANGE - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956587	0.879243	0.0773441	0.88972	0.9	1.05	0.31389	TUCO INTERCHANGE - YOAKUM 345 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956294	0.881167	0.0751265	0.88972	0.9	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956294	0.881167	0.0751265	0.88972	0.9	1.05	0.04675	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956294	0.881167	0.0751265	0.88972	0.9	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21SP	G16_171	XIT_INTG 6230.00 230KV'	0.956294	0.881167	0.0751265	0.88972	0.9	1.05	0.04675	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21WHP	G16_172	'AMARILLO SOUTH INTERCHANGE 230KV'	1.003064	0.931739	0.0713246	0.93174	0.95	1.05	0.12093	System Intact
FDNS	06ALL	0	21L	G16_172	'BADGER 345.00 345KV'	1.012323	0.93762	0.0747028	0.93762	0.95	1.05	0.07129	System Intact
FDNS	06ALL	0	21L	G16_172	'BADGER 345.00 345KV'	1.012323	0.93762	0.0747028	0.93762	0.95	1.05	0.07129	System Intact
FDNS	06ALL	0	21WHP	G16_172	'BADGER 345.00 345KV'	1.010793	0.94727	0.0635229	0.94727	0.95	1.05	0.08294	System Intact
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.968629	0.87124	0.0973891	0.87749	0.9	1.05	0.0528	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.9679							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.96924	0.871001	0.0982388	0.87749	0.9	1.05	0.04661	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.967674	0.862723	0.10495	0.87749	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969149	0.869639	0.09951	0.87749	0.9	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.966796	0.85835	0.108446	0.87749	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.966661	0.85613	0.110148	0.87749	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969336	0.871734	0.0976025	0.87749	0.9	1.05	0.04661	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.13203	'System Intact'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969786	0.877493	0.0922931	0.87749	0.95	1.05	0.13203	'System Intact'
FDNS	06ALL	0	21SP	G16_172	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.16421	'System Intact'
FDNS	06ALL	0	21SP	G16_172	'BORDER 7345.00 345KV'	0.968822	0.934634	0.0341884	0.93463	0.95	1.05	0.16421	'System Intact'
FDNS	06ALL	0	21WVP	G16_172	'BORDER 7345.00 345KV'	0.973293	0.916543	0.0567498	0.91654	0.95	1.05	0.1556	'System Intact'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'BORDER 7345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_172	'BOWERS INTERCHANGE 69KV'	1.034897	1.071238	0.0363411	1.03926	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_172	'BOWERS TAP 69KV'	1.024455	1.061259	0.0368036	1.02888	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.08273	'System Intact'
FDNS	06ALL	0	21SP	G16_172	'BUSHLAND INTERCHANGE 230KV'	0.991085	0.945425	0.0456606	0.94542	0.95	1.05	0.08273	'System Intact'
FDNS	06ALL	0	21WVP	G16_172	'BUSHLAND INTERCHANGE 230KV'	1.008722	0.932744	0.0759785	0.93274	0.95	1.05	0.08025	'System Intact'
FDNS	06ALL	0	21L	G16_172	'BVRCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.11127	'System Intact'
FDNS	06ALL	0	21L	G16_172	'BVRCNTY7 345.00 345KV'	1.00635	0.925004	0.0813457	0.925	0.95	1.05	0.11127	'System Intact'
FDNS	06ALL	0	21WVP	G16_172	'BVRCNTY7 345.00 345KV'	1.006863	0.937326	0.0695368	0.93733	0.95	1.05	0.13056	'System Intact'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967825	0.886665	0.0811592	0.90812	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.96842	0.890848	0.0775719	0.90812	0.9	1.05	0.03109	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.969176	0.897907	0.0712687	0.90812	0.9	1.05	0.09952	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968434	0.899768	0.0686662	0.90812	0.9	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.96764	0.893942	0.0736985	0.90812	0.9	1.05	0.09381	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.966475	0.893047	0.0734277	0.90812	0.9	1.05	0.13028	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967829	0.892317	0.075512	0.90812	0.9	1.05	0.05903	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.969169	0.896061	0.0731075	0.90812	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968749	0.897596	0.0711526	0.90812	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967369	0.896732	0.0706367	0.90812	0.9	1.05	0.09381	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968277	0.899867	0.0684105	0.90812	0.9	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968249	0.887365	0.0808841	0.90812	0.9	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967124	0.893546	0.0735774	0.90812	0.9	1.05	0.13028	'GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968463	0.898047	0.0704159	0.90812	0.9	1.05	0.04741	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968618	0.889175	0.0794432	0.90812	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.971452	0.890901	0.0805511	0.96611	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968561	0.879077	0.0894831	0.90812	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.968447	0.896784	0.0716631	0.90812	0.9	1.05	0.04741	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967324	0.892308	0.0750153	0.90812	0.9	1.05	0.11101	'LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.969377	0.883503	0.0858741	0.90812	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.969377	0.883503	0.0858741	0.90812	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WVP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.992492	0.899338	0.0931541	0.91011	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967413	0.899567	0.0678461	0.90812	0.9	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967413	0.899567	0.0678461	0.90812	0.9	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.967003	0.893665	0.0733384	0.90812	0.9	1.05	0.11101	'SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.966592	0.877529	0.0890628	0.90812	0.9	1.05	0.14968	'TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'CHAN+TASCOS6230.00 230KV'	0.966592	0						

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21WP	G16_172	'CRAWFISH_DR 345.00 345KV'	0.986513	0.894866	0.0916473	0.90018	0.9	1.05	0.15508	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979369	0.874221	0.105148	0.88811	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.980162	0.882819	0.0973431	0.88811	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.980035	0.879063	0.100972	0.88811	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979677	0.87909	0.100586	0.88811	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'CRAWFISH_DR 345.00 345KV'	0.986521	0.895047	0.0914748	0.90018	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.98015	0.882266	0.0978838	0.88811	0.9	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979179	0.875628	0.10355	0.88811	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.979218	0.874262	0.104955	0.88811	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'CRAWFISH_DR 345.00 345KV'	0.987111	0.89255	0.0945614	0.90018	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.9796	0.877547	0.102054	0.88811	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.9807	0.888114	0.0925859	0.88811	0.95	1.05	0.12697	System Intact
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.9807	0.888114	0.0925859	0.88811	0.95	1.05	0.12697	System Intact
FDNS	06ALL		0 21WP	G16_172	'CRAWFISH_DR 345.00 345KV'	0.986551	0.900183	0.0863677	0.90018	0.95	1.05	0.15508	System Intact
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.980371	0.869743	0.110627	0.88811	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'CRAWFISH_DR 345.00 345KV'	0.980371	0.869743	0.110627	0.88811	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956563	0.89836	0.0582028	0.927	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'DEAF SMITH COUNTY INTERCHANGE 230KV'	0.956826	0.89407	0.0627569	0.927	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 2'
FDNSLock	06ALL		2 1RSP	G16_172	'DEMPSEY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 1RSP	G16_172	'DEMPSEY6 230.00 230KV'	1.02	1.084848	0.0648477	1.02125	0.92	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.986993	0.898431	0.0885621	0.89054	0.9	1.05	0.12697	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980215	0.876867	0.103349	0.89054	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980991	0.885339	0.0956211	0.89054	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980991	0.885339	0.0956211	0.89054	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980867	0.881641	0.092262	0.89054	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980867	0.881641	0.092262	0.89054	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980517	0.881672	0.0988451	0.89054	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'ELK_CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'ELK_CT1 345.00 345KV'	0.987173	0.897473	0.0897	0.90252	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980978	0.884794	0.0961838	0.89054	0.9	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980031	0.87826	0.101771	0.89054	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980069	0.876909	0.10316	0.89054	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'ELK_CT1 345.00 345KV'	0.98777	0.89501	0.0927594	0.90252	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980443	0.880149	0.100294	0.89054	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.980443	0.880149	0.100294	0.89054	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.98118	0.872152	0.109028	0.89054	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'ELK_CT1 345.00 345KV'	0.98118	0.872152	0.109028	0.89054	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.039841	1.070043	0.0320223	1.07636	0.9	1.05	0.06915	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.08773	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.08773	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.039276	1.065471	0.0261956	1.07636	0.9	1.05	0.08773	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 3'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.034487	1.055636	0.0211487	1.07636	0.9	1.05	0.04342	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.039885	1.066267	0.0263828	1.07636	0.9	1.05	0.05577	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.04342	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.034577	1.055887	0.0213096	1.07636	0.9	1.05	0.04342	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.044405	1.066878	0.0224739	1.07636	0.9	1.05	0.07732	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.044405	1.066878	0.0224739	1.07636	0.9	1.05	0.07732	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.044444	1.066241	0.0217973	1.07636	0.9	1.05	0.07732	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.044444	1.066241	0.0217973	1.07636	0.9	1.05	0.07732	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.04416	1.070633	0.0264726	1.07636	0.9	1.05	0.06746	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.02996	1.051067	0.021107	1.07636	0.9	1.05	0.04782	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.02996	1.051067	0.021107	1.07636	0.9	1.05	0.04782	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 2'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.033831	1.056216	0.0223856	1.07636	0.9	1.05	0.04825	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'EVA REGULATOR 69KV'	1.033831							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY	
FDNS	06ALL		2	21SP	G16_172	EXCELN4-HV13115.00 115KV'	1.023353	1.053408	0.0300555	1.0299	0.9	0.0319	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1'	
FDNS	06ALL		2	21SP	G16_172	EXCELN4-HV13115.00 115KV'	1.023353	1.053408	0.0300555	1.0299	0.9	1.05	0.0319	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		2	21SP	G16_172	EXCELN4-HV23115.00 115KV'	1.023244	1.052418	0.0300747	1.02889	0.9	0.0319	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 2'	
FDNS	06ALL		2	21SP	G16_172	EXCELN4-HV23115.00 115KV'	1.023244	1.052418	0.0300747	1.02889	0.9	1.05	0.0319	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 2'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.999681	0.890177	0.109504	0.90694	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	1.000063	0.898434	0.101628	0.90694	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.997988	0.89405	0.103938	0.90694	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.998664	0.894791	0.103873	0.90694	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.996877	0.891114	0.105763	0.90694	0.9	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.997933	0.892895	0.105038	0.90694	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.999305	0.895412	0.103893	0.90694	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	FREWHELCO17345.00 345KV'	0.999305	0.895412	0.103893	0.90694	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.004135	0.895075	0.10906	0.91176	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.002443	0.89893	0.103514	0.91176	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.003118	0.899667	0.103451	0.91176	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.001334	0.896008	0.105326	0.91176	0.9	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G06-44 115.00 115KV'	1.002388	0.89778	0.104608	0.91176	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.997921	0.892861	0.105059	0.90691	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14 345.00 345KV'	0.999298	0.895379	0.10392	0.90691	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.002537	0.893293	0.109244	0.91001	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.000842	0.897155	0.103687	0.91001	0.9	1.05	0.0564	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.001519	0.897894	0.103625	0.91001	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.001519	0.897894	0.103625	0.91001	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	0.99973	0.894228	0.105502	0.91001	0.9	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.000787	0.896003	0.104783	0.91001	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.000787	0.896003	0.104783	0.91001	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.002161	0.898514	0.103647	0.91001	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G10-14-1 115.00 115KV'	1.002161	0.898514	0.103647	0.91001	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968629	0.871224	0.0973891	0.87749	0.9	1.05	0.0528	AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.967938	0.871167	0.0967715	0.87749	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.967938	0.871167	0.0967715	0.87749	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968898	0.870405	0.0984938	0.87749	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968898	0.870405	0.0984938	0.87749	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0	18G	G16_172	G1149G1504 345.00 345KV'	0.967197	0.890522	0.0676751	0.95785	0.9	1.05	1.1021	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.97206	0.882626	0.0894338	0.87749	0.9	1.05	0.05432	G15063 T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968408	0.860711	0.107696	0.87749	0.9	1.05	0.07129	G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968558	0.870812	0.0977464	0.87749	0.9	1.05	0.0528	G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968879	0.872198	0.0966812	0.87749	0.9	1.05	0.04716	GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.969365	0.871988	0.0973775	0.87749	0.9	1.05	0.04661	HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.96924	0.871001	0.0982388	0.87749	0.9	1.05	0.04661	HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.06369	Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968979	0.869823	0.0991556	0.87749	0.9	1.05	0.06369	Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.968793	0.864994	0.103799	0.87749	0.9	1.05	0.07322	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0	21L	G16_172	G1149G1504 345.00 345KV'	0.967674	0.862723	0.10495					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_172	'G1149G1504 345.00 345KV'	0.967364	0.860603	0.10676	0.87749	0.9	1.05	0.05531	POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'G1149G1504 345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'G1149G1504 345.00 345KV'	0.969859	0.863968	0.105891	0.87749	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'G16-045-SUB1345.00 345KV'	1	1.264422	0.264422	1.25588	0.9	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'G16-045-SUB2345.00 345KV'	1	1.2884	0.2884	1.27969	0.9	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GEN-2016-057345.00 345KV'	1	1.276997	0.276997	1.26837	0.9	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GEN-2016-057345.00 345KV'	1	1.324082	0.324082	1.31513	0.9	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987686	0.8893	0.098386	0.89793	0.9	1.05	0.08482	CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987627	0.890547	0.0970804	0.89794	0.9	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987721	0.890309	0.097412	0.89793	0.9	1.05	0.08482	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987658	0.887568	0.10009	0.89793	0.9	1.05	0.08482	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.986245	0.893592	0.0926524	0.89794	0.9	1.05	0.10674	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.986045	0.890344	0.0957015	0.89794	0.9	1.05	0.04869	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987693	0.888821	0.0988725	0.89794	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	1	0.889226	0.110774	0.89794	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987724	0.892846	0.0948775	0.89794	0.9	1.05	0.15608	KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987716	0.887688	0.100028	0.89793	0.9	1.05	0.08482	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987758	0.886429	0.10133	0.89794	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987251	0.890864	0.0963873	0.89794	0.9	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.98772	0.890597	0.0971233	0.89793	0.9	1.05	0.08482	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.07069	System Intact
FDNS	06ALL		0 21L	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.989845	0.916567	0.0732779	0.91657	0.95	1.05	0.07069	System Intact
FDNS	06ALL		0 21W1P	G16_172	'GRAPEVINE INTERCHANGE 230KV'	0.987715	0.897935	0.0897798	0.89794	0.95	1.05	0.08482	System Intact
FDNSLock	06ALL		2 18SP	G16_172	'Graves Sub 115KV'	1.02286	1.073505	0.056449	1.02368	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_172	'GRAVES SUB 69KV'	1.019223	1.076678	0.0574549	1.02628	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_172	'GREENBELT REC-KELLERVILLE 69KV'	1.02793	1.059641	0.0368478	1.02722	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL		2 18SP	G16_172	'GREENBELT REC-WHEELER 69KV'	1.018432	1.075929	0.0574974	1.02549	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05916	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990852	0.886974	0.103878	0.89231	0.9	1.05	0.05916	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.9924	0.899665	0.092734	0.906	0.9	1.05	0.08475	'CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.991623	0.897496	0.0941273	0.906	0.9	1.05	0.08475	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.991574	0.876381	0.115194	0.89231	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.986543	0.878684	0.107858	0.89231	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.985459	0.872436	0.113023	0.89231	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.87993	0.109949	0.89231	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.989879	0.87993	0.109949	0.89231	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.992392	0.898723	0.0936691	0.906	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	1	0.898257	0.101743	0.906	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.899397	0.0930243	0.906	0.9	1.05	0.08475	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990625	0.880657	0.109968	0.89231	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.989009	0.876968	0.112041	0.89231	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNSLock	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.992235	0.896104	0.0961305	0.906	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.98982	0.878583	0.111238	0.89231	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.892308	0.0985786	0.89231	0.95	1.05	0.07153	System Intact
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990887	0.892308	0.0985786	0.89231	0.95	1.05	0.07153	System Intact
FDNS	06ALL		0 21SP	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.997279	0.948785	0.0484942	0.94879	0.95	1.05	0.08879	System Intact
FDNS	06ALL		0 21SP	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.997279	0.948785	0.0484942	0.94879	0.95	1.05	0.08879	System Intact
FDNS	06ALL		0 21W1P	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.992422	0.906	0.0864221	0.906	0.95	1.05	0.08475	System Intact
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990774	0.879976	0.110798	0.89231	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'HITCHLAND INTERCHANGE 230KV'	0.990774	0.879976	0.110798	0.89231	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.999676	0.890143	0.109532	0.90691	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	1.000059	0.898401	0.101658	0.90691	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.997976	0.894016	0.10396	0.90691	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.998655	0.894757	0.103898	0.90691	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.996862	0.891081	0.105781	0.90691	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'Hitchland Interchange 345KV'	0.997921	0.892861	0.105059	0.90691	0.9			

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		2 21L	G16_172	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.9	1.05	0.09544	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'JERICHO 69KV'	1.022854	1.051907	0.0290534	1.03672	0.92	1.05	0.09544	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.9	1.05	0.09544	'G16-037-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'JERICHO 69KV'	1.023344	1.052554	0.0292096	1.03672	0.92	1.05	0.09544	'G16-037-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNSLock	06ALL		2 18SP	G16_172	'KINGSMILL INTERCHANGE 69KV'	1.029913	1.052916	0.0230038	1.03322	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'LAWTON EASTSIDE 345KV'	0.988849	0.913434	0.0754145	0.97952	0.92	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'LAWTON EASTSIDE 345KV'	0.989403	0.914396	0.0750066	0.97531	0.92	1.05	0.06746	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		3 21L	G16_172	'LAWTON EASTSIDE 345KV'	0.989431	0.918226	0.0712057	0.97728	0.92	1.05	0.0675	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.15597	System Intact
FDNS	06ALL		0 21L	G16_172	'LAWTON EASTSIDE 345KV'	1.007004	0.947385	0.059619	0.94739	0.95	1.05	0.15597	System Intact
FDNSLock	06ALL		2 18SP	G16_172	'LYONS SUB 69KV'	1.014907	1.052071	0.0371634	1.01937	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL		2 18SP	G16_172	'LYONS TAP 69KV'	1.02031	1.057277	0.0369672	1.02475	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL		2 18SP	G16_172	'MAGIC CITY 69KV'	1.015956	1.073698	0.057742	1.02305	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNSLock	06ALL		2 18SP	G16_172	'MCULLOUGH SUB 69KV'	1.029286	1.058355	0.0290693	1.03294	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.9	1.05	0.11712	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.026075	1.050965	0.0248905	1.01539	0.92	1.05	0.11712	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.9	1.05	0.11712	'G16-037-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.026116	1.050535	0.0244195	1.01539	0.92	1.05	0.11712	'G16-037-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.92	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		2 21SP	G16_172	'MEMPHIS 69KV'	1.022959	1.051213	0.0282545	1.01539	0.92	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	1	0.89583	0.10417	0.88973	0.9	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984361	0.88184	0.10252	0.88973	0.9	1.05	0.073	'CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	1	0.899523	0.100477	0.88973	0.9	1.05	0.073	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984429	0.883546	0.100883	0.88973	0.9	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	1	0.897376	0.102624	0.88973	0.9	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CRT 2'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.9844	0.882784	0.101617	0.88973	0.9	1.05	0.073	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984013	0.880494	0.10352	0.88973	0.9	1.05	0.073	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.980024	0.892019	0.0880049	0.90209	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CRT 2'
FDNS	06ALL		0 18SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 18SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.973131	0.887827	0.0853035	0.97465	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.980881	0.891962	0.0889189	0.92201	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.894821	0.0836055	0.90209	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978427	0.894821	0.0836055	0.90209	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978885	0.894146	0.0847391	0.90209	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978885	0.894146	0.0847391	0.90209	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984366	0.881034	0.103332	0.88973	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984366	0.881034	0.103332	0.88973	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	1	0.880735	0.119265	0.88973	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CRT 1'
FDNSLock	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.98433	0.884213	0.100117	0.88973	0.9	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984394	0.881206	0.103188	0.88973	0.9	1.05	0.073	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984782	0.898919	0.0858634	0.88973	0.9	1.05	0.08422	'MATHWSN7 345.00 - NORTHWEST 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.979439	0.894086	0.0853535	0.90209	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.979439	0.894086	0.0853535	0.90209	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978672	0.891548	0.0871245	0.90209	0.9	1.05	0.05817	'MINGO - SETAB 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.958425	0.898039	0.063866	0.922	0.9	1.05	0.07642	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.969552	0.897217	0.0723359	0.922	0.9	1.05	0.07642	'MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.983895	0.877033	0.106862	0.88973	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.981309	0.89794	0.0833692	0.922	0.9	1.05	0.07642	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984051	0.882411	0.10164	0.88973	0.9	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978818	0.892704	0.0861139	0.90209	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984412	0.88307	0.101342	0.88973	0.9	1.05	0.073	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	1	0.895688	0.104312	0.88973	0.9	1.05	0.073	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.902086	0.0768393	0.90209	0.95	1.05	0.06282	System Intact
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978925	0.902086	0.0768393	0.90209	0.95	1.05	0.06282	System Intact
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0602421	0.92201	0.95	1.05	0.07642	System Intact
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.982248	0.922006	0.0602421	0.92201	0.95	1.05	0.07642	System Intact
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984394	0.889732	0.0946618	0.88973	0.9	1.05	0.073	System Intact
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.98052	0.896604	0.083916	0.92201	0.9	1.05	0.14968	'TOLK STATION (ABBXL844501) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21SP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.98052	0.896604	0.083916	0.92201	0.9	1.05	0.14968	'TOLK STATION (ABBXL844501) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978815	0.891285	0.0875295	0.90209	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.978815	0.891285	0.0875295	0.90209	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'MOORE COUNTY INTERCHANGE 230KV'	0.984493	0.896089	0.0884044	0.88973	0.9	1.05	0.073	'TOLK STATION FMRR TERTIARY 13KV SWITCHED SHUNT'</

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	1.000096	0.898488	0.101608	0.9106	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	0.998723	0.894825	0.103889	0.9106	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	0.999534	0.896599	0.102935	0.9106	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	1.000589	0.899108	0.101481	0.9106	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 3115.00 115KV'	1.000589	0.899108	0.101481	0.9106	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.999704	0.890184	0.10952	0.90695	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	1.000087	0.898441	0.101646	0.90695	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.998007	0.894057	0.10395	0.90695	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.998684	0.894798	0.103886	0.90695	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.996893	0.891121	0.105771	0.90695	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.997951	0.892902	0.105049	0.90695	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.999327	0.895419	0.103908	0.90695	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'NOVUS1 7345.00 345KV'	0.999327	0.895419	0.103908	0.90695	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.9	1.05	0.11712	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.026933	1.050973	0.0240396	1.01618	0.9	1.05	0.11712	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.9	1.05	0.11712	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.026985	1.050566	0.023581	1.01618	0.9	1.05	0.11712	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		2 21SP	G16_172	'NW MEMPHIS 69KV'	1.023742	1.051137	0.027395	1.01618	0.9	1.05	0.06018	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	1	0.899887	0.100113	0.89422	0.9	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.989882	0.88333	0.106552	0.88854	0.9	1.05	0.05916	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.989882	0.88333	0.106552	0.88854	0.9	1.05	0.05916	'BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	0.981367	0.889038	0.0923285	0.89422	0.9	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.990686	0.87324	0.117446	0.88854	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.990686	0.87324	0.117446	0.88854	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OCHILTREE 230KV'	0.979564	0.896802	0.0827622	0.93289	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OCHILTREE 230KV'	0.979564	0.896802	0.0827622	0.93289	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.986261	0.876501	0.10976	0.88854	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.985379	0.870746	0.114633	0.88854	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.98904	0.876605	0.112435	0.88854	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	0.981305	0.886728	0.0945769	0.89422	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	1	0.886255	0.113745	0.89422	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.98985	0.87741	0.11244	0.88854	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.98985	0.87741	0.11244	0.88854	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.988305	0.873763	0.114542	0.88854	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	0.981167	0.884006	0.0971605	0.89422	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OCHILTREE 230KV'	0.981029	0.888289	0.0927395	0.89422	0.9	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.988998	0.875227	0.113771	0.88854	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.988998	0.875227	0.113771	0.88854	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.989752	0.87607	0.113682	0.88854	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OCHILTREE 230KV'	0.989752	0.87607	0.113682	0.88854	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.12338	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989189	0.912321	0.0768682	0.92105	0.92	1.05	0.12338	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.92	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977628	0.878514	0.0991141	0.90693	0.92	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.9	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834263	0.165737	0.82662	0.92	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.9	1.05	0.0528	'AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975342	0.810956	0.164386	0.82236	0.92	1.05	0.0528	'AXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.07129	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.07129	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.08294	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.92	1.05	0.08294	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.9	1.05	0.07129	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97693	0.817236	0.159694	0.82236	0.92	1.05	0.07129	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.9	1.05	0.08294	'BADGER 345.00 - BVRNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978663	0.821378	0.157285	0.82662	0.			

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.9	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978641	0.821105	0.157536	0.82662	0.92	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9865	0.909737	0.0767626	0.92105	0.92	1.05	0.03687	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.9	1.05	0.03109	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978093	0.887821	0.0902719	0.90693	0.92	1.05	0.03109	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.9	1.05	0.0972	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.00097	0.888706	0.112265	0.95817	0.92	1.05	0.0972	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1.002267	0.907976	0.0942918	0.9613	0.92	1.05	0.11517	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.9	1.05	0.09762	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.001411	0.898528	0.102883	0.96159	0.92	1.05	0.09762	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		3 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1.002849	0.912851	0.0899981	0.96336	0.92	1.05	0.11552	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.9	1.05	0.12203	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981698	0.882101	0.0995972	0.92105	0.92	1.05	0.12203	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.92	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975857	0.814082	0.161775	0.82236	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.9	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979081	0.899082	0.0799987	0.90693	0.92	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988869	0.915819	0.0730501	0.92105	0.92	1.05	0.08594	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.92	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988869	0.915819	0.0730501	0.92105	0.92	1.05	0.08594	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97578	0.810748	0.165032	0.82236	0.92	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989671	0.914596	0.0750753	0.92105	0.92	1.05	0.08444	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989671	0.914596	0.0750753	0.92105	0.92	1.05	0.08444	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.92	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978242	0.886382	0.0918592	0.90693	0.92	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980358	0.898341	0.0820174	0.90693	0.92	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98716	0.904949	0.0822111	0.92105	0.92	1.05	0.10322	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978402	0.889189	0.0892129	0.90693	0.9	1.05	0.09952	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978402	0.889189	0.0892129	0.90693	0.92	1.05	0.09952	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.1355	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.9	1.05	0.1355	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21P	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.92	1.05	0.1355	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989577	0.915271	0.0743065	0.92105	0.9	1.05	0.1355	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.896714	0.0834813	0.90693	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9873	0.910261	0.077039	0.92105	0.92	1.05	0.04627	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.9	1.05	0.04599	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978408	0.893831	0.0845775	0.90693	0.92	1.05	0.04599	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.9	1.05	0.11021	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97371	0.838516	0.135193	0.92105	0.92	1.05	0.11021	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.9	1.05	0.10082	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.982009	0.89312	0.0888888	0.92105	0.92	1.05	0.10082	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.9	1.05	0.09381	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976159	0.881288	0.094871	0.90693	0.92	1.05	0.09381	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.9	1.05	0.04895	CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977592	0.814231	0.163362	0.82236	0.92	1.05	0.04895	CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988	0.912526	0.0754739	0.90693	0.92	1.05	0.13028	CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976369	0.814477	0.161892	0.82236	0.9	1.05	0.03627	CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.92	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.9	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977218	0.817354	0.159865	0.82236	0.92	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	1.05	1.05	0.04627	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987351	0.910412	0.0769386	0.92105	0.92	1.05	0.04627	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.9	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978453	0.893956	0.0844969	0.90693	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.92	1.05	0.121	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.986421	0.900473	0.0859482	0.92105	0.92	1.05	0.121	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.9	1.05	0.121	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.92	1.05	0.121	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.985649	0.899643	0.0860058	0.92105	0.9	1.05	0.121	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.9778	0.885672	0.092128	0.90693	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98	0.893121	0.0868786	0.90693	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980339	0.828918	0.151421	0.82236	0.9	1.05	0.05432	'G15063 T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980339	0.828918	0.151421	0.82236	0.92	1.05	0.05432	'G15063 T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980726	0.829473	0.151252	0.82236	0.9	1.05	0.05432	'G15063 T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980726	0.829473	0.151252	0.82236	0.92	1.05	0.05432	'G15063 T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.9	1.05	0.03627	'G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976529	0.814958	0.161571	0.82236	0.92	1.05	0.03627	'G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.9	1.05	0.05631	'G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978889	0.820146	0.158744	0.82662	0.92	1.05	0.05631	'G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.92	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975564	0.797527	0.178037	0.82236	0.92	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978847	0.886634	0.0922134	0.92105	0.9	1.05	0.10082	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978847	0.886634	0.0922134	0.92105	0.92	1.05	0.10082	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973358	0.877753	0.0956051	0.90693	0.9	1.05	0.09381	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973358	0.877753	0.0956051	0.90693	0.92	1.05	0.09381	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975469	0.810806	0.164663	0.82236	0.9	1.05	0.0528	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975469	0.810806	0.164663	0.82236	0.92	1.05	0.0528	'G16-050-TAP 345.00 - POST ROCK 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.832587	0.167413	0.82662	0.9	1.05	0.04869	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.832587	0.167413	0.82662	0.92	1.05	0.04869	'G16-063-TAP 345.00 - HUGO 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.983732	0.912099	0.0716323	0.92105	0.9	1.05	0.05669	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975507	0.893805	0.0817016	0.90693	0.9	1.05	0.05508	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975507	0.893805	0.0817016	0.90693	0.92	1.05	0.05508	'G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973708	0.843787	0.129921	0.90693	0.9	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973708	0.843787	0.129921	0.90693	0.92	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.002764	0.914312	0.0929524	0.95817	0.92	1.05	0.06746	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.007696	0.919528	0.0881681	0.96159	0.9	1.05	0.0675	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97829	0.821196	0.157095	0.82662	0.9	1.05	0.10674	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97829	0.821196	0.157095	0.82662	0.92	1.05	0.10674	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977538	0.82082	0.156718	0.82662	0.9	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977538	0.82082	0.156718	0.82662	0.92	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977537	0.820819	0.156718	0.82662	0.9	1.05	0.10674	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977537	0.820819	0.156718	0.82662	0.92	1.05	0.10674	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977302	0.819764	0.157538	0.82662	0.9	1.05	0.10674	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977302	0.819764	0.157538	0.82662	0.92	1.05	0.10674	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975394	0.813797	0.161597	0.82662	0.9	1.05	0.04869	'GEN520947 1-HUGO1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975394	0.813797	0.161597	0.82662	0.92	1.05	0.04869	'GEN520947 1-HUGO1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.985011	0.912126	0.0728853	0.90693	0.92	1.05	0.11254	'GEN531447 1-HOLCOMB GENERATOR'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976606	0.814764	0.161842	0.82236	0.9	1.05	0.04716	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977107	0.813034	0.164073	0.82236	0.92	1.05	0.04661	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980869	0.898178	0.0826914	0.90693	0.9	1.05	0.04741	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980869	0.898178	0.0826914	0.90693	0.92	1.05	0.04741	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987879	0.906545	0.0813338	0.92105	0.92	1.05	0.08543	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987879	0.906545	0.0813338	0.92105	0.92	1.05	0.08543	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978117	0.882379	0.0963377	0.90693	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978117	0.882379	0.0963377	0.90693	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978117	0.882379	0.0963377	0.90693	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978117	0.882379	0.0963377	0.90693	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.9	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.991293	0.876389	0.114904	0.95632	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990723	0.87815	0.112574	0.95993	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.006676	0.905008	0.101668	0.95817	0.92	1.05	0.14483	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.006676	0.905008	0.101668	0.95817	0.9	1.05	0.14483	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.006209	0.910131	0.096078	0.96159	0.92	1.05	0.15817	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.006209	0.910131	0.096078	0.96159	0.9	1.05	0.15817	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978096	0.874518	0.103579	0.90693	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978096	0.874518	0.103579	0.90693	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978096	0.874518	0.103579	0.90693	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978096	0.874518	0.103579	0.90693	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976873	0.811795	0.165078	0.82236	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976873	0.811795	0.165078	0.82236	0.92	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976873	0.811795	0.165078	0.82236	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976873	0.811795	0.165078	0.82236	0.92	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976642	0.805198	0.171445	0.82236	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976642	0.805198	0.171445	0.82236	0.92	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976642	0.805198	0.171445	0.82236	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976642	0.805198	0.171445	0.82236	0.92	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975217	0.802551	0.172667	0.82236	0.92	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06882	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06882	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.9	1.05	0.06882	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98005	0.899837	0.0802126	0.90693	0.92	1.05	0.06882	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.9	1.05	0.04115	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.92	1.05	0.04115	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.9	1.05	0.04115	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.834107	0.165893	0.82662	0.92	1.05	0.04115	'HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.9	1.05	0.03913	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.92	1.05	0.03913	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.9	1.05	0.03913	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.975749	0.815799	0.15995	0.82236	0.92	1.05	0.03913	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979294	0.816588	0.162706	0.82662	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.819516	0.180484	0.82662	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1	0.819516	0.180484	0.82662	0.92	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97964	0.82149	0.15815	0.82662	0.9	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97964	0.82149	0.15815	0.82662	0.92	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976974	0.811136	0.165839	0.82236	0.9	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.976974	0.811136	0.165839	0.82236	0.92	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980805	0.897336	0.0834684	0.90693	0.9	1.05	0.04741	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980805	0.897336	0.0834684	0.90693	0.92	1.05	0.04741	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979438	0.821531	0.157907	0.82662	0.9	1.05	0.03325	'MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979438	0.821531	0.157907	0.82662	0.92	1.05	0.03325	'MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979503	0.835244	0.144259	0.82662	0.9	1.05	0.08422	'MATHWSN7 345.00 - NORTHWEST 345

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.973717	0.795087	0.178631	0.82236	0.92	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980152	0.900762	0.0793899	0.90693	0.92	1.05	0.07039	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980152	0.900762	0.0793899	0.90693	0.92	1.05	0.07039	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988977	0.915872	0.0731052	0.92105	0.92	1.05	0.06558	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.974052	0.793744	0.180308	0.82236	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.974052	0.793744	0.180308	0.82236	0.92	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979655	0.898747	0.0809081	0.90693	0.9	1.05	0.06954	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979655	0.898747	0.0809081	0.90693	0.92	1.05	0.06954	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987523	0.907259	0.0802643	0.92105	0.92	1.05	0.07392	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.987523	0.907259	0.0802643	0.92105	0.92	1.05	0.07392	'MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989144	0.912432	0.0767128	0.92105	0.92	1.05	0.19309	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.989144	0.912432	0.0767128	0.92105	0.92	1.05	0.19309	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977927	0.875245	0.102681	0.90693	0.92	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980043	0.815384	0.164659	0.82662	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980043	0.815384	0.164659	0.82662	0.92	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97225	0.814071	0.163178	0.82236	0.9	1.05	0.04661	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.97225	0.814071	0.163178	0.82236	0.92	1.05	0.04661	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979088	0.821298	0.157791	0.82662	0.9	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979088	0.821298	0.157791	0.82662	0.92	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979088	0.821298	0.157791	0.82662	0.9	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979088	0.821298	0.157791	0.82662	0.92	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988662	0.914379	0.0742828	0.92105	0.92	1.05	0.0662	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.988662	0.914379	0.0742828	0.92105	0.92	1.05	0.0662	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.974773	0.799356	0.175417	0.82236	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.974773	0.799356	0.175417	0.82236	0.92	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.974773	0.799356	0.175417	0.82236	0.92	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.9	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.979688	0.899769	0.0799189	0.90693	0.92	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977849	0.843276	0.134573	0.92105	0.9	1.05	0.0947	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.977849	0.843276	0.134573	0.92105	0.92	1.05	0.0947	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	1.009382	0.908955	0.100427	0.95817	0.92	1.05	0.07916	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_172	'OKLAUN HVDC7345.00 345KV'	1.005603	0.919735	0.0858682	0.9613	0.92	1.05	0.09385	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990529	0.913484	0.0770449	0.92105	0.92	1.05	0.13199	'POTTER COUNTY INTERCHANGE (WALK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.990529	0.913484	0.0770449	0.92105	0.92	1.05	0.13199	'POTTER COUNTY INTERCHANGE (WALK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980974	0.899924	0.0810502	0.90693	0.9	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980974	0.899924	0.0810502	0.90693	0.92	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980974	0.899924	0.0810502	0.90693	0.92	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.875814	0.104381	0.92105	0.9	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980195	0.875814	0.104381	0.92105	0.92	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980171	0.875531	0.10464	0.92105	0.9	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980171	0.875531	0.10464	0.92105	0.92	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.99092	0.919373	0.0715467	0.90693	0.92	1.05	0.11101	'SUNNYSIDE - TERRRYRD7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.983407	0.893025	0.0903822	0.92105	0.9	1.05	0.10858	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUN HVDC7345.00 345KV'	0.983407	0.893025	0.0903822	0.92105	0.92	1.05	0.10858	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980147	0.89673	0.083417	0.90693	0.9	1.05	0.07514	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980147	0.89673	0.083417	0.90693	0.92	1.05	0.07514	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.9	1.05	0.07529	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.980133	0.8966	0.0835336	0.90693	0.92	1.05	0.07529	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.9	1.05	0.14968	'TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.92	1.05	0.14968	'TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.98042	0.88507	0.0953503	0.90693	0.9	1.05	0.14968	'TOLK STATION (ABXN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.9	1.05	0.03274	'TOLK STATION EAST - TUOCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.92	1.05	0.03274	'TOLK STATION EAST - TUOCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.9	1.05	0.03274	'TOLK STATION EAST - TUOCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUN HVDC7345.00 345KV'	0.978032	0.804274	0.173758	0.82236	0.92	1.05	0.03274	'TOLK STATION EAST - TUOCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.13432	'TUOCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.13432	'TUOCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.13432	'TUOCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUN HVDC7345.00 345KV'	0.981596	0.900575	0.0810209	0.90693	0.92	1.05	0.13432	'TUOCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.92	1.05	0.12338	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.989	0.912146	0.0768536	0.92088	0.9	1.05	0.12338	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.92	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977441	0.878346	0.0990952	0.90675	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.834104	0.16589					

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	1	0.834104	0.165896	0.82646	0.92	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.9	1.05	0.0528	AIXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975173	0.810801	0.164372	0.8222	0.92	1.05	0.0528	AIXTELL - G16-050-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.07129	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.07129	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.08294	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.08294	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.9	1.05	0.07129	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.976761	0.81708	0.159681	0.8222	0.92	1.05	0.07129	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.9	1.05	0.08294	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978476	0.821221	0.157255	0.82646	0.92	1.05	0.08294	BADGER 345.00 - BVRNCY77 345.00 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.08702	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.92	1.05	0.08702	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.9	1.05	0.08702	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980349	0.899916	0.0804334	0.90675	0.92	1.05	0.08702	BADGER 345.00 - G16-003-TAP 345.00 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.9	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	0.978454	0.820948	0.157506	0.82646	0.92	1.05	0.06368	BENTON - WICHITA 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.986311	0.909563	0.076748	0.92088	0.92	1.05	0.03687	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.9	1.05	0.03109	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.977906	0.887651	0.0902547	0.90675	0.92	1.05	0.03109	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.9	1.05	0.0972	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	1.000797	0.888536	0.112261	0.95798	0.92	1.05	0.0972	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	1.002076	0.907802	0.0942737	0.96111	0.9	1.05	0.11517	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	1.001238	0.898356	0.102881	0.9614	0.9	1.05	0.09762	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	1.001238	0.898356	0.102881	0.9614	0.92	1.05	0.09762	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'OKLAUNION 345KV'	1.002657	0.912676	0.0899870	0.96317	0.9	1.05	0.11552	BORDER 7345.00 - CRAWFISH_DR 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.9	1.05	0.12203	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.981511	0.881933	0.099578	0.92088	0.92	1.05	0.12203	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.991068	0.915633	0.0754344	0.92088	0.92	1.05	0.19827	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.991068	0.915633	0.0754344	0.92088	0.92	1.05	0.19827	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.9	1.05	0.1951	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.897246	0.0846901	0.90675	0.92	1.05	0.1951	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.9	1.05	0.1951	BORDER 7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.897131	0.0848054	0.90675	0.92	1.05	0.1951	BORDER 7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.92	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.9	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975688	0.813926	0.161762	0.8222	0.92	1.05	0.03318	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.92	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.9	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978894	0.89891	0.0799835	0.90675	0.92	1.05	0.03658	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08594	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.98868	0.915644	0.0730362	0.92088	0.92	1.05	0.08594	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.9	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'OKLAUNION 345KV'	0.975611	0.810593	0.165018	0.8222	0.92	1.05	0.05916	BUFFALO7 345.00 - THISTLE7 345.00 345KV CKT 2'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92	1.05	0.08444	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.989482	0.914421	0.075061	0.92088	0.92	1.05	0.08444	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.92	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.978055	0.886213	0.0918416	0.90675	0.92	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.92	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.980171	0.898169	0.0820017	0.90675	0.92	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.9	1.05	0.1951	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981651	0.895987	0.0856642	0.90675	0.92	1.05	0.1951	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNSLock	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.9	1.05	0.1951	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNSLock	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.981624	0.895116	0.0865077	0.90675	0.92	1.05	0.1951	BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT
FDNS	06ALL	0	18G	G16_172	'OKLAUNION 345KV'	0.986971	0.904776	0.0821953	0.92088	0.92	1.05	0.10322	BVRNCY77 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'OKLAUNION 345KV'	0.9782							

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	1.05	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980008	0.896543	0.0834653	0.90675	0.92	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.9	1.05	0.18498	CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979227	0.818031	0.161197	0.82646	0.92	1.05	0.18498	CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.987111	0.910087	0.0720242	0.92088	0.92	1.05	0.04627	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978221	0.89366	0.0845613	0.90675	0.9	1.05	0.04599	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978221	0.89366	0.0845613	0.90675	0.92	1.05	0.04599	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.9	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.973523	0.838356	0.135167	0.92088	0.92	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.9	1.05	0.10082	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.981821	0.892949	0.0888718	0.92088	0.92	1.05	0.10082	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.9	1.05	0.09381	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.975972	0.881119	0.0948529	0.90675	0.92	1.05	0.09381	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.9	1.05	0.04895	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977423	0.814075	0.163348	0.8222	0.92	1.05	0.04895	'CIMARRON - DRAPER LAKE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.987811	0.912352	0.0754595	0.90675	0.92	1.05	0.13028	'CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.836506	0.163494	0.82646	0.9	1.05	0.18498	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.836506	0.163494	0.82646	0.92	1.05	0.18498	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.9762	0.814321	0.161879	0.8222	0.9	1.05	0.03627	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.9762	0.814321	0.161879	0.8222	0.92	1.05	0.03627	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978603	0.817189	0.161413	0.82646	0.9	1.05	0.05631	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978603	0.817189	0.161413	0.82646	0.92	1.05	0.05631	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	1.003842	0.909273	0.0945696	0.95798	0.92	1.05	0.09862	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	1.003703	0.915927	0.0877757	0.9614	0.92	1.05	0.09905	'CRAWFISH_DR 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.984741	0.914654	0.070087	0.90675	0.92	1.05	0.05903	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.979978	0.8281	0.151878	0.8222	0.9	1.05	0.12697	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.979978	0.8281	0.151878	0.8222	0.92	1.05	0.12697	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.9	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.836637	0.163363	0.82646	0.92	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.9	1.05	0.18498	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979446	0.819433	0.160013	0.82646	0.92	1.05	0.18498	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.92	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.9	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977049	0.817197	0.159852	0.8222	0.92	1.05	0.05131	'DGRASSE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.9	1.05	0.18498	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979376	0.817503	0.161873	0.82646	0.92	1.05	0.18498	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04627	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.987162	0.910238	0.0769238	0.92088	0.92	1.05	0.04627	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.9	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.978266	0.893785	0.0844807	0.90675	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.92	1.05	0.121	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.986232	0.900301	0.0859318	0.92088	0.9	1.05	0.121	'FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.121	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.121	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.92	1.05	0.121	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.985461	0.899471	0.0859894	0.92088	0.9	1.05	0.121	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977613	0.885503	0.0921104	0.90675	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCUMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.9	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979812	0.89295	0.086862	0.90675	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.98017	0.82876	0.15141	0.8222	0.9	1.05	0.05432	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.98017	0.82876	0.15141	0.8222	0.92	1.05	0.05432	'G15063_T 345.00 - MATHWSN7 345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.980556	0.829315	0.151241	0.8222	0.9	1.05	0.05432	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.980556	0.829315	0.151241	0.8222	0.92	1.05	0.05432	'G15063_T 345.00 - WOODRING 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.97636	0.814802	0.161557	0.8222	0.9	1.05	0.03627	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.97636	0.814802	0.161557	0.8222	0.92	1.05	0.03627	'G15066_T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172									

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.975301	0.810651	0.16465	0.8222	0.9	1.05	0.0528	'G16-050-TAP 345.00 - POST ROCK 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.975301	0.810651	0.16465	0.8222	0.92	1.05	0.0528	'G16-050-TAP 345.00 - POST ROCK 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.832428	0.167572	0.82646	0.9	1.05	0.04869	'G16-063-TAP 345.00 - HUGO 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.832428	0.167572	0.82646	0.92	1.05	0.04869	'G16-063-TAP 345.00 - HUGO 345KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.983544	0.911925	0.0716185	0.92088	0.92	1.05	0.05669	'G16-091-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97532	0.893634	0.081686	0.90675	0.9	1.05	0.05508	'G16-091-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97532	0.893634	0.081686	0.90675	0.92	1.05	0.05508	'G16-091-TAP 345.00 - GRACEMONT 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.973522	0.843626	0.129896	0.90675	0.9	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.973522	0.843626	0.129896	0.90675	0.92	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	1.00709	0.914137	0.0929529	0.95798	0.92	1.05	0.06746	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	1.007522	0.919352	0.0881696	0.9614	0.92	1.05	0.0675	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CRT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978103	0.821039	0.157065	0.82646	0.9	1.05	0.10674	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978103	0.821039	0.157065	0.82646	0.92	1.05	0.10674	'GEN515040 1-SEMINOLE 1G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.977351	0.820663	0.156688	0.82646	0.9	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.977351	0.820663	0.156688	0.82646	0.92	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.97735	0.820662	0.156688	0.82646	0.9	1.05	0.10674	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.97735	0.820662	0.156688	0.82646	0.92	1.05	0.10674	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.977115	0.819607	0.157508	0.82646	0.9	1.05	0.10674	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.977115	0.819607	0.157508	0.82646	0.92	1.05	0.10674	'GEN515226 1-MUSKOGEE 6G'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.975208	0.813641	0.161567	0.82646	0.9	1.05	0.04869	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.975208	0.813641	0.161567	0.82646	0.92	1.05	0.04869	'GEN520947 1-HUGO1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.984823	0.911952	0.0728713	0.90675	0.92	1.05	0.11254	'GEN531447 1-HOLCOMB GENERATOR'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976438	0.814608	0.161829	0.8222	0.9	1.05	0.04716	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976438	0.814608	0.161829	0.8222	0.92	1.05	0.04716	'GERALD GENTLEMAN STATION - RED WILLOW 345KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.876701	0.123299	0.92088	0.9	1.05	0.09045	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.876701	0.123299	0.92088	0.92	1.05	0.09045	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.876701	0.123299	0.92088	0.9	1.05	0.09045	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.876701	0.123299	0.92088	0.92	1.05	0.09045	'GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.890525	0.109475	0.92088	0.9	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.890525	0.109475	0.92088	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.890525	0.109475	0.92088	0.9	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	1	0.890525	0.109475	0.92088	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977128	0.814278	0.16285	0.8222	0.9	1.05	0.04661	'HAPPY INTERCHANGE - PALO DURO SUB 115KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977128	0.814278	0.16285	0.8222	0.92	1.05	0.04661	'HAPPY INTERCHANGE - PALO DURO SUB 115KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976938	0.812879	0.164059	0.8222	0.9	1.05	0.04661	'HAPPY INTERCHANGE - TULLIA TAP 115KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976938	0.812879	0.164059	0.8222	0.92	1.05	0.04661	'HAPPY INTERCHANGE - TULLIA TAP 115KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980682	0.898006	0.0826756	0.90675	0.9	1.05	0.04741	'HAPPY INTERCHANGE - TULLIA TAP 115KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980682	0.898006	0.0826756	0.90675	0.92	1.05	0.04741	'HAPPY INTERCHANGE - TULLIA TAP 115KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.98769	0.906372	0.0813183	0.92088	0.92	1.05	0.08543	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.98769	0.906372	0.0813183	0.92088	0.9	1.05	0.08543	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97853	0.88221	0.0963194	0.90675	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CRT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.9	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 17WP	G16_172	'OKLAUNION 345KV'	0.991104	0.876221	0.114882	0.95614	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 18SP	G16_172	'OKLAUNION 345KV'	0.990534	0.877982	0.112552	0.95974	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	1.006502	0.904835	0.101667	0.95798	0.92	1.05	0.14483	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	1.006502	0.904835	0.101667	0.95798	0.9	1.05	0.14483	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	1.006035	0.909957	0.096078	0.9614	0.92	1.05	0.15817	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	1.006035	0.909957	0.096078	0.9614	0.9	1.05	0.15817	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.9	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.977909	0.874351	0.103559	0.90675	0.92	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.92	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976704	0.81164	0.165064	0.8222	0.92	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CRT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CRT 2'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.976473	0.805044	0.17143	0.8222	0.92	1.05	0.07	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979862	0.899665	0.0801972	0.90675	0.92	1.05	0.06882	HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.9	1.05	0.04115	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.92	1.05	0.04115	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.9	1.05	0.04115	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.833947	0.166053	0.82646	0.92	1.05	0.04115	HUGO - VALLIANT 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.03913	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.03913	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.9	1.05	0.03913	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.97558	0.815643	0.159937	0.8222	0.92	1.05	0.03913	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.9	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979107	0.816432	0.162675	0.82646	0.92	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.819359	0.180641	0.82646	0.9	1.05	0.04564	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	1	0.819359	0.180641	0.82646	0.92	1.05	0.04564	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979453	0.821333	0.15812	0.82646	0.9	1.05	0.15608	KRESS INTERCHANGE - NEHWART 115KV CKT 1'
FDNSLock	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979453	0.821333	0.15812	0.82646	0.92	1.05	0.15608	KRESS INTERCHANGE - NEHWART 115KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.976805	0.81098	0.165825	0.8222	0.9	1.05	0.04661	KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.976805	0.81098	0.165825	0.8222	0.92	1.05	0.04661	KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.980617	0.897165	0.0834525	0.90675	0.9	1.05	0.04741	KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.980617	0.897165	0.0834525	0.90675	0.92	1.05	0.04741	KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.9	1.05	0.18498	MAJESTIC WIND 115KV SWITCHED SHUNT
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979428	0.81842	0.161008	0.82646	0.92	1.05	0.18498	MAJESTIC WIND 115KV SWITCHED SHUNT
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.97925	0.821374	0.157877	0.82646	0.9	1.05	0.03325	MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.97925	0.821374	0.157877	0.82646	0.92	1.05	0.03325	MANHATTAN SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.9	1.05	0.08422	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979316	0.835085	0.144231	0.82646	0.92	1.05	0.08422	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.97792	0.883217	0.0947028	0.92088	0.9	1.05	0.10858	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.97792	0.883217	0.0947028	0.92088	0.92	1.05	0.10858	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979085	0.897751	0.0813341	0.90675	0.9	1.05	0.07524	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979085	0.897751	0.0813341	0.90675	0.92	1.05	0.07524	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979089	0.897753	0.0813365	0.90675	0.9	1.05	0.07519	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979089	0.897753	0.0813365	0.90675	0.92	1.05	0.07519	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.988892	0.915639	0.0732526	0.92088	0.9	1.05	0.06531	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.988892	0.915639	0.0732526	0.92088	0.92	1.05	0.06531	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.92	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.9	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973549	0.794935	0.178614	0.8222	0.92	1.05	0.05967	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.9	1.05	0.07039	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979965	0.90059	0.0793747	0.90675	0.92	1.05	0.07039	MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.988788	0.915697	0.0730912	0.92088	0.9	1.05	0.06558	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.9	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0 21L	G16_172	G16_172	'OKLAUNION 345KV'	0.973884	0.793592	0.180292	0.8222	0.92	1.05	0.05817	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.9	1.05	0.06954	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.979468	0.898575	0.0808927	0.90675	0.92	1.05	0.06954	MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.9	1.05	0.07392	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.987334	0.907085	0.080249	0.92088	0.92	1.05	0.07392	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.98162	0.900538	0.081082	0.90675	0.9	1.05	0.1951	MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT
FDNSLock	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.981681	0.900667	0.081614	0.90675	0.92	1.05	0.1951	MOORE COUNTY INTERCHANGE W. 115KV SWITCHED SHUNT
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.9	1.05	0.19309	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.988955	0.912257	0.0766981	0.92088	0.92	1.05	0.19309	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.19226	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.92	1.05	0.19226	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.9	1.05	0.19226	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.97774	0.875078	0.102662	0.90675	0.92	1.05	0.19226	NEHWART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979856	0.815229	0.164628	0.82646	0.9	1.05	0.21259	NEHWART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0 21WP	G16_172	G16_172	'OKLAUNION 345KV'	0.979856	0.815229	0.164628	0.82646	0.92	1.05	0.21259	NEHWART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0 17WP	G16_172	G16_172	'OKLAUNION 345KV'	0.946178	0.889597	0.0565816	0.95614	0.9	1.05	0.20456	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 17WP	G16_172	G16_172	'OKLAUNION 345KV'	0.946178	0.889597	0.0565816	0.95614	0.92	1.05	0.20456	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 17WP	G16_172	G16_172	'OKLAUNION 345KV'	0.946013	0.885498	0.0605144	0.95614	0.9	1.05	0.20456	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 17WP	G16_172	G16_172	'OKLAUNION 345KV'	0.946013	0.885498	0.0605144	0.95614	0.92	1.05	0.20456	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.924076	0.840754	0.0832216	0.92088	0.9	1.05	0.19827	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.924076	0.840754	0.0832216	0.92088	0.92	1.05	0.19827	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.9	1.05	0.19827	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 18G	G16_172	G16_172	'OKLAUNION 345KV'	0.922008	0.84084	0.081168	0.92088	0.92	1.05	0.19827	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 18SP	G16_172	G16_172	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.9	1.05	0.1969	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 18SP	G16_172	G16_172	'OKLAUNION 345KV'	0.946782	0.893924	0.0528573	0.95974	0.92	1.05	0.1969	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 18SP	G16_172	G16_172	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.9	1.05	0.1969	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNSLock	06ALL	0 18SP	G16_172	G16_172	'OKLAUNION 345KV'	0.946783	0.893938	0.0528443	0.95974	0.92	1.05	0.1969	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FDNS	06ALL	0 21SP	G16_172	G16_172	'OKLAUNION 345KV'	0.916689	0.814681	0.102008	0.90675	0.9	1.05	0.1951	OKLAUN HVDC7345.00 345KV SWITCHED SHUNT
FD													

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	0.956337	0.88633	0.0700077	0.95798	0.92	1.05	0.10671	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21SP	G16_172	'OKLAUNION 345KV'	0.952946	0.916513	0.0364331	0.98214	0.92	1.05	0.13339	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21SP	G16_172	'OKLAUNION 345KV'	0.952947	0.916475	0.0364715	0.98214	0.92	1.05	0.13339	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21WP	G16_172	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.9	1.05	0.12719	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		2 21WP	G16_172	'OKLAUNION 345KV'	0.951571	0.894921	0.0566496	0.96111	0.92	1.05	0.12719	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21WP	G16_172	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.9	1.05	0.12719	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		2 21WP	G16_172	'OKLAUNION 345KV'	0.951571	0.89492	0.0566508	0.96111	0.92	1.05	0.12719	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 18G	G16_172	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.13622	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 18G	G16_172	'OKLAUNION 345KV'	0.958288	0.919855	0.0384333	0.98611	0.92	1.05	0.13622	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.9	1.05	0.10718	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21L	G16_172	'OKLAUNION 345KV'	0.956855	0.890896	0.0659589	0.9614	0.92	1.05	0.10718	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21SP	G16_172	'OKLAUNION 345KV'	0.952924	0.917157	0.0357668	0.98247	0.92	1.05	0.13378	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21SP	G16_172	'OKLAUNION 345KV'	0.952923	0.917124	0.0357989	0.98247	0.92	1.05	0.13378	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21WP	G16_172	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.9	1.05	0.12762	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		3 21WP	G16_172	'OKLAUNION 345KV'	0.952209	0.89803	0.0541791	0.96317	0.92	1.05	0.12762	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21WP	G16_172	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.9	1.05	0.12762	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		3 21WP	G16_172	'OKLAUNION 345KV'	0.952209	0.898029	0.0541806	0.96317	0.92	1.05	0.12762	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977081	0.813916	0.163165	0.8222	0.9	1.05	0.04661	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977081	0.813916	0.163165	0.8222	0.92	1.05	0.04661	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.9	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.978901	0.82114	0.15776	0.82646	0.92	1.05	0.03505	'PITTSBURG - VALLIANT 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.92	1.05	0.0662	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.988473	0.914204	0.0742686	0.92088	0.9	1.05	0.0662	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.974604	0.799203	0.175401	0.8222	0.92	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.9	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.9795	0.899597	0.0799036	0.90675	0.92	1.05	0.06801	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.9	1.05	0.0947	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNSLock	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.977662	0.843115	0.134547	0.92088	0.92	1.05	0.0947	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21L	G16_172	'OKLAUNION 345KV'	1.009207	0.908781	0.100426	0.95798	0.92	1.05	0.07916	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		2 21WP	G16_172	'OKLAUNION 345KV'	1.005411	0.919559	0.0858518	0.96111	0.92	1.05	0.09385	'POTTER COUNTY INTERCHANGE - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.990339	0.913309	0.0770302	0.92088	0.92	1.05	0.13199	'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.990339	0.913309	0.0770302	0.92088	0.92	1.05	0.13199	'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980787	0.899752	0.0810347	0.90675	0.9	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980787	0.899752	0.0810347	0.90675	0.92	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980787	0.899752	0.0810347	0.90675	0.9	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980787	0.899752	0.0810347	0.90675	0.92	1.05	0.03193	'PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.9	1.05	0.18498	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979458	0.819737	0.159721	0.82646	0.92	1.05	0.18498	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.9	1.05	0.18498	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	1	0.832924	0.167076	0.82646	0.92	1.05	0.18498	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.9	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.980008	0.875647	0.104361	0.92088	0.92	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.9	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.979984	0.875364	0.10462	0.92088	0.92	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.99073	0.919197	0.071533	0.90675	0.92	1.05	0.11101	'SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.95	1.05	0.19827	'System Intact'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.991068	0.920877	0.0701906	0.92088	0.95	1.05	0.19827	'System Intact'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977732	0.822204	0.155528	0.8222	0.95	1.05	0.15597	'System Intact'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977732	0.822204	0.155528	0.8222	0.95	1.05	0.15597	'System Intact'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.906754	0.0751818	0.90675	0.95	1.05	0.1951	'System Intact'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981936	0.906754	0.0751818	0.90675	0.95	1.05	0.1951	'System Intact'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979428	0.826461	0.152967	0.82646	0.95	1.05	0.18498	'System Intact'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.983219	0.892855	0.0903648	0.92088	0.9	1.05	0.10858	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'OKLAUNION 345KV'	0.983219	0.892855	0.0903648	0.92088	0.92	1.05	0.10858	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97996	0.896559	0.0834011	0.90675	0.9	1.05	0.07514	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.97996	0.896559	0.0834011	0.90675	0.92	1.05	0.07514	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.9	1.05	0.07529	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.979946	0.896428	0.0835176	0.90675	0.92	1.05	0.07529	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980232	0.8849	0.095332	0.90675	0.9	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980232	0.8849	0.095332	0.90675	0.92	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.92	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'OKLAUNION 345KV'	0.977863	0.804121	0.173742	0.8222	0.92	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.9	1.05	0.18498	'TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21WP	G16_172	'OKLAUNION 345KV'	0.979639	0.833426	0.146213	0.82646	0.92	1.05	0.18498	'TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT'

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.13432	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.13432	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.13432	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.981408	0.900403	0.0810054	0.90675	0.92	1.05	0.13432	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2'
FDNSLock	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980323	0.90143	0.0788932	0.90675	0.92	1.05	0.1951	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_172	'OKLAUNION 345KV'	0.980313	0.901231	0.0790821	0.90675	0.92	1.05	0.1951	TUCO INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.19226	System Intact
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 230KV'	0.988591	0.940005	0.0485861	0.94	0.95	1.05	0.19226	System Intact
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 230KV'	0.999107	0.920025	0.0790821	0.92003	0.95	1.05	0.19013	System Intact
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976353	0.891233	0.0851195	0.91598	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	1	0.888072	0.111928	0.88217	0.9	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978173	0.899788	0.0783843	0.91598	0.9	1.05	0.03109	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976707	0.895245	0.0814623	0.91598	0.9	1.05	0.09582	'BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976783	0.894322	0.0824615	0.91598	0.9	1.05	0.09582	'BUSHLAND INTERCHANGE 230KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.98763	0.874154	0.113476	0.88217	0.9	1.05	0.08928	'CARLSLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	1	0.891394	0.108606	0.88217	0.9	1.05	0.08928	'CLARKCOUNTY7345.00 345KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.98772	0.87598	0.11174	0.88217	0.9	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976402	0.896065	0.0803373	0.91598	0.9	1.05	0.05903	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	1	0.890089	0.109911	0.88217	0.9	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987702	0.875053	0.112649	0.88217	0.9	1.05	0.08928	'CURRY COUNTY INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.98753	0.873304	0.114226	0.88217	0.9	1.05	0.08928	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.984866	0.888783	0.096083	0.8984	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.984866	0.888783	0.096083	0.8984	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978239	0.895983	0.0822566	0.91598	0.9	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.97696	0.893675	0.0832849	0.91598	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.97696	0.893675	0.0832849	0.91598	0.9	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978413	0.890377	0.0880352	0.91598	0.9	1.05	0.13337	'Hitchland Interchange - WALKMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.091233	0.8984	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983541	0.892308	0.091233	0.8984	0.9	1.05	0.06369	'Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983428	0.888283	0.0951456	0.8984	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983981	0.890938	0.0930426	0.8984	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987666	0.873533	0.114132	0.88217	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	1	0.873377	0.126623	0.88217	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987624	0.876559	0.111066	0.88217	0.9	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983794	0.892739	0.0910549	0.8984	0.9	1.05	0.04661	'KRESS INTERCHANGE - JULIA TAP 115KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.873885	0.113808	0.88217	0.9	1.05	0.08928	'MAJESTIC WIND 115KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987989	0.890881	0.0971085	0.88217	0.9	1.05	0.08422	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.984351	0.890191	0.0941604	0.8984	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983824	0.887861	0.0959628	0.8984	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.976983	0.887273	0.0897102	0.91598	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.98725	0.869354	0.117895	0.88217	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.977311	0.890959	0.0863523	0.91598	0.9	1.05	0.09582	'OKLAUN HVDC7345.00 345KV SWITCHED SHUNT'
FDNSLock	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987505	0.87501	0.112495	0.88217	0.9	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983915	0.889376	0.0945387	0.8984	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.965518	0.875183	0.0903352	0.91598	0.9	1.05	0.13873	'POTTER COUNTY INTERCHANGE (WALK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.965518	0.875183	0.0903352	0.91598	0.9	1.05	0.13873	'POTTER COUNTY INTERCHANGE (WALK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987718	0.875335	0.112383	0.88217	0.9	1.05	0.08928	'ROOSEVELT COUNTY REC-PORTALES INTERCHANGE 69KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	1	0.887851	0.112149	0.88217	0.9	1.05	0.08928	'SEMINOLE GAS 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.07842	System Intact
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983989	0.898396	0.0855923	0.8984	0.95	1.05	0.07842	System Intact
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.09582	System Intact
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978837	0.915982	0.0628554	0.91598	0.95	1.05	0.09582	System Intact
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.987692	0.882171	0.105522	0.88217	0.95	1.05	0.08928	System Intact
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978713	0.886244	0.0924695	0.91598	0.9	1.05	0.14968	'TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.978713	0.886244	0.0924695	0.91598	0.9	1.05	0.14968	'TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983851	0.887131	0.0967205	0.8984	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21L	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.983851	0.887131	0.0967205	0.8984	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21WIP	G16_172	'POTTER COUNTY INTERCHANGE 345KV'	0.98811	0.888961	0.0991488	0.88217	0.9	1.05	0.08928	'TOLK STATION TFM TERTIARY 13KV SWITCHED SHUNT'
FDNS	06ALL		0 21WIP	G16_									

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991221	0.912006	0.0792154	0.91779	0.92	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991273	0.912663	0.07861	0.91779	0.92	1.05	0.05631	'G15066 T 345.00 - SOONER 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.989353	0.912742	0.076611	0.91779	0.92	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.989352	0.912741	0.0766112	0.91779	0.92	1.05	0.10674	'GEN515225 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.988367	0.910602	0.077765	0.91779	0.92	1.05	0.04869	'GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 115KV'	1	0.919853	0.0801467	0.95684	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 115KV'	0.989856	0.918476	0.07138	0.94503	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 115KV'	0.978742	0.903583	0.0751592	0.97238	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 115KV'	0.990367	0.916864	0.0735025	0.94503	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 115KV'	0.990367	0.916864	0.0735025	0.94503	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991653	0.911222	0.0804307	0.91779	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991653	0.911222	0.0804307	0.91779	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	1	0.911987	0.0880125	0.91779	0.92	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991685	0.912238	0.079447	0.91779	0.92	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.991717	0.905061	0.0865559	0.91779	0.92	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'SHAMROCK 115KV'	0.990916	0.909909	0.0810071	0.91779	0.92	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 115KV'	0.975588	0.910931	0.0646564	0.95684	0.92	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 115KV'	0.974107	0.911925	0.062182	0.95684	0.92	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 138KV'	0.973572	0.899847	0.0737244	0.98078	0.9	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 138KV'	0.973572	0.899847	0.0737244	0.98078	0.9	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	1	0.915479	0.0845211	0.90842	0.92	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.08294	'BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.969165	0.903343	0.0658212	0.90842	0.92	1.05	0.08294	'BADGER 345.00 - BVRCNTY7 345.00 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.95464	0.915326	0.0393143	0.9309	0.92	1.05	0.03109	'BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972962	0.912699	0.060263	0.9309	0.92	1.05	0.09952	'BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.953587	0.919037	0.0345504	0.9309	0.92	1.05	0.13678	'BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.964692	0.908186	0.0567757	0.9309	0.92	1.05	0.04599	'CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'SHAMROCK 69KV'	0.967834	0.914151	0.053683	0.96076	0.92	1.05	0.11441	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.9	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 69KV'	0.935544	0.857635	0.0779092	0.94142	0.9	1.05	0.11021	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.971364	0.905931	0.0654329	0.9309	0.92	1.05	0.09381	'CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.9702	0.902855	0.0673447	0.90842	0.92	1.05	0.05631	'CLEVELAND - G15066 T 345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.954453	0.918686	0.0357667	0.9309	0.92	1.05	0.05903	'CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	1	0.916379	0.0836212	0.90842	0.92	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.965145	0.908408	0.0567365	0.9309	0.92	1.05	0.04599	'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972073	0.913508	0.0585645	0.9309	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.953483	0.915549	0.0379336	0.9309	0.92	1.05	0.11254	'FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.97221	0.912887	0.0593234	0.9309	0.92	1.05	0.09381	'G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.955257	0.910689	0.0445682	0.9309	0.92	1.05	0.05508	'G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.9685	0.903615	0.0648848	0.90842	0.92	1.05	0.10674	'GEN515223 1-MUSKOGEE 4G'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.9685	0.903615	0.0648848	0.90842	0.92	1.05	0.10674	'GEN515223 1-MUSKOGEE 5G'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.967541	0.901347	0.061935	0.90842	0.92	1.05	0.04869	'GEN520947 1-HUGOI'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 69KV'	1	0.90884	0.0911602	0.94142	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 18G	G16_172	'SHAMROCK 69KV'	1	0.90884	0.0911602	0.94142	0.92	1.05	0.0933	'GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972097	0.906409	0.0656882	0.9309	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972097	0.906409	0.0656882	0.9309	0.92	1.05	0.08879	'HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 17WP	G16_172	'SHAMROCK 69KV'	0.968371	0.91917	0.049201	0.96076	0.92	1.05	0.23654	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.9	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 18SP	G16_172	'SHAMROCK 69KV'	0.960855	0.892254	0.0686008	0.95493	0.92	1.05	0.23798	'Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21SP	G16_172	'SHAMROCK 69KV'	0.972539	0.904676	0.067863	0.9309	0.92	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.970611	0.902157	0.0684541	0.90842	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.970611	0.902157	0.0684541	0.90842	0.92	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	1	0.902947	0.0970531	0.90842	0.92	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL		0 21WP	G16_172	'SHAMROCK 69KV'	0.970644	0.903323	0.0673218	0.90842	0.92	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL		0 21WP	G16_									

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	18G	G16_172	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.9	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'SHAMROCK 69KV'	0.956806	0.896055	0.0607513	0.94142	0.92	1.05	0.11021	'STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.9	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'SHAMROCK 69KV'	0.955513	0.89688	0.0586327	0.94142	0.92	1.05	0.11021	'STLN-DEMARC6 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	18G	G16_172	'SHAMROCK 69KV'	0.961202	0.917197	0.0440053	0.94142	0.92	1.05	0.10858	'TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SHAMROCK 69KV'	0.954056	0.912626	0.0414308	0.9309	0.92	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SHAMROCK 69KV'	0.954056	0.912626	0.0414308	0.9309	0.92	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPEARMAN INTERCHANGE 115KV'	0.995632	0.945253	0.050379	0.94525	0.95	1.05	0.03036	'System Intact
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.982593	0.897976	0.0846166	0.92273	0.9	1.05	0.12254	'AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	1	0.895314	0.104686	0.88941	0.9	1.05	0.08106	'ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.992226	0.883218	0.109008	0.88941	0.9	1.05	0.05631	'CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	1	0.897333	0.102667	0.88941	0.9	1.05	0.15508	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.989488	0.897723	0.0917648	0.90737	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.984341	0.897121	0.0872204	0.92273	0.9	1.05	0.13337	'Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.091046	0.90737	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988267	0.897221	0.091046	0.90737	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988736	0.899886	0.0888499	0.90737	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.99218	0.880769	0.11141	0.88941	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	1	0.880613	0.119387	0.88941	0.9	1.05	0.04564	'JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.992144	0.883795	0.108349	0.88941	0.9	1.05	0.15608	'KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.992454	0.898125	0.0943297	0.88941	0.9	1.05	0.08422	'MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.989051	0.899136	0.0899147	0.90737	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988603	0.896797	0.091805	0.90737	0.9	1.05	0.05817	'MINGO - SETAB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.983128	0.894015	0.0891131	0.92273	0.9	1.05	0.19226	'NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.991826	0.876587	0.115239	0.88941	0.9	1.05	0.21259	'NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.992043	0.882246	0.109797	0.88941	0.9	1.05	0.04261	'PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.98868	0.898318	0.0903616	0.90737	0.9	1.05	0.05531	'POST ROCK - SPEARVILLE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.972278	0.881922	0.0903562	0.92273	0.9	1.05	0.13873	'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.972278	0.881922	0.0903562	0.92273	0.9	1.05	0.13873	'POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.984596	0.892986	0.0916106	0.92273	0.9	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	'SPNSPUR_WND7345.00 345KV'	0.984596	0.892986	0.0916106	0.92273	0.9	1.05	0.14968	'TOLK STATION (ABXN1844501) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'SPNSPUR_WND7345.00 345KV'	0.988626	0.896065	0.0925612	0.90737	0.9	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_172	'STATELINE INTERCHANGE 115KV'	1.021039	1.075547	0.0545086	1.02261	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_172	'STATELINE INTERCHANGE 230KV'	1.021124	1.069772	0.048648	1.01641	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.07286	'System Intact
FDNS	06ALL	0	21L	G16_172	'STATELINE INTERCHANGE 230KV'	0.99405	0.949323	0.0447277	0.94932	0.95	1.05	0.07286	'System Intact
FDNS	06ALL	0	21WP	G16_172	'STATELINE INTERCHANGE 230KV'	0.999138	0.921867	0.0772707	0.92187	0.95	1.05	0.08756	'System Intact
FDNSLock	06ALL	2	18SP	G16_172	'STLN-DEMARC6 230KV'	1.020763	1.077596	0.0568331	1.01717	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'STLN-DEMARC6 230KV'	1.003486	0.940168	0.0633178	0.94017	0.95	1.05	0.10344	'System Intact
FDNSLock	06ALL	2	18SP	G16_172	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.9	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNSLock	06ALL	2	18SP	G16_172	'SWEETWATER 230KV'	1.020581	1.080356	0.0597756	1.01723	0.92	1.05	0.07151	'CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'SWEETWATER 230KV'	1.005199	0.94769	0.0575091	0.94769	0.95	1.05	0.10344	'System Intact
FDNS	06ALL	0	21WP	G16_172	'SWISHER COUNTY INTERCHANGE 230KV'	1.012937	0.937979	0.0749583	0.93798	0.95	1.05	0.21259	'System Intact
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 230KV'	0.998884	0.916269	0.0826147	0.93709	0.925	1.05	0.03274	'TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'TUCO INTERCHANGE 345KV'	0.986669	0.896838	0.0898305	0.90252	0.9	1.05	0.12986	'CARLISLE INTERCHANGE 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.986994	0.898432	0.088562	0.89054	0.9	1.05	0.12697	'CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21WP	G16_172	'TUCO INTERCHANGE 345KV'	0.987166	0.897297	0.0898693	0.90252	0.9	1.05	0.12986	'EAST LIBERAL 115KV SWITCHED SHUNT'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980216	0.876868	0.103349	0.89054	0.9	1.05	0.07129	'G16-003-TAP 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980992	0.88534	0.095652	0.89054	0.9	1.05	0.06369	'Hitchland Interchange (H T880155502) 345/230/13.2KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980868	0.881642	0.099226	0.89054	0.9	1.05	0.07322	'Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980518	0.881673	0.0988449	0.89054	0.9	1.05	0.0564	'HOLCOMB - SETAB 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	'TUCO INTERCHANGE 345KV'	0.987174	0.897474	0.0896999	0.90252	0.9	1.05	0.04404	'JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980978	0.884795	0.0961837	0.89054	0.9	1.05	0.04661	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.980032	0.878261	0.101771	0.89054	0.9	1.05	0.05967	'MINGO - RED WILLOW 345KV CKT 1'
FDNS	06ALL	0	21L	G16_172	'TUCO INTERCHANGE 345KV'	0.98007	0.87691	0.10316	0.89054	0.9	1.05	0.05817	'MINGO - SETAB 345KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	MONITORED ELEMENT	BC Voltage (PU)	TC Voltage (PU)	Voltage Differ (PU)	VINIT (PU)	VMIN (PU)	VMAX(PU)	TDF	CONTINGENCY
FDNS	06ALL	0	21L	G16_172	TUCO INTERCHANGE 345KV'	0.981518	0.890541	0.0909774	0.89054	0.95	1.05	0.11676	System Intact
FDNS	06ALL	0	21WP	G16_172	TUCO INTERCHANGE 345KV'	0.987203	0.902522	0.0846803	0.90252	0.95	1.05	0.12986	System Intact
FDNS	06ALL	0	21L	G16_172	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	TUCO INTERCHANGE 345KV'	0.981181	0.872153	0.109028	0.89054	0.9	1.05	0.03274	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21L	G16_172	WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.10457	System Intact
FDNS	06ALL	0	21L	G16_172	WALKEMEYER 7345.00 345KV'	1.005839	0.925723	0.0801159	0.92572	0.95	1.05	0.10457	System Intact
FDNS	06ALL	0	21WP	G16_172	WALKEMEYER 7345.00 345KV'	1.007796	0.942456	0.0653399	0.94246	0.95	1.05	0.12649	System Intact
FDNS	06ALL	0	18G	G16_172	WELLINGTON 138KV'	0.974511	0.90498	0.0695304	0.98387	0.92	1.05	0.11021	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.12254	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956365	0.868911	0.087454	0.88972	0.9	1.05	0.12254	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	1	0.893351	0.106649	0.88805	0.9	1.05	0.08106	ARCADIA - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.95668	0.872255	0.0844254	0.88972	0.9	1.05	0.03109	BORDER 7345.00 - CHISHOLM7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.959633	0.883308	0.0763254	0.88972	0.9	1.05	0.08273	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956376	0.88327	0.0731058	0.88972	0.9	1.05	0.07534	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.957466	0.87909	0.0783766	0.88972	0.9	1.05	0.09952	BVRCNTY7 345.00 - CLARKCOUNTY7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956513	0.880845	0.0756685	0.88972	0.9	1.05	0.13678	BVRCNTY7 345.00 - Hitchland Interchange 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.95559	0.882665	0.0729249	0.88972	0.9	1.05	0.04599	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955598	0.874507	0.0810914	0.88972	0.9	1.05	0.09381	CHISHOLM7 345.00 - G16-037-TAP 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.954336	0.873399	0.080937	0.88972	0.9	1.05	0.13028	CIMARRON - MINCO 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989832	0.882469	0.107363	0.88805	0.9	1.05	0.05631	CLEVELAND - G15066_T 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.959594	0.873539	0.0824149	0.88972	0.9	1.05	0.05903	CRAWFISH_DR 345.00 - TOLK STATION 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	1	0.894915	0.105085	0.88805	0.9	1.05	0.15508	CRAWFISH_DR 345.00 - TUCO INTERCHANGE 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04599	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955599	0.882803	0.0727955	0.88972	0.9	1.05	0.04599	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.11254	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.957415	0.877042	0.0803725	0.88972	0.9	1.05	0.11254	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.11254	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.95693	0.878509	0.0784206	0.88972	0.9	1.05	0.11254	FINNEY SWITCHING STATION - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955246	0.877048	0.0781975	0.88972	0.9	1.05	0.09381	G16-037-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956451	0.881292	0.0751584	0.88972	0.9	1.05	0.05508	G16-091-TAP 345.00 - GRACEMONT 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.95642	0.868502	0.0879176	0.88972	0.9	1.05	0.05508	G16-091-TAP 345.00 - LAWTON EASTSIDE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955979	0.884514	0.0714648	0.88972	0.9	1.05	0.03795	GEN542962 2-IATAN UNIT #2'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955566	0.884194	0.071372	0.88972	0.9	1.05	0.07039	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955134	0.874023	0.0811113	0.88972	0.9	1.05	0.13028	GRACEMONT - MINCO 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956775	0.879914	0.0768608	0.88972	0.9	1.05	0.04741	HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956191	0.884566	0.0716253	0.88972	0.9	1.05	0.03594	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956191	0.884566	0.0716253	0.88972	0.9	1.05	0.03594	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.08879	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956672	0.870278	0.0863944	0.88972	0.9	1.05	0.08879	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	18SP	G16_172	XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.23798	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	18SP	G16_172	XIT_INTG 6230.00 230KV'	0.959728	0.863529	0.0961992	0.95609	0.9	1.05	0.23798	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.13337	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956676	0.858011	0.0986656	0.88972	0.9	1.05	0.13337	Hitchland Interchange - WALKEMEYER 7345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989785	0.880315	0.10947	0.88805	0.9	1.05	0.04404	JOHNSON COUNTY - PITTSBURG 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	1	0.880141	0.119859	0.88805	0.9	1.05	0.04564	JOHNSON COUNTY - SUNNYSIDE 345KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989736	0.88302	0.106716	0.88805	0.9	1.05	0.15608	KRESS INTERCHANGE - NEWHART 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956765	0.878649	0.0781164	0.88972	0.9	1.05	0.04741	KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955292	0.873096	0.0821962	0.88972	0.9	1.05	0.11101	LAWTON EASTSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.990057	0.895858	0.0941991	0.88805	0.9	1.05	0.08422	MATHWSN7 345.00 - NORTHWEST 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.19226	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.957742	0.865479	0.0922633	0.88972	0.9	1.05	0.19226	NEWHART 230 - POTTER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989179	0.876551	0.112629	0.88805	0.9	1.05	0.21259	NEWHART 230 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
FDNSLock	06ALL	0	21WP	G16_172	XIT_INTG 6230.00 230KV'	0.989529	0.881441	0.108088	0.88805	0.9	1.05	0.04261	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955255	0.880359	0.0748964	0.88972	0.9	1.05	0.03193	PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.955255	0.880359	0.0748964	0.88972	0.9	1.05	0.03193	PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.954897	0.874378	0.0805191	0.88972	0.9	1.05	0.11101	SUNNYSIDE - TERRYRD7 345.00 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956892	0.881898	0.0749943	0.88972	0.9	1.05	0.07514	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1'
FDNS	06ALL	0	21SP	G16_172	XIT_INTG 6230.00 230KV'	0.956884	0.88173	0.0751533	0.88972	0.9	1.05	0.07529	TATONGA7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2'
FDNS	06ALL	0	21SP	G16_172									

Southwest Power Pool, Inc.

*H-T: THERMAL POWER FLOW ANALYSIS (OTHER CONSTRAINTS NOT
REQUIRING TRANSMISSION REINFORCEMENT)*

Available upon request

Southwest Power Pool, Inc.

*H-T-AS: AFFECTED SYSTEM THERMAL POWER FLOW ANALYSIS (CONSTRAINTS
FOR POTENTIAL UPGRADES)*

Available upon request

Southwest Power Pool, Inc.

*H-V-AS: AFFECTED SYSTEM VOLTAGE POWER FLOW ANALYSIS (CONSTRAINTS
FOR POTENTIAL UPGRADES)*

Available upon request

I: DYNAMIC STABILITY ANALYSIS REPORTS

I: GROUP 6 DYNAMIC STABILITY ANALYSIS REPORT

Southwest Power Pool, Inc. (SPP)

DISIS-2016-002-1 (Group 06) Definitive Impact Study

Final Report

**REP-0518
Revision #01**

April 2019

**Submitted By:
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Report Revision Table

Revision	Reason for Revision	Date	Author
1	Issued Final Report	4/26/2019	NWT

Title: DISIS-2016-002-1 (Group 06) Definitive Impact Study: Final Report REP-0518
Date: April 2019
Author: Nicholas W. Tenza; Senior Engineer, Power Systems Engineering Division Nicholas W. Tenza
Approved: Donald J. Shoup; General Manager, Power Systems Engineering Division Donald J. Shoup

EXECUTIVE SUMMARY

SPP requested a Definitive Interconnection System Impact Study (DISIS). The DISIS required a Stability Analysis and a Short Circuit Analysis detailing the impacts of the interconnecting projects as shown in Table ES-1.

**Table ES-1
Interconnection Projects Evaluated**

Request	Size (MW)	Generator Model	Point of Interconnection
ASGI-2016-009	3	Wind (588472)	Wolfforth Substation 115kV (526481)
GEN-2015-099	73.26	Solar (587673)	Maddox 115kV (528355)
GEN-2016-121	110	Solar (587993)	Roadrunner 115kV (528025)
GEN-2016-123	298	Wind (588003, 588006)	Crossroads 345kV (527656)
GEN-2016-124	150	Wind (588013)	Crossroads 345kV (527656)
GEN-2016-125	74	Wind (588023)	Crossroads 345kV (527656)
GEN-2016-171	60.8	Solar (588353)	Tap Hobbs –Yoakum 230kV Line (560059)
GEN-2016-172	229.95	Wind (588443, 588446)	Newhart 115kV (525460)
GEN-2016-177	17	Gas Turbine (588461)	Tap Ink Basin – Denver City 115kV (588462)

SUMMARY OF STABILITY ANALYSIS

The Stability Analysis determined that there were multiple contingencies across all seasons that resulted in system/voltage instability, generation tripping offline, and poor post-fault voltage recovery when all generation interconnection requests were at 100% output. To mitigate the system/voltage instability, voltage violations, generation tripping offline, and poor post-fault steady-state voltages, the following upgrades were provided by SPP and implemented (upgrades provided here are required for 17W season and thus, implemented in remaining years):

- Hobbs to Yoakum to Tuco 345 kV circuit #1 (advancement in 17W and 18S)
- Yoakum 345/230 kV transformer #1 (advancement in 17W and 18S)
- Beaver to Clark County 345 kV circuit #1 (previously assigned)
- Border 345 kV 50 MVAR capacitor bank
- Crawfish Draw 345 kV 200 MVAR capacitor bank & +225/-150 MVAR SVC
- Crossroads 345 kV 200 MVAR capacitor bank
- Oklaunion 345 kV 130 MVAR capacitor bank & +300/-150 MVAR SVC
- Potter County 345 kV 100 MVAR capacitor bank
- Crawfish Draw to Lawton Eastside 345 kV circuit #1
- Chisholm to Potter County 345 kV circuit #1

After implementing the above upgrades, the contingency analysis was re-simulated for all contingencies. With the upgrades, the Stability Analysis determined that there was no wind turbine tripping or system instability observed as a result of interconnecting all study projects at 100% output.

SUMMARY OF THE SHORT CIRCUIT ANALYSIS

The short circuit analysis was performed on the 2018 Summer Peak and 2026 Summer Peak power flows for all study projects. Refer to Table ES-2 and Table ES-3 for a list of maximum fault currents observed for each study project for the 18S and 26S cases, respectively.

Table ES-2
2018SP: List of Maximum Fault Currents Observed for Each Study Project

Study Project	Fault Current at POI (kA)	Maximum Fault Current (kA)	Fault Location
ASGI-2016-009	11.19	30.76	Tolk 230 kV
GEN-2015-099	24.45	28.88	Hobbs 115 kV
GEN-2016-121	9.28	28.88	Hobbs 115 kV
GEN-2016-123	9.23	30.76	Tolk 230 kV
GEN-2016-124	9.23	30.76	Tolk 230 kV
GEN-2016-125	9.23	30.76	Tolk 230 kV
GEN-2016-171	9.14	30.76	Tolk 230 kV
GEN-2016-172	16.84	31.27	Nichols 115 kV
GEN-2016-177	9.17	28.88	Hobbs 115 kV

Table ES-3
2026SP: List of Maximum Fault Currents Observed for Each Study Project

Study Project	Fault Current at POI (kA)	Maximum Fault Current (kA)	Fault Location
ASGI-2016-009	11.30	30.09	Tolk 230 kV
GEN-2015-099	24.96	29.89	Hobbs 115 kV
GEN-2016-121	9.38	29.89	Hobbs 115 kV
GEN-2016-123	9.17	30.09	Tolk 230 kV
GEN-2016-124	9.17	30.09	Tolk 230 kV
GEN-2016-125	9.17	30.09	Tolk 230 kV
GEN-2016-171	8.85	30.09	Tolk 230 kV
GEN-2016-172	16.84	31.27	Nichols 115 kV
GEN-2016-177	9.20	29.89	Hobbs 115 kV

Table of Contents

Section 1: Objectives.....	1
Section 2: Background.....	1
Section 3: Stability Analysis	63
3.1 Approach	63
3.2 Stability Analysis Results	65
Section 4: Short Circuit Analysis	81
4.1 Approach	81
4.2 Short Circuit Analysis Results: 2018 Summer Peak	81
4.3 Short Circuit Analysis Results: 2026 Summer Peak	87
Section 5: Conclusions.....	94

SECTION 1: OBJECTIVES

The objective of this report is to provide Southwest Power Pool, Inc. (SPP) with the deliverables for the “DISIS-2016-002-1 (Group 06) Definitive Impact Study.” SPP requested an Interconnection System Impact Study for nine (9) generation interconnections for 2017 Winter Peak, 2018 Summer Peak, and 2026 Summer Peak, which requires a Stability Analysis, Short Circuit Analysis, and an Impact Study Report.

SECTION 2: BACKGROUND

The Siemens Power Technologies International PSS/E power system simulation program Version 33.10.0 was used for this study. SPP provided the stability database cases for 2017 Winter Peak, 2018 Summer Peak, and 2026 Summer Peak conditions and a list of contingencies to be examined. The model includes the study projects shown in Table 2-1 and the previously queued projects listed in Table 2-2. Refer to Appendix A for the steady-state and dynamic model data for the study projects. A power flow one-line diagram for each generation interconnection project is shown in Figures 2-1 through 2-7. Note that the one-line diagrams represent the 2017 Winter Peak case.

The Stability Analysis determined the impacts of the new interconnecting projects on the stability and voltage recovery of the nearby system and the ability of the interconnecting projects to meet FERC Order 661A. If problems with stability or voltage recovery are identified, the need for reactive compensation or system upgrades were investigated. Three-phase faults and single line-to-ground faults were examined as listed in Table 2-3.

A Short Circuit Analysis was performed on the 2018 Summer Peak and 2026 Summer Peak study years for each study generator. The study was performed five buses out from the study generator’s point of interconnection and results were documented.

**Table 2-1
Interconnection Projects Evaluated**

Request	Size (MW)	Generator Model	Point of Interconnection
ASGI-2016-009	3	Wind (588472)	Wolfforth Substation 115kV (526481)
GEN-2015-099	73.26	Solar (587673)	Maddox 115kV (528355)
GEN-2016-121	110	Solar (587993)	Roadrunner 115kV (528025)
GEN-2016-123	298	Wind (588003, 588006)	Crossroads 345kV (527656)
GEN-2016-124	150	Wind (588013)	Crossroads 345kV (527656)
GEN-2016-125	74	Wind (588023)	Crossroads 345kV (527656)
GEN-2016-171	60.8	Solar (588353)	Tap Hobbs –Yoakum 230kV Line (560059)
GEN-2016-172	229.95	Wind (588443, 588446)	Newhart 115kV (525460)
GEN-2016-177	14/17 SP/WP	Gas Turbine (588461)	Tap Ink Basin – Denver City 115kV (588462)

Table 2-2
Previously Queued Nearby Interconnection Projects Included

Request	Size (MW)	Generator Model	Point of Interconnection
Hopi	10	Solar 1.0MW	Hopi 115kV (528226)
Jal	10	Solar 1.0MW	S Jal 115kV (528547)
Lea Road	10	Solar 1.0MW	Lea Road 115kV (528505)
Monument	10	Solar 1.0MW	Monument 115kV (528491)
Ocotillo	10	Solar 1.0MW	S_Jal 115kV (528132)
Yuma	0.9	SNL 0.9MW	SP-Yuma 69kV (526469)
Sunray	49.5	GE 1.5MW	Valero 115kV (523277)
GEN-2001-033	180	Mitsubishi MHI 1000A 1.0MW	San Juan Tap 230kV (524885)
GEN-2001-036	80	Mitsubishi MHI 1000A 1.0MW	Norton 115kV (524502)
GEN-2006-018	168.135	Wartsila 9.34MW	Tuco Interchange 230kV (525830)
GEN-2006-026	502	Thermal 144/145/213MW	Hobbs 115kV (527891) Hobbs 230kV (527894)
GEN-2008-022	300	Vestas V100 VCSS 2.0MW	Crossroads 345kV (527656)
GEN-2010-006	205	Thermal 205MW	Jones 230kV(526337)
ASGI-2010-010	33	Wartsila 20V34SG 8.4392MW	Lovington 115kV (528334)
ASGI-2010-020	29.9	Nordex N100 2.3MW	Tap LE-Tatum to LE-Crossroads 69kV (560360)
ASGI-2010-021	15	Mitsubishi MPS- 1000A 1.0MW	Tap LE-Saundrtp to LE-Anderson 69kV (560364)
ASGI-2011-001	27.3	Suzlon S97 2.1MW	Lovington 115kV (528334)
ASGI-2011-003	10	Sany 2.0MW	Hendricks 69kV (525943)
ASGI-2011-004	19.8	Sany 93m/100m 1.8MW	Pleasant Hill 69kV (525915)
GEN-2011-025	78.76	GE 100m 1.79MW	Tap Floyd County - Crosby County 115kV (562004)
GEN-2011-045	205	Thermal 205MW	Jones 230kV (526337)
GEN-2011-046	27	Thermal 27MW	Lopez 115kV (524472)
GEN-2011-048/ GEN-2012-036	172/182	Thermal 182MW	Mustang 230kV (527151)
GEN-2012-001	61.2	CCWE 3.6MW	Cirrus Tap 230kV (526679)

Request	Size (MW)	Generator Model	Point of Interconnection
ASGI-2012-002/ASGI-2013-005	19.8	Vestas V82 1.65MW	FE-Clovis Interchange 115kV (524808)
GEN-2012-020	477.12	GE 1.68MW	Tuco 230kV (525830)
GEN-2012-034	7 MW increase (Pgen=157MW)	Thermal 157MW	Mustang 230kV (527151)
GEN-2012-035	7 MW increase (Pgen=157MW)	Thermal 157MW	Mustang 230kV (527151)
GEN-2012-037	196/203	GE 7FA Gas CT 203MW	Tuco 345kV (525832)
GEN-2013-016/GEN-2015-041	196/208	GE 7FA Gas CT 208MW	Tuco 345kV (525832)
ASGI-2013-002	18.4	Siemens VS 2.3MW	FE Tucumcari 115kV (524509)
ASGI-2013-003	18.4	Siemens VS 2.3MW	FE Clovis 115kV (524808)
GEN-2013-022	24.2	SMA SC-2200-US 2.2MW	Norton 115kV (524486)
GEN-2013-027	148.35	Vestas V126 GS 3.45MW	Tap Tolk - Yoakum 230kV (562480)
GEN-2014-033	70	GE LV5 0.95MW, Schneider XC 680 0.64MW	Chaves County 115kV (527482)
GEN-2014-034	70	GE LV5 3.89MW	Chaves County 115kV (527482)
GEN-2014-035	30	GE LV5 3.75MW	Chaves County 115kV (527482)
GEN-2014-040	319.7	GE 2.3MW	Castro 115kV (524746)
ASGI-2015-002/ASGI-2016-002	2.65	GE 2.65MW	SP-Yuma 69kV (526469)
GEN-2015-014	150	Vestas V110 VCSS 2.0MW	Tap Cochran - Lehman 115kV (560030)
GEN-2015-020	99.96	Eaton Power Xpert Solar 1.67MW	Oasis 115kV (524874)
GEN-2015-056	101.2	GE 2.3MW	Crossroads 345kV (527656) (Tap Eddy (527802) to Tolk(525549))
ASGI-2016-004	10	3 x Alstom 3.2MW/4 x Renewtech 100kW	Palo Duro 115kV (524530)
GEN-2016-015	100	TMEIC Solarware Samurai 1833GRQ 1.67MW	Andrews 345kV (528604)

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2016-056	200	GE 2.0MW (wind)	Carlisle 230 kV (526161)
GEN-2016-062	250.7	GE 2.3MW (wind)	Andrews 345kV (528604)
GEN-2016-069	31.35	GE LV5 0.95MW	Chaves County 115kV (527482)

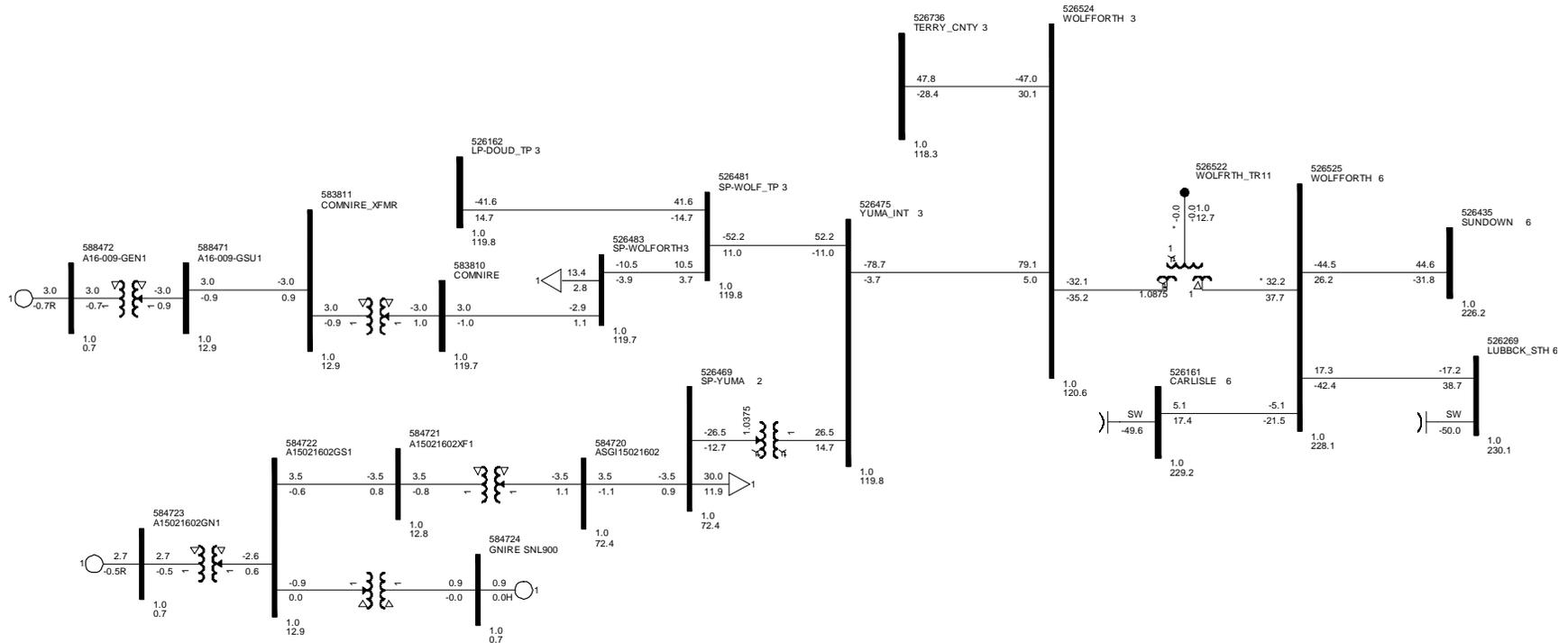


Figure 2-1. Power flow one-line diagram for interconnection project at the Wolfforth Substation 115 kV (ASGI-2016-009).

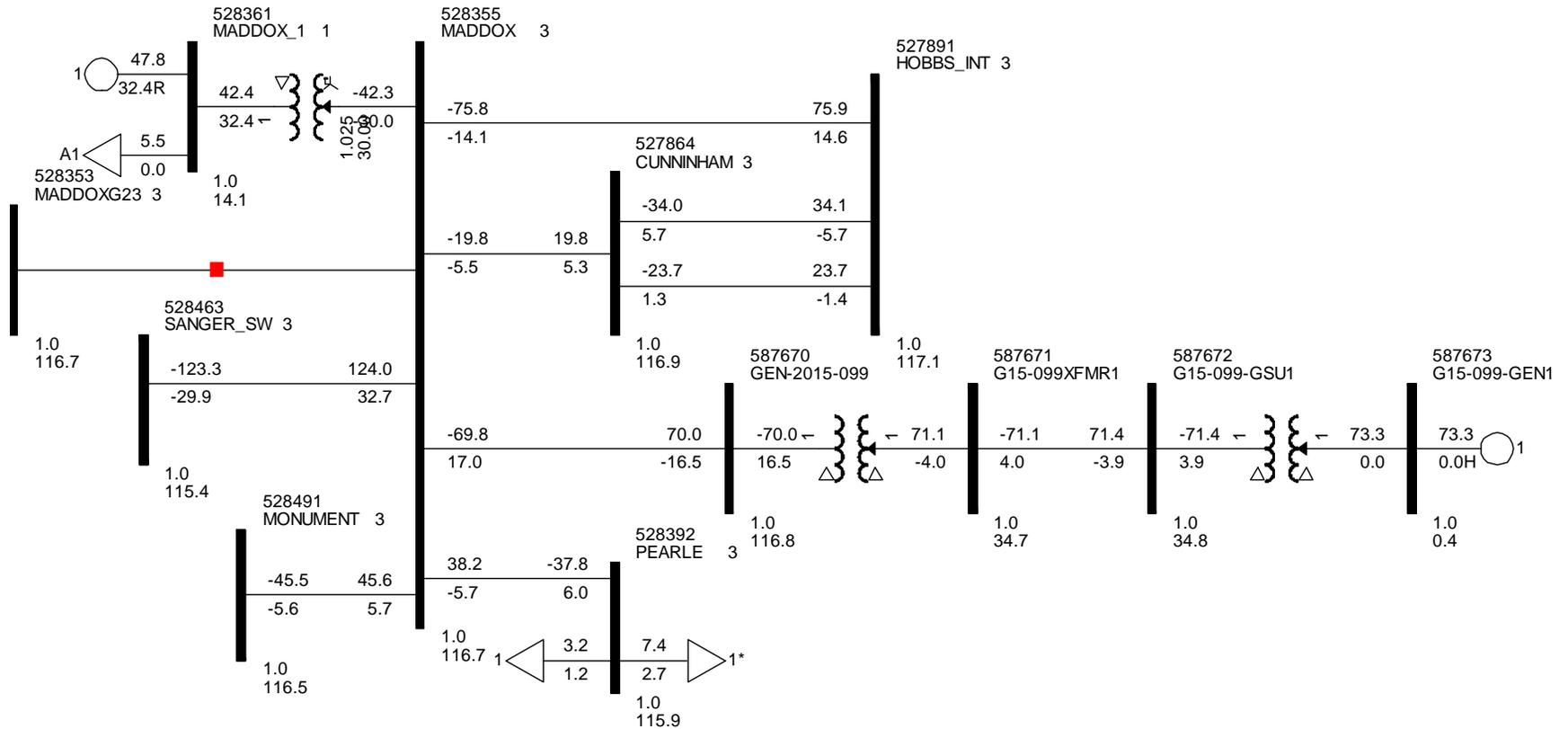


Figure 2-2. Power flow one-line diagram for interconnection project at Maddox 115 kV (GEN-2015-099).

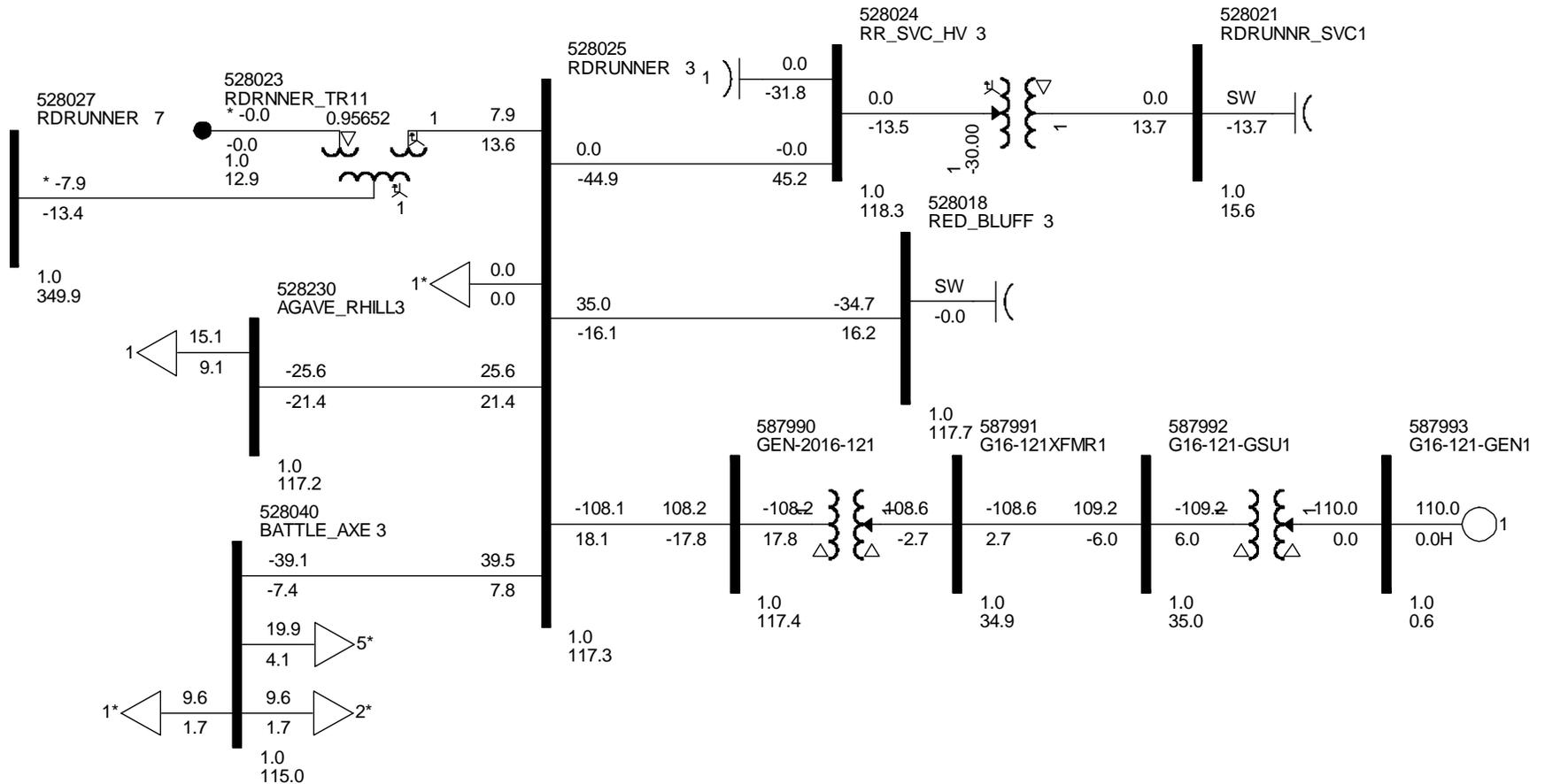


Figure 2-3. Power flow one-line diagram for interconnection project at Roadrunner 115 kV (GEN-2016-121).

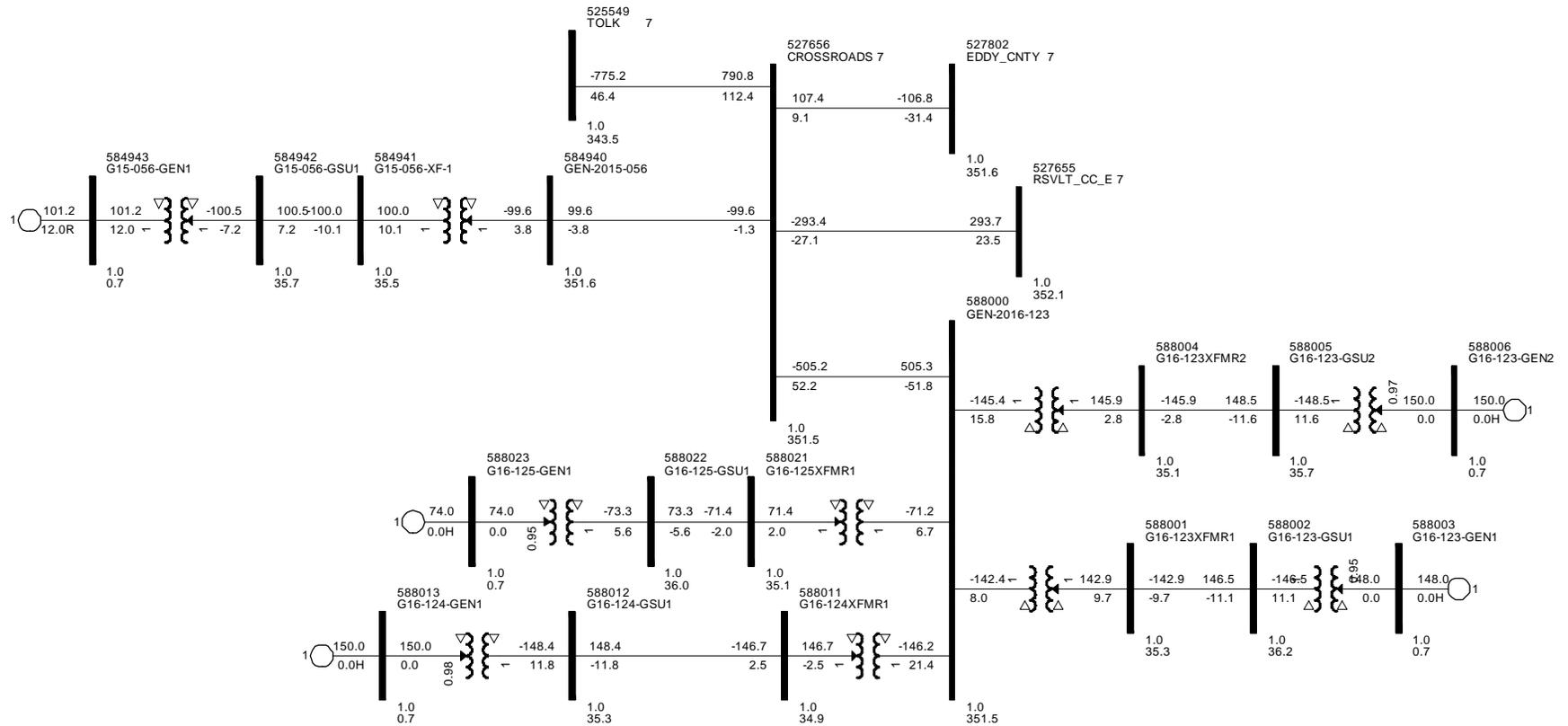


Figure 2-4. Power flow one-line diagram for interconnection project at Crossroads 345 kV (GEN-2016-123, -124, and -125).

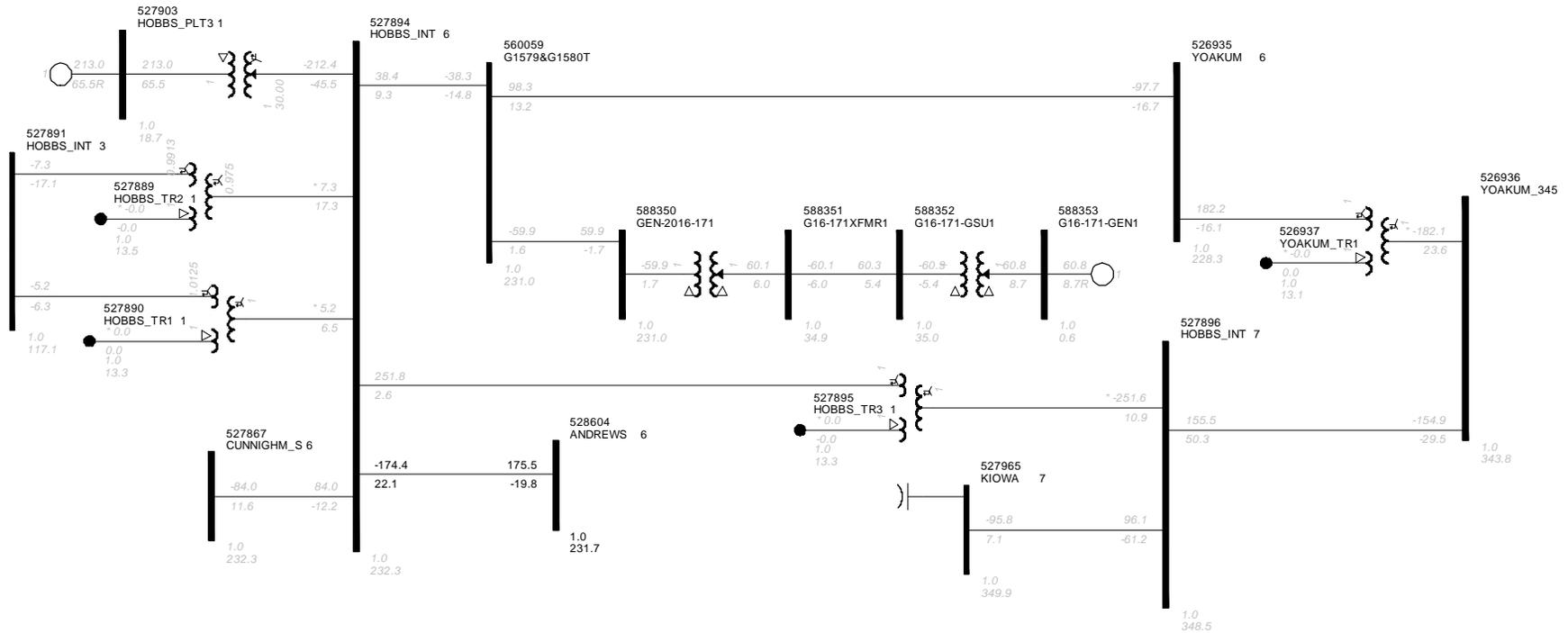


Figure 2-5. Power flow one-line diagram for interconnection project at Hobbs Interchange 345 kV and Hobbs to Yoakum 230 kV Tap POI (GEN-2016-171).

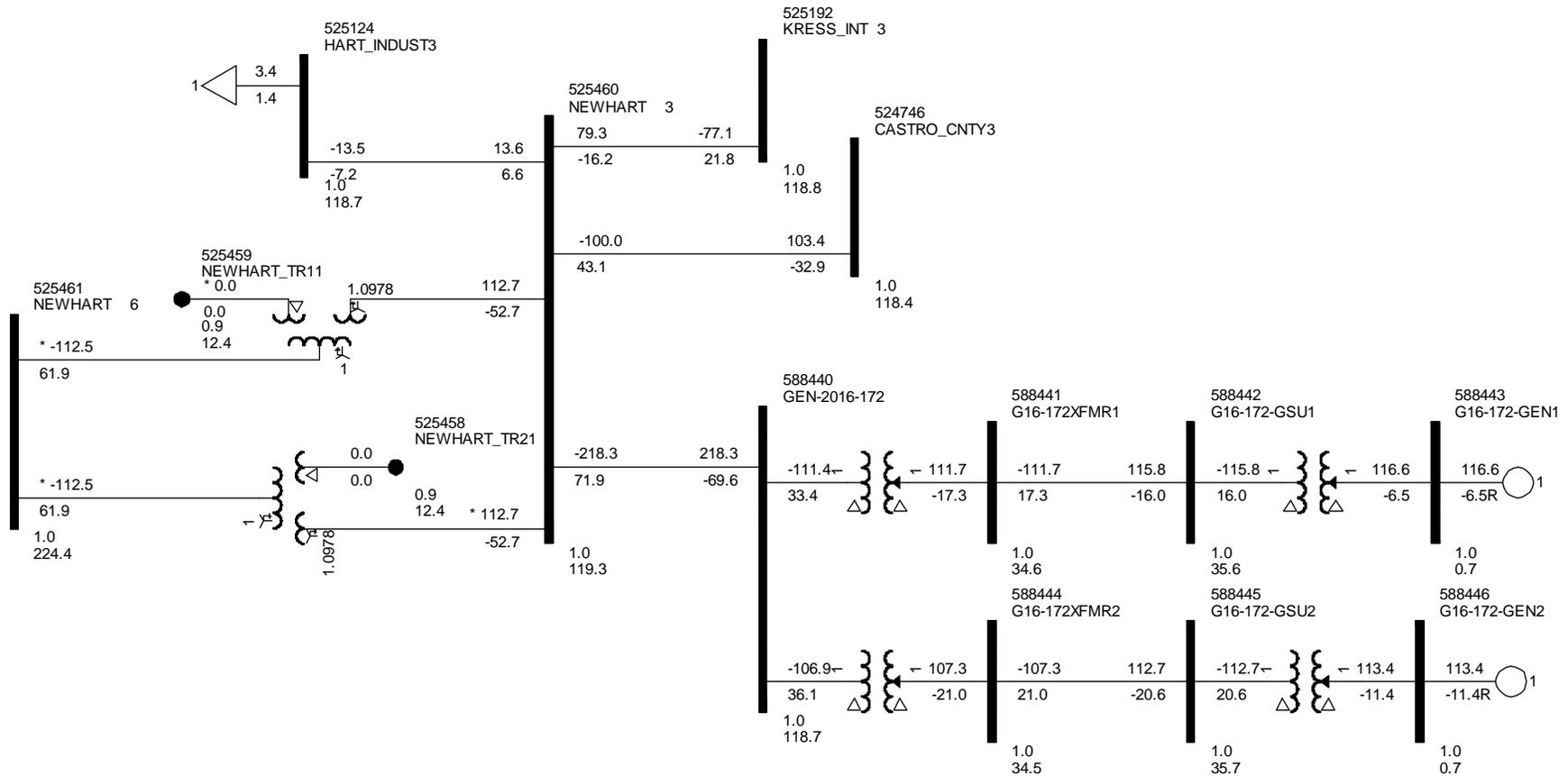


Figure 2-6. Power flow one-line diagram for interconnection project at Newhart 115 kV (GEN-2016-172).

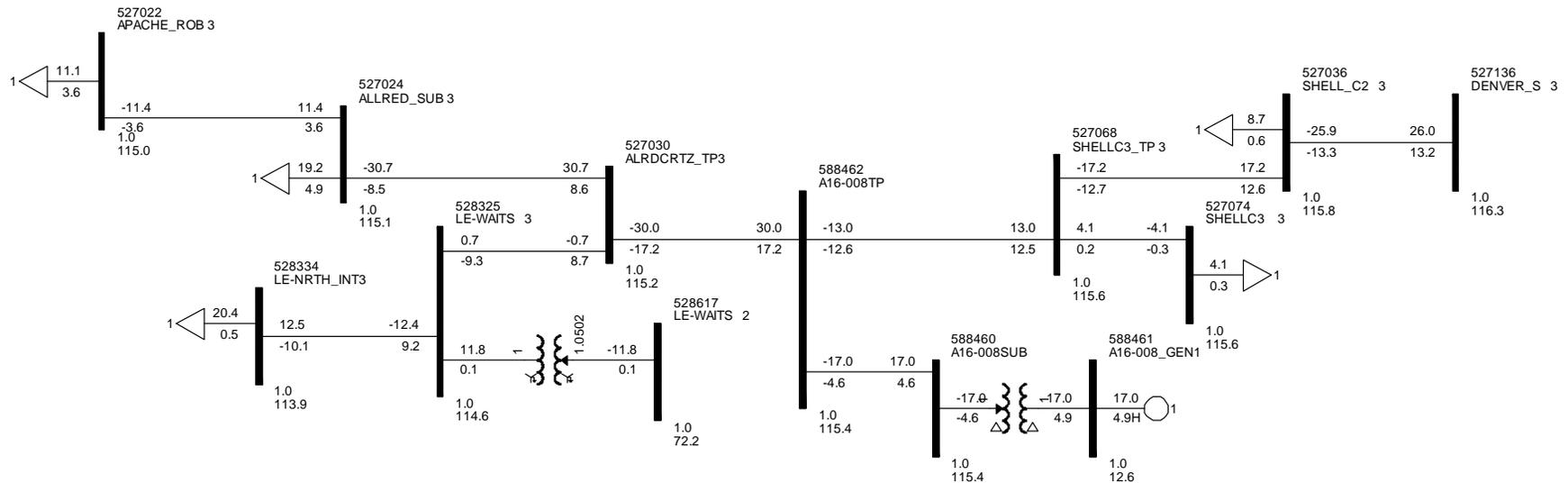


Figure 2-7. Power flow one-line diagram for interconnection project at Ink Basin to Denver City 115 kV Tap POI (GEN-2016-177 (A16-008)).

**Table 2-3
Case List with Contingency Description**

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on the A16-008-Tap (588462) to ALRDCRTZ Tap (527030) 115 kV line circuit 1, near A16-008-Tap. a. Apply fault at the A16-008-Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
2	FLT02-3PH	3 phase fault on the A16-008-Tap (588462) to Shell Tap (527068) 115 kV line circuit 1, near A16-008-Tap. a. Apply fault at the A16-008-Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT03-3PH	3 phase fault on the Shell Tap (527068) to Shell C2 (527036) 115 kV line circuit 1, near Shell Tap. a. Apply fault at the Shell Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
4	FLT04-3PH	3 phase fault on the ALRDCRTZ Tap (527030) to ALLRED Sub (527024) 115 kV line circuit 1, near ALRDCRTZ Tap. a. Apply fault at the ALRDCRTZ Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
5	FLT05-3PH	3 phase fault on the ALRDCRTZ Tap (527030) to LE-WAITS (528325) 115 kV line circuit 1, near ALRDCRTZ Tap. a. Apply fault at the ALRDCRTZ Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
6	FLT06-3PH	Removed
7	FLT07-3PH	Removed
8	FLT08-3PH	Removed
9	FLT09-3PH	Removed
10	FLT10-3PH	Removed

Cont. No.	Cont. Name	Description
11	FLT11-3PH	Removed
12	FLT12-3PH	Removed
13	FLT13-3PH	Removed
14	FLT14-SB	Single phase fault with stuck breaker at Shell Tap (527068) a. Apply fault at the Shell Tap 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Shell Tap (527068) – A16-008-Tap (588462) 115 kV d. Shell Tap (527068) – Shell C2 (527036) 115 kV
15	FLT15-SB	Single phase fault with stuck breaker at ALRDCRTZ (527030) a. Apply fault at the ALRDCRTZ 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. ALRDCRTZ (527030) – ALLRED Sub (527024) 115 kV d. ALRDCRTZ (527030) – LE-WAITS (528325) 115 kV
16	FLT16-SB	Removed
17	FLT17-SB	Removed
18	FLT18-SB	Removed
19	FLT19-PO	Prior Outage of A16-008-Tap 115 kV (588462) to Shell Tap 115 kV (527068) circuit 1; 3 phase fault on the LE-LOVINGTON (528618) to LE-NRTH_INT (528334) transformer, near LE-NRTH_INT. a. Apply fault at the LE-NRTH_INT 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
20	FLT20-PO	Prior Outage of A16-008-Tap 115 kV (588462) to Shell Tap 115 kV (527068) circuit 1; 3 phase fault on the ALRDCRTZ Tap (527030) to LE-WAITS (528325) 115 kV line circuit 1, near ALRDCRTZ Tap. a. Apply fault at the ALRDCRTZ Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
21	FLT21-PO	Prior Outage of LE-LOVINGTON (528618) to LE-NRTH_INT (528334) xfmr 1; 3 phase fault on the ALRDCRTZ Tap (527030) to LE-WAITS (528325) 115 kV line circuit 1, near ALRDCRTZ Tap. a. Apply fault at the ALRDCRTZ Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
22	FLT22-PO	Prior Outage of LE-LOVINGTON (528618) to LE-NRTH_INT (528334) xfmr 1; 3 phase fault on the A16-008-Tap (588462) to Shell Tap (527068) 115 kV line circuit 1, near A16-008-Tap. a. Apply fault at the A16-008-Tap 115 bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
23	FLT23-PO	Prior Outage of LE-NRTH_INT (528334) to LE-WAITS (528325) circuit 1; 3 phase fault on the ALRDCRTZ Tap (527030) to ALLRED Sub (527024) 115 kV line circuit 1, near ALRDCRTZ Tap. a. Apply fault at the ALRDCRTZ Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
24	FLT24-PO	Prior Outage of LE-NRTH_INT (528334) to LE-WAITS (528325) circuit 1; 3 phase fault on the A16-008-Tap (588462) to Shell Tap (527068) 115 kV line circuit 1, near A16-008-Tap. a. Apply fault at the A16-008-Tap 115 bus. b. Clear fault after 5 cycles by tripping the faulted line.
25	FLT25-PO	Removed
26	FLT26-3PH	3 phase fault on the Wolfforth (526524) to Yuma (526475) 115 kV line, near Wolfforth a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
27	FLT27-3PH	3 phase fault on the Wolfforth (526524) to Terry County (526736) 115 kV line, near Wolfforth a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
28	FLT28-3PH	3 phase fault on the Wolfforth 115 kV (526524) to Wolfforth 230 kV (526525) to Wolfforth 13.2 kV (526522) XFMR CKT 1, near Wolfforth 115 kV. a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
29	FLT29-3PH	3 phase fault on the Terry County (526736) to Denver North (527130) 115 kV line, near Terry County a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-3PH	3 phase fault on the Terry County (526736) to LG-Clauene (526491) 115 kV line, near Terry County a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
31	FLT31-3PH	3 phase fault on the Terry County (526736) to Sulphur (527262) 115 kV line, near Terry County a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32	FLT32-3PH	3 phase fault on the Terry County (526736) to Prentice (526792) 115 kV line, near Terry County a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
33	FLT33-3PH	3 phase fault on the Terry County 115/69/13.2 kV (526736/526735/526733) transformer circuit 1, near Terry County 115 kV. a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
34	FLT34-3PH	3 phase fault on the Yuma (526475) to SP-Wolfforth Tap (526481) 115 kV line, near Yuma a. Apply fault at the Yuma 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
35	FLT35-3PH	3 phase fault on the Wolfforth (526525) to Sundown (526435) 230 kV line, near Wolfforth a. Apply fault at the Wolfforth 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
36	FLT36-3PH	3 phase fault on the Wolfforth (526525) to Lubbock South (526269) 230 kV line, near Wolfforth a. Apply fault at the Wolfforth 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
37	FLT37-3PH	3 phase fault on the Wolfforth (526525) to Carlisle (526161) 230 kV line, near Wolfforth a. Apply fault at the Wolfforth 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
38	FLT38-3PH	3 phase fault on the SP-Wolfforth Tap (526481) to LP-Doud Tap (526162) 115 kV line, near SP-Wolfforth Tap a. Apply fault at the SP-Wolfforth Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
39	FLT39-3PH	Removed
40	FLT40-SB	Single phase fault with stuck breaker at Wolfforth (526524) a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Wolfforth (526524) – Yuma (526475) 115 kV d. Wolfforth (526524) – Terry County (526736) 115 kV
41	FLT41-SB	Single phase fault with stuck breaker at Wolfforth (526524) a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Wolfforth 115 kV (526524)/230 kV (526525)/13.2 kV (526522) xfmr d. Wolfforth (526524) – Terry County (526736) 115 kV
42	FLT42-SB	Removed
43	FLT43-SB	Single phase fault with stuck breaker Terry County (526736) a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Terry County (526736) – Prentice (526792) 115 kV d. Terry County (526736) – Sulphur (527262) 115 kV
44	FLT44-SB	Single phase fault with stuck breaker Terry County (526736) a. Apply fault at the Terry County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Terry County (526736) – Denver (527130) 115 kV d. Terry County (526736) – LG-Clauene (526491) 115 kV

Cont. No.	Cont. Name	Description
45	FLT45-PO	Prior Outage of the Wolfforth (526524) to Terry County (526736) 115 kV line circuit 1; 3 phase fault on the Wolfforth 115 kV (526524)/230 kV (526525)/13.2 kV (526522) transformer, near Wolfforth. a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
46	FLT46-PO	Prior Outage of the Wolfforth (526524) to Terry County (526736) 115 kV line circuit 1; 3 phase fault on the Wolfforth (526524) to Yuma (526475) 115 kV line, near Wolfforth a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
47	FLT47-PO	Prior Outage of the Wolfforth (526524) to Yuma (526475) 115 kV line circuit 1; 3 phase fault on the Wolfforth 115 kV (526524)/230 kV (526525)/13.2 kV (526522) transformer, near Wolfforth. a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
48	FLT48-PO	Prior Outage of the Wolfforth (526524) to Yuma (526475) 115 kV line circuit 1; 3 phase fault on the Wolfforth (526524) to Terry County (526736) 115 kV line circuit 1, near Wolfforth. a. Apply fault at the Wolfforth 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
49	FLT49-PO	Prior Outage of the SP-Wolfforth Tap (526481) to SP-Wolfforth (526483) 115 kV line circuit 1; 3 phase fault on the SP-Wolfforth Tap (526481) to LP-Doud (526162) 115 kV line circuit 1, near SP-Wolfforth Tap. a. Apply fault at the SP-Wolfforth Tap 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
50	Removed	3 phase fault on the G15-039-Tap (560051) to Deaf Smith (524623) 230 kV line circuit 1, near G15-039-Tap. a. Apply fault at the G15-039-Tap 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
51	FLT51-3PH	3 phase fault on the Deaf Smith (524623) to Plant X (525481) 230 kV line circuit 1, near Deaf Smith. a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
52	FLT52-3PH	<p>3 phase fault on the Deaf Smith (524623) to Bushland (524267) 230 kV line circuit 1, near Deaf Smith.</p> <p>a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
53	FLT53-3PH	<p>3 phase fault on the Deaf Smith 230/115/13.2 kV (524623/524622/524620) transformer circuit 1, near Deaf Smith 230 kV.</p> <p>a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.</p>
54	FLT54-3PH	<p>3 phase fault on the Bushland (524267) to Potter County (523959) 230 kV line circuit 1, near Bushland.</p> <p>a. Apply fault at the Bushland 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
55	FLT55-3PH	<p>3 phase fault on the Plant X (525481) to Tolk East (525524) 230 kV line circuit 2, near Plant X.</p> <p>a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
56	FLT56-3PH	<p>3 phase fault on the Plant X (525481) to Newhart (525461) 230 kV line circuit 1, near Plant X.</p> <p>a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
57	FLT57-3PH	<p>3 phase fault on the Plant X (525481) to Tolk West (525531) 230 kV line circuit 1, near Plant X.</p> <p>a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
58	FLT58-3PH	3 phase fault on the Plant X (525481) to Sundown (526435) 230 kV line circuit 1, near Plant X. a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
59	FLT59-3PH	3 phase fault on the Plant X 230/115/13.2 kV (525481/525480/525479) transformer circuit 1, near Plant X 230 kV. a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
60	FLT60-SB	Single phase fault with stuck breaker on the Tolk West (525531) to Plant X (525481) 230 kV circuit 1 line, near Tolk West. a. Apply fault at the Tolk West 230 kV bus. b. Run 5 cycles, and then open Plant X end of the faulted line. c. Run 10 cycles, and then clear the fault and disconnect Tolk West 230 kV bus (525531).
61	FLT61- SB	Single phase fault with stuck breaker on the Tolk East (525524) to Plant X (525481) 230 kV line circuit 2, near Tolk East. a. Apply fault at the Tolk East 230 kV bus. b. Run 5 cycles, and then open Plant X end of the faulted line. c. Run 10 cycles, and then clear the fault and disconnect Tolk East 230 kV bus (525524).
62	FLT62- SB	Single phase fault with stuck breaker at Deaf Smith (524623) 230 kV a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Deaf Smith (524623) - Bushland (524267) 230 kV d. Deaf Smith (524623) – Plant X (525481) 230 kV
63	FLT63- SB	Single phase fault with stuck breaker at Plant X (525481) 230 kV a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Plant X (525481) – Deaf Smith (524623) 230 kV d. Plant X (525481) – Newhart (525461) 230 kV
64	FLT64- SB	Single phase fault with stuck breaker at Plant X (525481) 230 kV a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Plant X (525481) – Tolk West (525531) 230 kV d. Plant X (525481) – Sundown (526435) 230 kV

Cont. No.	Cont. Name	Description
65	FLT65- SB	Single phase fault with stuck breaker at Plant X (525481) 230 kV a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Plant X 230/115/13.2 kV (525481/525480/525479) transformer d. Plant X (525481) – Newhart (525461) 230 kV
66	FLT66-PO	Prior Outage of the Plant X 230/115/13.2 kV (525481/525480/525479) transformer circuit 1; 3 phase fault on the Plant X 230 kV (525481) to Sundown (526435) 230 kV line circuit 1, near Plant X. a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
67	FLT67- PO	Prior Outage of the Plant X 230/115/13.2 kV (525481/525480/525479) transformer circuit 1; 3 phase fault on the Deaf Smith (524623) to Plant X (525481) 230 kV line circuit 1, near Deaf Smith. a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
68	FLT68- PO	Prior Outage of the Plant X (525481) to Sundown (526435) 230 kV Line; 3 phase fault on the Plant X 230 kV (525481) to Tolk East (525524) 230 kV line circuit 2, near Plant X. a. Apply fault at the Plant X 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
69	FLT69- PO	Prior Outage of the Plant X (525481) to Sundown (526435) 230 kV Line; 3 phase fault on the Deaf Smith (524623) to Plant X (525481) 230 kV line circuit 1, near Deaf Smith. a. Apply fault at the Deaf Smith 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
70	FLT70- PO	Prior Outage of the Deaf Smith (524623) to Bushland (524267) 230 kV Line; 3 phase fault on the Deaf Smith 230 kV to G15-039-Tap (560051) 230 kV line circuit 1, near Deaf Smith. a. Apply fault at the D 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
71	Removed	Prior Outage of the Deaf Smith (524623) to Bushland (524267) 230 kV Line; 3 phase fault on the G15-039-Tap (560051) to Plant X (525481) 230 kV line circuit 1, near G15-039-Tap. a. Apply fault at the G15-039-Tap 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
72	FLT72-3PH	3 phase fault on the Mustang (527149) to Amoco Wasson (526784) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
73	FLT73-3PH	3 phase fault on the Mustang 230/115/13.2 kV (527149/527146/527143) transformer circuit 1, near Mustang 230 kV. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
74	FLT74-3PH	3 phase fault on the Mustang (527149) to Yoakum (526935) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
75	FLT75-3PH	3 phase fault on the Mustang (527149) to Seminole (527276) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
76	FLT76-3PH	3 phase fault on the Seminole 230/115/13.2 kV (527276/527275/527273) transformer circuit 1, near Seminole 230 kV. a. Apply fault at the Seminole 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
77	FLT77-3PH	3 phase fault on the Yoakum (526935) to G13-027-TAP (562480) 230 kV line, near Yoakum. a. Apply fault at the Yoakum 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
78	FLT78-3PH	3 phase fault on the Yoakum (526935) to Amoco (526460) 230 kV line, near Yoakum. a. Apply fault at the Yoakum 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
79	FLT79-3PH	<p>3 phase fault on the Yoakum (526935) to G1579&G1580T (560059) 230 kV line, near Yoakum.</p> <p>a. Apply fault at the Yoakum 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
80	FLT80-3PH	<p>3 phase fault on the Yoakum (526935) to OxyBru Tap (527009) 230 kV line, near Yoakum.</p> <p>a. Apply fault at the Yoakum 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
81	FLT81-3PH	<p>3 phase fault on the Yoakum 230/115/13.2 kV (526935/526935/526931) transformer circuit 1, near Yoakum 230 kV.</p> <p>a. Apply fault at the Yoakum 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted transformer.</p>
82	FLT82-3PH	<p>3 phase fault on the Amoco Wasson (526784) to OxyBru Tap (527009) 230 kV line circuit 1, near Amoco Wasson.</p> <p>a. Apply fault at the Amoco Wasson 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
83	FLT83-3PH	<p>3 phase fault on the Mustang (527146) to Denver North (527130) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
84	FLT84-3PH	<p>3 phase fault on the Mustang (527146) to Seagraves (527202) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
85	FLT85-3PH	<p>3 phase fault on the Mustang (527146) to Denver South (527136) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
86	FLT86-3PH	<p>3 phase fault on the Mustang (527146) to Shell Co (527062) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
87	FLT87-3PH	<p>3 phase fault on the Seagraves (527202) to LG-PLSHILL (527194) 115 kV line circuit 1, near Seagraves.</p> <p>a. Apply fault at the Seagraves 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
88	FLT88-3PH	<p>3 phase fault on the Seagraves (527202) to Sulphur (527262) 115 kV line circuit 1, near Seagraves.</p> <p>a. Apply fault at the Seagraves 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
89	FLT89-3PH	<p>3 phase fault on the Denver North (527136) to Shell (527036) 115 kV line circuit 1, near Denver North.</p> <p>a. Apply fault at the Denver North 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
90	FLT90-3PH	<p>3 phase fault on the Denver North (527136) to San Andreas (527105) 115 kV line circuit 1, near Denver North.</p> <p>a. Apply fault at the Denver North 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
91	FLT91-3PH	3 phase fault on the Denver North 115/69/13.2 kV (527130/527125/527122) transformer circuit 2, near Denver North. a. Apply fault at the Denver North 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
92	FLT92-SB	Single phase fault with stuck breaker at Mustang (527149) a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang 230/115/13.2 kV (527149/527146/527143) transformer d. Mustang (527149) – Amoco Wasson (526784) 230 kV
93	FLT93-SB	Single phase fault with stuck breaker at Mustang (527149) a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang (527149) – Seminole (527276) 230 kV d. Mustang (527149) – Amoco Wasson (526784) 230 kV
94	FLT94-SB	Single phase fault with stuck breaker on the Yoakum (526935) to G13-027-Tap (562480) 230 kV line, near Yoakum. a. Apply fault at the Yoakum 230 kV bus. b. Run 5 cycles, and then open G13-027-Tap end of the faulted line. c. Run 10 cycles, and then clear the fault and open Yoakum end of the line in (b) and trip Yoakum 230/115/13.2 kV (526935/526934/526931) transformer circuit 1.
95	FLT95-SB	Single phase fault with stuck breaker on the Yoakum (526935) to Amoco-SS (526460) 230 kV line, near Yoakum. a. Apply fault at the Yoakum 230 kV bus. b. Run 5 cycles, and then open Amoco-SS end of the faulted line. c. Run 10 cycles, and then clear the fault and trip Yoakum 230 kV (526935) bus.
96	FLT96-SB	Single phase fault with stuck breaker at Mustang (527146) a. Apply fault at the Mustang 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang 230/115/13.2 kV (527149/527146/527143) transformer d. Mustang (527146) – Denver South (527136) 115 kV
97	FLT97-SB	Single phase fault with stuck breaker at Mustang (527146) a. Apply fault at the Mustang 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang (527146) – Seagraves (527202) 115 kV d. Mustang (527146) – Denver North (527130) 115 kV

Cont. No.	Cont. Name	Description
98	FLT98-SB	Single phase fault with stuck breaker at Mustang (527146) a. Apply fault at the Mustang 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang (527146) – Denver South (527136) 115 kV d. Mustang (527146) – Denver North (527130) 115 kV
99	FLT99-SB	Single phase fault with stuck breaker at Mustang (527146) a. Apply fault at the Mustang 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Mustang (527146) – Shell County (527062) 115 kV d. Mustang (527146) – Seagraves (527202) 115 kV
100	FLT100-PO	Prior Outage of the Mustang (527149) to Seminole (527276) 230 kV line circuit 1; 3 phase fault on the Mustang (527149) to Yoakum (526935) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
101	FLT101- PO	Prior Outage of the Mustang (527149) to Seminole (527276) 230 kV line circuit 1; 3 phase fault on the Mustang (527149) to Amoco Wasson (526784) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
102	FLT102- PO	Prior Outage of the Mustang (527149) to Yoakum (526935) 230 kV line circuit 1; 3 phase fault on the Mustang (527149) to Seminole (527276) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
103	FLT103- PO	Prior Outage of the Mustang (527149) to Yoakum (526935) 230 kV line circuit 1; 3 phase fault on the Mustang (527149) to Amoco Wasson (526784) 230 kV line circuit 1, near Mustang. a. Apply fault at the Mustang 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
104	FLT104- PO	Prior Outage of the Mustang (527146) to Denver North (527130) 115 kV line circuit 1; 3 phase fault on the Mustang (527146) to Denver South (527136) 115 kV line circuit 2, near Mustang. a. Apply fault at the Mustang 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
105	FLT105- PO	<p>Prior Outage of the Mustang (527146) to Denver North (527130) 115 kV line circuit 1; 3 phase fault on the Mustang (527146) to Shell Co (527062) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
106	FLT106- PO	<p>Prior Outage of the Mustang (527149) 230 kV to Mustang (527146) 115 kV transformer, circuit 1; 3 phase fault on the Mustang (527146) to Denver North (527130) 115 kV line circuit 1, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
107	FLT107- PO	<p>Prior Outage of the Mustang (527146) to Shell County (527062) 115 kV line circuit 1; 3 phase fault on the Mustang (527146) to Denver South (527136) 115 kV line circuit 2, near Mustang.</p> <p>a. Apply fault at the Mustang 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
108	FLT108-3PH	<p>3 phase fault on the Maddox (528355) to Cunningham (527864) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
109	FLT109-3PH	<p>3 phase fault on the Maddox (528355) to Hobbs Interchange (527891) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
110	FLT110-3PH	<p>3 phase fault on the Maddox (528355) to Pearle (528392) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
111	FLT111-3PH	<p>3 phase fault on the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
112	FLT112-3PH	<p>3 phase fault on the Maddox (528355) to Monument (528491) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
113	FLT113-3PH	<p>3 phase fault on the Cunningham (527864) to Monument Tap (528568) 115 kV line circuit 1, near Cunningham.</p> <p>a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
114	FLT114-3PH	<p>3 phase fault on the Cunningham (527864) to Buckeye Tap (528348) 115 kV line circuit 1, near Cunningham.</p> <p>a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
115	FLT115-3PH	<p>3 phase fault on the Cunningham (527864) to Quahada (528394) 115 kV line circuit 1, near Cunningham.</p> <p>a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
116	FLT116-3PH	<p>3 phase fault on the Cunningham (527864) to Hobbs Interchange (527891) 115 kV line circuit 1, near Cunningham.</p> <p>a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
117	FLT117-3PH	3 phase fault on the Cunningham 230/115/13.2 kV (527864/527867/527863) transformer circuit 1, near Cunningham. a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
118	FLT118-3PH	3 phase fault on the Hobbs Interchange (527891) to LE-West (528333) 115 kV line circuit 1, near Hobbs Interchange. a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
119	FLT119-3PH	3 phase fault on the Hobbs Interchange (527891) to Bensing (528333) 115 kV line circuit 1, near Hobbs Interchange. a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
120	FLT120-3PH	3 phase fault on the Hobbs Interchange (527891) to Millen (528435) 115 kV line circuit 1, near Hobbs Interchange. a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
121	FLT121-3PH	3 phase fault on the Hobbs Interchange 230/115/13.2 kV (527891/527894/527890) transformer 1, near Hobbs Interchange. a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
122	FLT122-3PH	3 phase fault on the Monument (528491) to West Hobbs (528498) 115 kV line circuit 1, near Monument. a. Apply fault at the Monument 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
123	FLT123-SB	Single phase fault with stuck breaker at Maddox (528355) a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Maddox (528355) – Cunningham (527864) 115 kV d. Maddox (528355) – Hobbs Interchange (527891) 115 kV

Cont. No.	Cont. Name	Description
124	FLT124-SB	Single phase fault with stuck breaker at Maddox (528355) a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Maddox (528355) – Cunningham (527864) 115 kV d. Maddox (528355) – Monument (528491) 115 kV
125	FLT125-SB	Single phase fault with stuck breaker at Maddox (528355) a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Maddox (528355) – Sanger Switch (528463) 115 kV d. Maddox (528355) – Pearle (528392) 115 kV
126	FLT126-SB	Single phase fault with stuck breaker at Maddox (528355) a. Apply fault at the Maddox 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Maddox (528355) – Sanger Switch (528463) 115 kV d. Maddox (528355) – Monument (528491) 115 kV
127	FLT127-SB	Single phase fault with stuck breaker at Cunningham (527864) a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Cunningham (527864) – Hobbs Interchange (527891) 115 kV circuit 1 d. Cunningham (527864) – Hobbs Interchange (527891) 115 kV circuit 2
128	FLT128-SB	Single phase fault with stuck breaker at Cunningham (527864) a. Apply fault at the Cunningham 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Cunningham (527864) – Buckeye Tap (528348) 115 kV d. Cunningham (527864) – Monument Tap (528568) 115 kV
129	FLT129-SB	Single phase fault with stuck breaker at Hobbs Interchange (527891) a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs Interchange (527891) – Millen (528435) 115 kV d. Hobbs Interchange (527891) – Bensing (528433) 115 kV
130	FLT130-SB	Single phase fault with stuck breaker at Hobbs Interchange (527891) a. Apply fault at the Hobbs Interchange 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs Interchange 230/115/13.2 kV (527891/527894/527890) transformer circuit 1 d. Hobbs Interchange 230/115/13.2 kV (527891/527894/527889) transformer circuit 2

Cont. No.	Cont. Name	Description
131	FLT131-PO	<p>Prior Outage of the Maddox (528355) to Cunningham (527864) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Hobbs Interchange (527891) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
132	FLT132-PO	<p>Prior Outage of the Maddox (528355) to Cunningham (527864) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Pearle (528392) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
133	FLT133-PO	<p>Prior Outage of the Maddox (528355) to Cunningham (527864) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
134	FLT134-PO	<p>Prior Outage of the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Cunningham (527864) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
135	FLT135-PO	<p>Prior Outage of the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Hobbs Interchange (527891) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
136	FLT136-PO	<p>Prior Outage of the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Monument (528491) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
137	FLT137-PO	<p>Prior Outage of the Maddox (528355) to Sanger Switch (528463) 115 kV line circuit 1; 3 phase fault on the Maddox (528355) to Pearle (587670) 115 kV line circuit 1, near Maddox.</p> <p>a. Apply fault at the Maddox 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>

Cont. No.	Cont. Name	Description
138	FLT138-3PH	3 phase fault on the Swisher (525212) to Kress (525192) 115 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
139	FLT139-3PH	3 phase fault on the Swisher 230/115/13.2 kV (525213/525212/525211) transformer circuit 1, near Swisher 115 kV. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
140	FLT140-3PH	3 phase fault on the Kress (525192) to Kress Rural (525225) 115 kV line circuit 1, near Kress. a. Apply fault at the Kress 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
141	FLT141-3PH	3 phase fault on the Kress (525192) to Newhart (525460) 115 kV line circuit 1, near Kress. a. Apply fault at the Kress 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
142	FLT142-3PH	3 phase fault on the Kress (525192) to Tulia Tap (525179) 115 kV line circuit 1, near Kress. a. Apply fault at the Kress 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
143	FLT143-3PH	3 phase fault on the Kress (525192) to Hale County (525454) 115 kV line circuit 1, near Kress. a. Apply fault at the Kress 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
144	FLT144-3PH	3 phase fault on the Kress 115/69/13.2 kV (525192/525191/525190) transformer circuit 1, near Kress 115 kV. a. Apply fault at the Kress 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.

Cont. No.	Cont. Name	Description
145	FLT145-3PH	3 phase fault on the Swisher (525213) to Crawfish Draw (560021) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
146	FLT146-3PH	3 phase fault on the Swisher (525213) to Newhart (525461) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
147	FLT147-3PH	3 phase fault on the Swisher (525213) to G15-031-Tap (560050) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
148	FLT148-SB	Single phase fault with stuck breaker at Swisher (525213) 230 kV a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Swisher (525213) – Newhart (525461) 230 kV d. Swisher 230/115/13.2 kV (525213/525212/525211) transformer
149	FLT149-SB	Single phase fault with stuck breaker at Swisher (525213) 230 kV a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Swisher (525213) – Crawfish Draw (560021) 230 kV d. Swisher 230/115/13.2 kV (525213/525212/525211) transformer
150	FLT150-SB	Single phase fault with stuck breaker at Swisher (525213) 230 kV a. Apply fault at the Swisher 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Swisher (525213) – Newhart (525461) 230 kV d. Swisher (525213) – G15-031-Tap (560050) 230 kV
151	FLT151-SB	Single phase fault with stuck breaker at Kress (525192) 115 kV a. Apply fault at the Kress 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Kress (525192) – Tulia Tap (525179) 115 kV d. Kress (525192) – Kress Rural (525225) 115 kV

Cont. No.	Cont. Name	Description
152	FLT152-SB	Single phase fault with stuck breaker at Kress (525192) 115 kV a. Apply fault at the Kress 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Kress (525192) – Newhart (525460) 115 kV d. Kress (525192) – Hale County (525454) 115 kV
153	FLT153-PO	Prior Outage of the Swisher (525213) to Tuco (525830) 230 kV line circuit 1; 3 phase fault on the Swisher (525212) to Kress (525192) 115 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
154	FLT154-PO	Prior Outage of the Swisher (525213) to Tuco (525830) 230 kV line circuit 1; 3 phase fault on the Swisher (525212) to Newhart (525461) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
155	FLT155-PO	Prior Outage of the Swisher (525213) to Tuco (525830) 230 kV line circuit 1; 3 phase fault on the Kress (525192) to Newhart (525460) 115 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
156	FLT156-PO	Prior Outage of the Swisher (525213) to Tuco (525830) 230 kV line circuit 1; 3 phase fault on the Kress (525192) to Tulia Tap (525179) 115 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
157	FLT157-PO	Prior Outage of the Swisher (525212) to Kress (525192) 115 kV line circuit 1; 3 phase fault on the Swisher (525213) to Newhart (525461) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line
158	FLT158-PO	Prior Outage of the Swisher (525212) to Kress (525192) 115 kV line circuit 1; 3 phase fault on the Swisher (525213) to Crawfish Draw (560021) 230 kV line circuit 1, near Swisher. a. Apply fault at the Swisher 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line

Cont. No.	Cont. Name	Description
159	FLT159-3PH	<p>3 phase fault on the Ozark Mahoning (526770) to Lakeview (526631) 69 kV line circuit 1, near Ozark Mahoning.</p> <p>a. Apply fault at the Ozark Mahoning 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
160	FLT160-3PH	<p>3 phase fault on the LG-Dixon (526711) to Ozark Mahoning (526770) 69 kV line circuit 1, near LG-Dixon.</p> <p>a. Apply fault at the LG-Dixon 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
161	FLT161-3PH	<p>3 phase fault on the Brownfield (526754) to LG-Brownfield (526747) 69 kV line circuit 1, near Brownfield.</p> <p>a. Apply fault at the Brownfield 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
162	FLT162-3PH	<p>3 phase fault on the Brownfield (526754) to Brownfield Tap (526761) 69 kV line circuit 1, near Brownfield.</p> <p>a. Apply fault at the Brownfield 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
163	FLT163-3PH	<p>3 phase fault on the Terry County (526735) to LG-DOCWEBR (526506) 69 kV line circuit 1, near Swisher.</p> <p>a. Apply fault at the Terry County 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
164	FLT164-SB	<p>Single phase fault with stuck breaker at Terry County (526735) 69 kV</p> <p>a. Apply fault at the Terry County 69 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Terry County (526735) – LG-DOCWEBR (526506) 69 kV d. Terry County 115/69/13.2 kV (526736/526735/526733) transformer</p>

Cont. No.	Cont. Name	Description
165	FLT165-PO	<p>Prior Outage of the Terry County 115/69/13.2 kV (526736/526735/526733) transformer circuit 1; 3 phase fault on the Terry County (526735) to LG-DOCWEBR (526506) 69 kV line circuit 1, near Swisher.</p> <p>a. Apply fault at the Terry County 69 kV bus. b. Clear fault after 5 cycles by tripping the faulted line</p>
166	FLT166-3PH	<p>3 phase fault on the Bailey County (525028) to Curry (524822) 115 kV line circuit 1, near Bailey County.</p> <p>a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
167	FLT167-3PH	<p>3 phase fault on the Bailey County 115/69/13.2 kV (525028/525027/525025) transformer circuit 1, near Bailey County 115 kV.</p> <p>a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.</p>
168	FLT168-3PH	<p>3 phase fault on the Bailey County (525028) to EMU&VLY Tap (525019) 115 kV line circuit 1, near Bailey County.</p> <p>a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
169	FLT169-3PH	<p>3 phase fault on the Curry (524822) to DS#20 (524669) 115 kV line circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
170	FLT170-3PH	<p>3 phase fault on the Curry (524822) to Norris Tap (524764) 115 kV line circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
171	FLT171-3PH	<p>3 phase fault on the Curry (524822) to E_Clovis (524773) 115 kV line circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
172	FLT172-3PH	<p>3 phase fault on the Curry (524822) to FE_Clovis2 (524838) 115 kV line circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
173	FLT173-3PH	<p>3 phase fault on the Curry (524822) to Roosevelt (524908) 115 kV line circuit 2, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
174	FLT174-3PH	<p>3 phase fault on the Curry 115/69/13.2 kV (524822/524821/524819) transformer circuit 1, near Curry 115 kV.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted transformer.</p>
175	FLT175-3PH	<p>3 phase fault on the EMU&VLY Tap (525019) to Plant X (525480) 115 kV line circuit 1, near EMU&VLY Tap.</p> <p>a. Apply fault at the EMU&VLY Tap 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
176	FLT176-3PH	<p>3 phase fault on the EMU&VLY Tap (525019) to EMULESH&VLY (525019) 115 kV line circuit 1, near EMU&VLY Tap.</p> <p>a. Apply fault at the EMU&VLY Tap 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
177	FLT177-SB	Single phase fault with stuck breaker at Curry 115 kV (524822) a. Apply fault at the Curry 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Curry (524822) – Bailey County (525028) 115 kV d. Curry (524822) – FE-Clovis (524838) 115 kV
178	FLT178-SB	Single phase fault with stuck breaker at Curry 115 kV (524822) a. Apply fault at the Curry 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Curry (524822) – Norris TP (524764) 115 kV d. Curry (524822) – Bailey County (525028) 115 kV
179	FLT179-SB	Single phase fault with stuck breaker at Curry 115 kV (524822) a. Apply fault at the Curry 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Curry (524822) – Roosevelt (524908) 115 kV d. Curry (524822) – FE-Clovis (524838) 115 kV
180	FLT180-SB	Single phase fault with stuck breaker at Curry 115 kV (524822) a. Apply fault at the Curry 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Curry (524822) – DS#20 (524669) 115 kV d. Curry (524822) – FE-Clovis (524838) 115 kV
181	FLT181-SB	Single phase fault with stuck breaker at Bailey County 115 kV (525028) a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Bailey County (525028) – EMU&VLY Tap (525019) 115 kV d. Bailey County (525028) – Curry (524822) 115 kV
182	FLT182-SB	Single phase fault with stuck breaker at Bailey County 115 kV (525028) a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Bailey County 115/69/13.2 kV (525028/525027/525025) transformer d. Bailey County (525028) – Curry (524822) 115 kV
183	FLT183-PO	Prior Outage of Bailey County 115 kV (525028) to EMU&VLY Tap 115 kV (525019) circuit 1; 3 phase fault on Bailey County 115 kV (525028) to Curry 115 kV (524822) circuit 1, near Bailey County. a. Apply fault at the Bailey County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
184	FLT184-PO	<p>Prior Outage of Bailey County 115 kV (525028) to EMU&VLY Tap 115 kV (525019) circuit 1; 3 phase fault on Bailey County 115/69/13.2 kV (525028/525027/525025) transformer circuit 1, near Bailey County.</p> <p>a. Apply fault at the Bailey County 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
185	FLT185-PO	<p>Prior Outage of Roosevelt 115 kV (524908) to Curry 115 kV (524822) circuit 1; 3 phase fault on Curry 115 kV (524822) to Bailey County 115 kV (525028) circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line</p>
186	FLT186-PO	<p>Prior Outage of Roosevelt 115 kV (524908) to Curry 115 kV (524822) circuit 1; 3 phase fault on Curry 115 kV (524822) to DS#20 115 kV (524669) circuit 1, near Curry.</p> <p>a. Apply fault at the Curry 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line</p>
187	FLT187-PO	<p>Prior Outage of Bailey County 115 kV (525028) to Curry 115 kV (524822) circuit 1; 3 phase fault on Bailey County 115 kV (525028) to EMU&VLY Tap (525019) circuit 1, near Bailey County.</p> <p>a. Apply fault at the Bailey County 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
188	FLT188-PO	<p>Prior Outage of Bailey County 115 kV (525028) to Curry 115 kV (524822) circuit 1; 3 phase fault on Bailey County 115/69/13.2 kV (525028/525027/525025) transformer circuit 1, near Bailey County.</p> <p>a. Apply fault at the Bailey County 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
189	Remove	<p>3 phase fault on the G16-120-Tap (587964) to Crawfish Draw (560022) 345 kV line circuit 1, near G16-120-Tap.</p> <p>a. Apply fault at the G16-120-Tap 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
190	FLT190-3PH	<p>3 phase fault on the Crawfish Draw (560022) to Border (515458) 345 kV line circuit 1, near Crawfish Draw.</p> <p>a. Apply fault at the Crawfish Draw 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
191	FLT191-3PH	3 phase fault on the Crawfish Draw (560022) to OKU (511456) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
192	FLT192-3PH	3 phase fault on the Tuco 345/230/13.2 kV (525832/525830/525824) transformer circuit 1, near Tuco 345 kV bus. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
193	FLT193-3PH	3 phase fault on the OKU (511456) to Oklaun (599891) 345 kV line circuit 1, near OKU. a. Apply fault at the OKU 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line and remove the fault. c. Block the DC tie at OKU.
194	Removed	3 phase fault on the Tuco (525832) to Yoakum (526936) 345 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
195	FLT195-3PH	3 phase fault on the OKU (511456) to L.E.S (511468) 345 kV line circuit 1, near OKU. a. Apply fault at the OKU 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
196	FLT196-3PH	3 phase fault on the Tuco (525830) to Crawfish Draw (560021) 230 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
197	FLT197-3PH	3 phase fault on the Tuco (525830) to Jones (526337) 230 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
198	FLT198-3PH	<p>3 phase fault on the Tuco (525830) to Antelope (525840) 230 kV line circuit 1, near Tuco.</p> <p>a. Apply fault at the Tuco 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
199	FLT199-3PH	<p>3 phase fault on the Tuco (525830) to Tolk East (525524) 230 kV line circuit 1, near Tuco.</p> <p>a. Apply fault at the Tuco 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
200	FLT200-3PH	<p>3 phase fault on the Tuco (525830) to Carlisle (526161) 230 kV line circuit 1, near Tuco.</p> <p>a. Apply fault at the Tuco 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
201	FLT201-3PH	<p>3 phase fault on the Woodward (515375) to Thistle (539801) 345 kV line circuit 1, near Woodward.</p> <p>a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
202	FLT202-3PH	<p>3 phase fault on the Woodward (515375) to G16-003-Tap (560071) 345 kV line circuit 1, near Woodward.</p> <p>a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
203	FLT203-3PH	<p>3 phase fault on the Woodward (515375) to Tatonga (515407) 345 kV line circuit 1, near Woodward.</p> <p>a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
204	FLT204-3PH	3 phase fault on the Woodward (515375) to G07621119-20 (515599) 345 kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
205	FLT205-3PH	3 phase fault on the Woodward 345/138/13.2 kV (515375/515376/515795) transformer circuit 1, near Woodward. a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
206	FLT206-SB	Single phase fault with stuck breaker at Tuco (525832) a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Tuco 345/230/13.2 kV (525832/525830/525824) transformer d. Tuco (525832) – Crawfish Draw (560022) 345 kV
207	Removed	Single phase fault with stuck breaker at Tuco (525832) a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Tuco 345/230/13.2 kV (525832/525830/525824) transformer d. Tuco (525832) – OKU (511456) 345 kV
208	Removed	Single phase fault with stuck breaker at Tuco (525832) a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Tuco (525832) – G16-120-Tap (587964) 345 kV d. Tuco (525832) – OKU (511456) 345 kV
209	FLT209-SB	Single phase fault with stuck breaker at Woodward (515375) a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Woodward (515375) – Thistle (539801) 345 kV d. Woodward (515375) – Tatonga (515407) 345 kV
210	FLT210-SB	Single phase fault with stuck breaker at Woodward (515375) a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Woodward (515375) – G07621119-20 (515599) 345 kV d. Woodward (515375) – G16-003-Tap (515407) 345 kV

Cont. No.	Cont. Name	Description
211	FLT211-SB	Single phase fault with stuck breaker at Woodward (515375) a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Woodward (515375) – Tatonga (515407) 345 kV d. Woodward (515375) – Border (515458) 345 kV
212	FLT212-PO	Prior Outage of the Tuco 345/230/13.2 kV (525832/525830/525824) transformer circuit 1; 3 phase fault on the Tuco (525832) to Border (515458) 345 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
213	FLT213-PO	Prior Outage of the Tuco 345/230/13.2 kV (525832/525830/525824) transformer circuit 1; 3 phase fault on the Tuco (525832) to Crawfish Draw (560022) 345 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
214	Removed	Prior Outage of the Tuco (525832) to G16-120-Tap (587964) 345 kV line circuit 1; 3 phase fault on the Woodward (515375) to Tatonga (515407) 345 kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
215	Removed	Prior Outage of the Tuco (525832) to G16-120-Tap (587964) 345 kV line circuit 1; 3 phase fault on the Woodward (515375) to Thistle (539801) 345 kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
216	Removed	Prior Outage of the Tuco (525832) to G16-120-Tap (587964) 345 kV line circuit 1; 3 phase fault on the Woodward (515375) to G07621119-20 (515599) 345 kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
217	Removed	Prior Outage of the Border (515458) to G16-120-Tap (587964) 345 kV line circuit 1; 3 phase fault on the Tuco (525832) to Crawfish Draw (560022) 345 kV line circuit 1, near Tuco. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
218	Removed	Prior Outage of the Border (515458) to G16-120-Tap (587964) 345 kV line circuit 1; 3 phase fault on the Tuco 345/230/13.2 kV (525832/525830/525824) transformer circuit 1, near Tuco 345 kV bus. a. Apply fault at the Tuco 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
219	FLT219-3PH	3 phase fault on the Roadrunner (528025) to Red Bluff (528017) 115 kV line circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
220	FLT220-3PH	3 phase fault on the Roadrunner (528025) to Battle Axe (528040) 115 kV line circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
221	FLT221-3PH	3 phase fault on the Roadrunner (528025) to Agave Hills (528230) 115 kV line circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
222	FLT222-3PH	3 phase fault on the Roadrunner 345/115/13.2 kV (528025/528027/528023) transformer circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
223	FLT223-3PH	3 phase fault on the Roadrunner (528027) to Kiowa (527965) 345 kV line circuit 1, near Roadrunner (17W fault is Roadrunner to Potash JCT (527963) 230 kV). a. Apply fault at the Roadrunner 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
224	FLT224-3PH	<p>3 phase fault on the Potash Junction (527963) to Cunningham (527865) 230 kV line circuit 1, near Potash Junction.</p> <p>a. Apply fault at the Potash Junction 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
224	FLT225-3PH (17W)	<p>3 phase fault on the Potash Junction (527963) to Pecos (528179) 230 kV line circuit 1, near Potash Junction.</p> <p>a. Apply fault at the Potash Junction 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
225	FLT225-3PH (18S, 26S)	<p>3 phase fault on the Kiowa (527965) to North Loving (528185) 345 kV line circuit 1, near Kiowa.</p> <p>a. Apply fault at the Kiowa 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
226	FLT226-3PH (17W)	<p>3 phase fault on the Potash Junction 230/115/13.2 kV (527963/527962/527958) transformer circuit 1, near Potash Junction.</p> <p>a. Apply fault at the Potash Junction 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
226	FLT226-3PH (18S, 26S)	<p>3 phase fault on the Kiowa 345/115/13.2 kV (527965/527962/527964) transformer circuit 1, near Kiowa.</p> <p>a. Apply fault at the Kiowa 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
227	FLT227-3PH	<p>3 phase fault on the Ponderosa Tap (528239) to Ochoa (528232) 115 kV line circuit 1, near Ponderosa Tap.</p> <p>a. Apply fault at the Ponderosa Tap 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
228	FLT228-3PH	<p>3 phase fault on the Red Bluff (528018) to Wolf Camp Tap (528235) 115 kV line circuit 1, near Red Bluff.</p> <p>a. Apply fault at the Red Bluff 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
229	FLT229-3PH	3 phase fault on the Red Bluff (528018) to Sand Dunes (528016) 115 kV line circuit 1, near Red Bluff. a. Apply fault at the Red Bluff 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
230	FLT230-SB	Single phase fault with stuck breaker at Roadrunner (528025) a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Roadrunner (528025) – Red Bluff (528018) 115 kV d. Roadrunner (528025) – Agave Hills (528230) 115 kV
231	FLT231-SB	Single phase fault with stuck breaker at Roadrunner (528025) a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Roadrunner 345/115/13.2 kV (528025/528027/528023) transformer d. Roadrunner (528025) – Agave Hills (528230) 115 kV
232	FLT232-SB	Single phase fault with stuck breaker at Roadrunner (528025) a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Roadrunner 345/115/13.2 kV (528025/528027/528023) transformer d. Roadrunner (528025) – Battle Axe (528040) 115 kV
233	FLT233-PO	Prior Outage of the Roadrunner (528025) to Agave Hill (528230) 115 kV line circuit 1; 3 phase fault on the Roadrunner (528025) to Battle Axe (528040) 115 kV line circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
234	FLT234-PO	Prior Outage of the Roadrunner (528025) to Agave Hill (528230) 115 kV line circuit 1; 3 phase fault on the Roadrunner (528025) to Red Bluff (528018) 115 kV line circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
235	FLT235-PO	Prior Outage of the Roadrunner (528025) to Agave Hill (528230) 115 kV line circuit 1; 3 phase fault on the Roadrunner 345/115/13.2 kV (528025/528027/528023) transformer circuit 1, near Roadrunner. a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
236	FLT236-PO	<p>Prior Outage of the Roadrunner (528025) to Red Bluff (528018) 115 kV line circuit 1; 3 phase fault on the Roadrunner (528025) to Battle Axe (528040) 115 kV line circuit 1, near Roadrunner.</p> <p>a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
237	FLT237-PO	<p>Prior Outage of the Roadrunner (528025) to Red Bluff (528018) 115 kV line circuit 1; 3 phase fault on the Roadrunner (528025) to Agave Hill (528230) 115 kV line circuit 1, near Roadrunner.</p> <p>a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
238	FLT238-PO	<p>Prior Outage of the Roadrunner (528025) to Red Bluff (528018) 115 kV line circuit 1; 3 phase fault on the Roadrunner 345/115/13.2 kV (528025/528027/528023) transformer circuit 1, near Roadrunner.</p> <p>a. Apply fault at the Roadrunner 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
239	FLT239-3PH	<p>3 phase fault on the Crossroads (527656) to Tolk (525549) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
240	FLT240-3PH	<p>3 phase fault on the Crossroads (527656) to Roosevelt East (527655) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
241	FLT241-3PH	<p>3 phase fault on the Crossroads (527656) to Eddy County (527802) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

Cont. No.	Cont. Name	Description
242	FLT242-3PH	<p>3 phase fault on the Tolk East (525524) to Roosevelt (524911) 230 kV line circuit 1, near Tolk East.</p> <p>a. Apply fault at the Tolk East 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
243	FLT243-3PH	<p>3 phase fault on the Roosevelt East (527655) to Roosevelt West (527654) 345 kV line circuit 1, near Roosevelt East.</p> <p>a. Apply fault at the Roosevelt East 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
244	FLT244-3PH	<p>3 phase fault on the Eddy North (527799) to 7-Rivers (528095) 230 kV line circuit 1, near Eddy North.</p> <p>a. Apply fault at the Eddy North 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
245	FLT245-3PH	<p>3 phase fault on the Eddy North (527799) to Cunningham (527865) 230 kV line circuit 1, near Eddy North.</p> <p>a. Apply fault at the Eddy North 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
246	FLT246-3PH	<p>3 phase fault on the Eddy North (527799) to Chaves County (527483) 230 kV line circuit 1, near Eddy North.</p> <p>a. Apply fault at the Eddy North 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
247	FLT247-3PH	<p>3 phase fault on the Eddy North 230/115/13.2 kV (527799/527798/527797) transformer circuit 1, near Eddy North.</p> <p>a. Apply fault at the Eddy North 230 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>

Cont. No.	Cont. Name	Description
248	FLT248-SB	<p>Single phase fault with stuck breaker at Crossroads (527656)</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Crossroads (527656) – Tolk (525549) 345 kV d. Roadrunner (528025) – Roosevelt East (527655) 345 kV</p>
249	FLT249-SB	<p>Single phase fault with stuck breaker at Crossroads (527656)</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Crossroads (527656) – Tolk (525549) 345 kV d. Roadrunner (528025) – Eddy County (527802) 345 kV</p>
250	FLT250SB	<p>Single phase fault with stuck breaker at Crossroads (527656)</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Crossroads (527656) – Eddy County (527802) 345 kV d. Roadrunner (528025) – Roosevelt East (527655) 345 kV</p>
251	FLT251-PO	<p>Prior Outage of the Crossroads (527656) to Tolk (525549) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Eddy County (527802) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
252	FLT252-PO	<p>Prior Outage of the Crossroads (527656) to Tolk (525549) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Roosevelt East (527655) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
253	FLT253-PO	<p>Prior Outage of the Crossroads (527656) to Eddy County (527802) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Tolk (525549) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>
254	FLT254-PO	<p>Prior Outage of the Crossroads (527656) to Eddy County (527802) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Roosevelt East (527655) 345 kV line circuit 1, near Crossroads.</p> <p>a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>

Cont. No.	Cont. Name	Description
255	FLT255-PO	Prior Outage of the Crossroads (527656) to Roosevelt East (527655) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Eddy County (527802) 345 kV line circuit 1, near Crossroads. a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
256	FLT256-PO	Prior Outage of the Crossroads (527656) to Roosevelt East (527655) 345 kV line circuit 1; 3 phase fault on the Crossroads (527656) to Tolk (525549) 345 kV line circuit 1, near Crossroads. a. Apply fault at the Crossroads 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
257	Removed	3 phase fault on the Hobbs (527896) to Yoakum (526936) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
258	Removed	3 phase fault on the Hobbs (527896) to Kiowa (527965) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
259	Removed	3 phase fault on the Hobbs 345/230/13.2 kV (527896/527894/527895) transformer circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
260	Removed	3 phase fault on the Hobbs (527896) to Gaines Gen Tap (528611) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
261	Removed	3 phase fault on the Yoakum (526936) to Hobbs (527896) 345 kV line circuit 1, near Yoakum. a. Apply fault at the Yoakum 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
262	Removed	3 phase fault on the Gaines Gen Tap (528611) to Andrews (528604) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
263	Removed	3 phase fault on the Gaines Gen Tap (528611) to Andrews (528604) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
264	FLT264-3PH	3 phase fault on the G1579&G1580T (560059) to Yoakum (526935) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
265	FLT265-3PH	3 phase fault on the G1579&G1580T (560059) to Hobbs (527894) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
266	FLT266-SB	Single phase fault with stuck breaker at Hobbs (527894) 230 kV a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs (527894) – Cunningham (527867) 230 kV d. Hobbs 230/115/13.2 kV (527894/527891/527889) transformer
267	FLT267-SB	Single phase fault with stuck breaker at Hobbs (527894) 230 kV a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs (527894) – G1579&G1580T (560059) 230 kV d. Hobbs 230/115/13.2 kV (527894/527891/527889) transformer
268	FLT268-SB	Single phase fault with stuck breaker at Hobbs (527894) 230 kV a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs (527894) – G1579&G1580T (560059) 230 kV d. Hobbs (527894) – Cunningham (527867) 230 kV

Cont. No.	Cont. Name	Description
269	Removed	Single phase fault with stuck breaker at Hobbs (527896) 345 kV a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Hobbs (527896) – Yoakum (526936) 345 kV d. Hobbs (527896) – Kiowa (527965) 345 kV
270	FLT270-PO	Prior Outage of the Hobbs (527894) to Cunningham (527865) 230 kV line circuit 1; 3 phase fault on the Hobbs 230/115/13.2 kV (527894/527891/527890) transformer 1, near Hobbs. a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
271	FLT271-PO	Prior Outage of the Hobbs (527894) to Cunningham (527865) 230 kV line circuit 1; 3 phase fault on the G1579&G1580T (560059) to Hobbs (527894) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
272	FLT272-PO	Prior Outage of the Hobbs (527894) to Cunningham (527865) 230 kV line circuit 1; 3 phase fault on the G1579&G1580T (560059) to Yoakum (526935) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
273	FLT273-PO	Prior Outage of the Hobbs (527894) to Andrews (528604) 230 kV line circuit 1; 3 phase fault on the Hobbs 230/115/13.2 kV (527894/527891/527890) transformer 1, near Hobbs. a. Apply fault at the Hobbs 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
274	FLT274-PO	Prior Outage of the Hobbs (527894) to Andrews (528604) 230 kV line circuit 1; 3 phase fault on the G1579&G1580T (560059) to Hobbs (527894) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
275	FLT275-PO	Prior Outage of the Hobbs (527894) to Andrews (528604) 230 kV line circuit 1; 3 phase fault on the G1579&G1580T (560059) to Yoakum (526935) 230 kV line circuit 1, near G1579&G1580T. a. Apply fault at the G1579&G1580T 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
276	Removed	Prior Outage of the Hobbs (527894) to Yoakum (526936) 345 kV line circuit 1; 3 phase fault on the Hobbs (527896) to Kiowa (527965) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
277	Removed	Prior Outage of the Hobbs (527894) to Yoakum (526936) 345 kV line circuit 1; 3 phase fault on the Hobbs 345/230/13.2 kV (527896/527894/527895) transformer circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
278	Removed	Prior Outage of the Hobbs (527894) to Kiowa (527965) 345 kV line circuit 1; 3 phase fault on the Hobbs (527896) to Yoakum (526936) 345 kV line circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
279	Removed	Prior Outage of the Hobbs (527894) to Kiowa (527965) 345 kV line circuit 1; 3 phase fault on the Hobbs 345/230/13.2 kV (527896/527894/527895) transformer circuit 1, near Hobbs. a. Apply fault at the Hobbs 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
280	FLT280-3PH	3 phase fault on the Newhart (525460) to Kress (525192) 115 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
281	FLT281-3PH	3 phase fault on the Newhart (525460) to Castro County (524746) 115 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
282	FLT282-3PH	3 phase fault on the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
283	FLT283-3PH	3 phase fault on the Newhart 230/115/13.2 kV (525460/525461/525459) transformer circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
284	FLT284-3PH	3 phase fault on the Newhart (525461) to Swisher (525461) 230 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
285	FLT285-3PH	3 phase fault on the Newhart (525461) to Plant X (525481) 230 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
286	FLT286-3PH	3 phase fault on the Newhart (525461) to Potter County (523959) 230 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
287	FLT287-3PH	3 phase fault on the Castro County (524746) to DS#21 (524734) 115 kV line circuit 1, near Castro County. a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
288	FLT288-3PH	3 phase fault on the Castro County (524746) to Bethel Col (524757) 115 kV line circuit 1, near Castro County. a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
289	FLT289-3PH	3 phase fault on the Castro County (524746) to DS#22 (534694) 115 kV line circuit 1, near Castro County. a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
290	FLT290-3PH	3 phase fault on the Castro County (524746) to BC-Kelly (525050) 115 kV line circuit 1, near Castro County. a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
291	FLT291-3PH	3 phase fault on the Castro County 115/69/13.2 kV (524746/524745/524744) transformer circuit 1, near Castro County. a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
292	FLT292-SB	Single phase fault with stuck breaker at Newhart (525460) 115 kV a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Newhart (525460) – Kress (525192) 115 kV d. Newhart 230/115/13.2 kV (525461/565460/525459) transformer
293	FLT293-SB	Single phase fault with stuck breaker at Newhart (525460) 115 kV a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Newhart (525460) – Hart Industries (525124) 115 kV d. Newhart (525460) – Castro County (524746) 115 kV
294	FLT294-SB	Single phase fault with stuck breaker at Castro County (524746) 115 kV a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Castro County (524746) – DS#21 (524734) 115 kV d. Castro County (524746) – DS#22 (524694) 115 kV
295	FLT295-SB	Single phase fault with stuck breaker at Castro County (524746) 115 kV a. Apply fault at the Castro County 115 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Castro County (524746) – Bethel Col (524757) 115 kV d. Castro County (524746) – BC-Kelly (525050) 115 kV

Cont. No.	Cont. Name	Description
296	FLT296-PO	<p>Prior Outage of the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1; 3 phase fault on the Newhart (525460) to Castro County (524746) 115 kV line circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
297	FLT297-PO	<p>Prior Outage of the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1; 3 phase fault on the Newhart (525460) to Kress (525192) 115 kV line circuit 1, near Castro County.</p> <p>a. Apply fault at the Castro County 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
298	FLT298-PO	<p>Prior Outage of the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1; 3 phase fault on the Newhart 230/115/13.2 kV (525460/525461/525459) transformer circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
299	FLT299-PO	<p>Prior Outage of the Newhart (525460) to Castro County (524746) 115 kV line circuit 1; 3 phase fault on the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
300	FLT300-PO	<p>Prior Outage of the Newhart (525460) to Castro County (524746) 115 kV line circuit 1; 3 phase fault on the Newhart (525460) to Kress (525192) 115 kV line circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
301	FLT301-PO	<p>Prior Outage of the Newhart (525460) to Castro County (524746) 115 kV line circuit 1; 3 phase fault on the Newhart 230/115/13.2 kV (525460/525461/525459) transformer circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
302	FLT302-PO	<p>Prior Outage of the Newhart 230/115/13.2 kV (525461/525460/525459) transformer circuit 1; 3 phase fault on the Newhart (525460) to Hart Industries (525124) 115 kV line circuit 1, near Newhart.</p> <p>a. Apply fault at the Newhart 115 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>

Cont. No.	Cont. Name	Description
303	FLT303-PO	Prior Outage of the Newhart 230/115/13.2 kV (525461/525460/525459) transformer circuit 1; 3 phase fault on the Newhart (525460) to Kress (525192) 115 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
304	FLT304-PO	Prior Outage of the Newhart 230/115/13.2 kV (525461/525460/525459) transformer circuit 1; 3 phase fault on the Newhart (525460) to Castro County (524746) 115 kV line circuit 1, near Newhart. a. Apply fault at the Newhart 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
305	FLT305-3PH	3 phase fault on the Crawfish Draw (560022) to Border (515458) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
306	FLT306-3PH	3 phase fault on the Crawfish Draw (560022) to Tuco (525832) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
307	FLT307-3PH	3 phase fault on the Crawfish 345/230/13.2 kV (560022/560021/560023) transformer circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
308	Removed	3 phase fault on the Crawfish 765/345 kV (560100/560022) transformer circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 765 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
309	Removed	3 phase fault on the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 765 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
310	Removed	3 phase fault on the Crawfish Draw Tap (560103) to Seminole (560101) 765 kV line circuit 1, near Seminole. a. Apply fault at the Seminole 765 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
311	Removed	3 phase fault on the Seminole 765/345 kV (560100/560022) transformer circuit 1, near Seminole. a. Apply fault at the Seminole 765 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
312	FLT312-3PH	3 phase fault on the Crawfish Draw (560021) to Tuco (525830) 230 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
313	FLT313-SB	Single phase fault with stuck breaker at Crawfish Draw (560022) 345 kV a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Crawfish Draw (560021) – Border (515458) 345 kV d. Crawfish Draw (560021) – Tolk (525549) 345 kV
314	FLT314-SB	Single phase fault with stuck breaker at Crawfish Draw (560022) 345 kV a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 16 cycles and trip the following elements c. Crawfish Draw (560021) – Tuco (525832) 345 kV d. Crawfish Draw (560021) – Tolk (525549) 345 kV
315	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Crawfish Draw Tap (560103) to Seminole (560101) 765 kV line circuit 2, near Crawfish Draw. a. Apply fault at the Crawfish Draw 765 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
316	FLT316-3PH	3 phase fault on the Potter County (523961) to Tolk (525549) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
317	Removed	3 phase fault on the Potter County (523961) to Grapevine (560035) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
318	FLT318-3PH	3 phase fault on the Potter County (523961) to Hitchland (523097) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
319	FLT319-3PH	3 phase fault on the Potter County 345/230/13 kV (523961/523959/523957) transformer circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
320	Removed	3 phase fault on the Chisholm (511553) to Grapevine (560035) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
321	FLT321-3PH	3 phase fault on the Chisholm (511553) to Border (515458) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
322	FLT322-3PH	3 phase fault on the Chisholm (511553) to G16-037-Tap (560078) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
323	FLT323-3PH	3 phase fault on the Border (515458) to Chisholm (511553) 345 kV line circuit 1, near Border. a. Apply fault at the Border 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
324	FLT324-3PH	3 phase fault on the Border (515458) to Woodward (515375) 345 kV line circuit 1, near Border. a. Apply fault at the Border 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
325	FLT325-PO	Prior Outage of the Potter County (523961) to Hitchland (523097) 345 kV line circuit 1; 3 phase fault on the Potter County (523961) to Tolk (525549) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
326	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Potter County (523961) to Grapevine (560035) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
327	FLT327-PO	Prior Outage of the Potter County (523961) to Tolk (525549) 345 kV line circuit 1; 3 phase fault on the Potter County (523961) to Hitchland (523097) 345 kV line circuit 1, near Potter County. a. Apply fault at the Potter County 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
328	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Chisholm (511553) to Grapevine (560035) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
329	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Chisholm (511553) to Border (515458) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
330	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Chisholm (511553) to G16-037-Tap (560078) 345 kV line circuit 1, near Chisholm. a. Apply fault at the Chisholm 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
331	FLT331-PO	Prior Outage of the Border (515458) to Crawfish Draw (560022) 345 kV line circuit 1; 3 phase fault on the Border (515458) to Chisholm (511553) 345 kV line circuit 1, near Border. a. Apply fault at the Border 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
332	FLT332-PO	Prior Outage of the Border (515458) to Crawfish Draw (560022) 345 kV line circuit 1; 3 phase fault on the Border (515458) to Woodward (515375) 345 kV line circuit 1, near Border. a. Apply fault at the Border 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
333	FLT333-PO	Prior Outage of the Crawfish Draw (560022) to Tolk (525549) 345 kV line circuit 1; 3 phase fault on the Crawfish Draw (560022) to Border (515458) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
334	FLT334-PO	Prior Outage of the Border (515458) to Crawfish Draw (560022) 345 kV line circuit 1; 3 phase fault on the Crawfish Draw (560022) to OKU (511456) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
335	FLT335-PO	Prior Outage of the Border (515458) to Crawfish Draw (560022) 345 kV line circuit 1; 3 phase fault on the Crawfish Draw (560022) to Tolk (525549) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
336	FLT336-PO	Prior Outage of the Crawfish Draw (560022) to Tuco (525832) 345 kV line circuit 1; 3 phase fault on the Crawfish Draw (560022) to Tolk (525832) 345 kV line circuit 1, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
337	Removed	Prior Outage of the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1; 3 phase fault on the Crawfish Draw (560022) to G16-120-Tap (587964) 345 kV line circuit 2, near Crawfish Draw. a. Apply fault at the Crawfish Draw 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
338	FLT338-PO	<p>Prior Outage of the Border (515458) to Crawfish Draw (560022) 345 kV line circuit 1; 3 phase fault on the Crawfish Draw 345/230/13 kV (560022/560021/560023) transformer, near Crawfish Draw.</p> <p>a. Apply fault at the Crawfish Draw 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
339	Removed	<p>3 phase fault on the Crawfish Draw (560100) to Crawfish Draw Tap (560103) 765 kV line circuit 1, near Crawfish Draw Tap.</p> <p>a. Apply fault at the Crawfish Draw 765 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
340	Removed	<p>3 phase fault on the Seminole (560101) to Crawfish Draw Tap (560103) 765 kV line circuit 1, near Crawfish Draw Tap.</p> <p>a. Apply fault at the Crawfish Draw 765 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p>
341	FLT341-3PH	<p>3 phase fault on the Hitchland (523097) to Finney (523853) 345 kV line circuit 1, near Hitchland.</p> <p>a. Apply fault at the Hitchland 345 kV bus.</p> <p>b. Clear fault after 5 cycles by tripping the faulted line.</p> <p>c. Wait 20 cycles, and then re-close the line in (b) back into the fault.</p> <p>d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>

SECTION 3: STABILITY ANALYSIS

The objective of the Stability Analysis was to determine the impacts of the generator interconnections on the stability and voltage recovery on the SPP transmission system. If problems with stability or voltage recovery were identified, the need for reactive compensation or system upgrades was investigated.

3.1 Approach

SPP provided MEPEPI with the following five power flow cases:

- MDWG16-17W_DIS1602_G06
- MDWG16-18S_DIS1602_G06
- MDWG16-26S_DIS1602_G06

The power flow cases above were used in the DISIS-2016-002-1 stability datasets. Each case was examined prior to the Stability Analysis to ensure the case contained any previously queued projects listed in Table 2-3 and previously assigned upgrades. The following transmission elements were implemented in the power flow case:

- Kiowa to Hobbs 345 kV circuit #1
- Eddy County to Kiowa 345 kV circuit #1
- Kiowa 345/115 kV transformer #1
- Convert Potash Junction to Road Runner 230 kV to Kiowa to Road Runner 230 kV circuit #1
- Road Runner 345/115 kV transformer
- Road Runner 115 kV SVC (200/-50 MVAR)
- Kiowa to North Loving 345 kV circuit #1
- North Loving 345/115 kV transformer #1
- Hopi Sub to North Loving 115 kV circuit #1
- China Draw to North Loving 115 kV circuit #1
- China Draw to North Loving 345 kV circuit #1
- China Draw 345/115 kV transformer #1
- China Draw to Wood Draw 115 kV circuit #1
- China Draw 115 kV SVC (200/-50 MVAR)

After implementing and confirming the above transmission elements were implemented and confirmed to be in the case, there was no suspect power flow data in the study area. The dynamic datasets were also verified and stable initial system conditions (i.e., “flat lines”) were achieved. Three-phase and single phase-to-ground faults listed in Table 2-3 were examined. Single-phase fault impedances were calculated for each season to result in a voltage of approximately 60% of

the pre-fault voltage. Refer to Table 3-1 for a list of the calculated single-phase fault impedances utilized.

**Table 3-1
Calculated Single-Phase Fault Impedances**

Cont. No.*	Cont. Name	Single-Phase Fault Impedance (MVA)			Cont. No.*	Cont. Name	Single-Phase Fault Impedance (MVA)		
		2017 Winter	2018 Summer	2026 Summer			2017 Winter	2018 Summer	2026 Summer
14	FLT14_SB	-1375.0	-1375.0	-1375.0	150	FLT150_SB	-2812.5	-2812.5	-2812.5
15	FLT15_SB	-1125.0	-1125.0	-1125.0	151	FLT151_SB	-1625.0	-1500.0	-1500.0
40	FLT40_SB	-1375.0	-1375.0	-1500.0	152	FLT152_SB	-1625.0	-1500.0	-1500.0
41	FLT41_SB	-1375.0	-1375.0	-1500.0	164	FLT164_SB	-500.0	-500.0	-562.5
43	FLT43_SB	-1250.0	-1250.0	-1375.0	177	FLT177_SB	-1375.0	-1375.0	-1375.0
44	FLT44_SB	-1250.0	-1250.0	-1375.0	178	FLT178_SB	-1375.0	-1375.0	-1375.0
60	FLT60_SB	-6062.5	-5656.3	-6062.5	179	FLT179_SB	-1375.0	-1375.0	-1375.0
61	FLT61_SB	-6062.5	-5656.3	-6062.5	180	FLT180_SB	-1375.0	-1375.0	-1375.0
62	FLT62_SB	-1875.0	-1750.0	-1875.0	181	FLT181_SB	-687.5	-625.0	-750.0
63	FLT63_SB	-6062.5	-5656.3	-6062.5	182	FLT182_SB	-687.5	-625.0	-750.0
64	FLT64_SB	-6062.5	-5656.3	-6062.5	206	FLT206_SB	-8500.0	-8906.3	-10125.0
65	FLT65_SB	-6062.5	-5656.3	-6062.5	209	FLT209_SB	-7687.5	-8500.0	-8500.0
92	FLT92_SB	-4031.3	-3828.1	-4437.5	210	FLT210_SB	-7687.5	-8500.0	-8500.0
93	FLT93_SB	-4031.3	-3828.1	-4437.5	211	FLT211_SB	-7687.5	-8500.0	-8500.0
94	FLT94_SB	-2406.3	-2203.1	-2406.3	230	FLT230_SB	-875.0	-1062.5	-1125.0
95	FLT95_SB	-2101.6	-2101.6	-2406.3	231	FLT231_SB	-875.0	-1062.5	-1125.0
96	FLT96_SB	-2812.5	-2812.5	-3015.6	232	FLT232_SB	-875.0	-1062.5	-1125.0
97	FLT97_SB	-2812.5	-2812.5	-3015.6	248	FLT248_SB	-3421.9	-3218.8	-3625.0
98	FLT98_SB	-2812.5	-2812.5	-3015.6	249	FLT249_SB	-3421.9	-3218.8	-3625.0
99	FLT99_SB	-2812.5	-2812.5	-3015.6	250	FLT250_SB	-3421.9	-3218.8	-3625.0
123	FLT123_SB	-3218.8	-3218.8	-3421.9	266	FLT266_SB	-4031.3	-4437.5	-4437.5
124	FLT124_SB	-3218.8	-3218.8	-3421.9	267	FLT267_SB	-4031.3	-4437.5	-4437.5
125	FLT125_SB	-3218.8	-3218.8	-3421.9	268	FLT268_SB	-4031.3	-4437.5	-4437.5
126	FLT126_SB	-3218.8	-3218.8	-3421.9	292	FLT292_SB	-2203.1	-2101.6	-2101.6
127	FLT127_SB	-3421.9	-3421.9	-3421.9	293	FLT293_SB	-2203.1	-2101.6	-2101.6
128	FLT128_SB	-3421.9	-3421.9	-3421.9	294	FLT294_SB	-1375.0	-1250.0	-1250.0
129	FLT129_SB	-3828.1	-4031.3	-4031.3	295	FLT295_SB	-1375.0	-1250.0	-1250.0
130	FLT130_SB	-3828.1	-4031.3	-4031.3	313	FLT313_SB	-8500.0	-9312.5	-10125.0
148	FLT148_SB	-2812.5	-2812.5	-2812.5	314	FLT314_SB	-8500.0	-9312.5	-10125.0
149	FLT149_SB	-2812.5	-2812.5	-2812.5					

*Refer to Table 2-3 for a description of the contingency scenario

Bus voltages, machine rotor angles, and previously queued generation in the study area were monitored in addition to bus voltages and machine rotor angles in the following areas:

- 520 AEPW
- 524 OKGE
- 525 WFEC
- 531 MIDW
- 534 SUNC
- 536 WERE

Requested and previously queued generation outside the above study area was also monitored.

The results of the analysis determined if reactive compensation or system upgrades were required to obtain acceptable system performance. If additional reactive compensation was required, the size, type, and location were determined. The proposed reactive reinforcements would ensure the wind or solar farm meets FERC Order 661A low voltage requirements and return the wind or solar farm to its pre-disturbance operating voltage. If the results indicated the need for fast responding reactive support, dynamic support such as an SVC or STATCOM was investigated.

3.2 Stability Analysis Results

The Stability Analysis determined that there were multiple contingencies across all seasons that resulted in system/voltage instability, generation tripping offline, and poor post-fault voltage recovery when all generation interconnection requests were at 100% output. The 17W case was observed to have many non-damped voltage oscillations for faults throughout the SPP study area. It can be observed that the 18S and 26S case, which have additional projects implemented from 17W, have improved voltage responses.

Refer to Table 3-2 for a summary of the Stability Analysis results for the contingencies listed in Table 2-3. Table 3-2 is a summary of the stability results for the 2017 Winter Peak, 2018 Summer Peak, and 2026 Summer Peak conditions and states whether the system remained stable or generation tripped offline, if acceptable voltage recovery was observed after the fault was cleared, and if the voltage recovered to above 0.9 p.u. and below 1.1 p.u. post fault steady-state conditions. Voltage recovery criteria includes ensuring that the transient voltage recovery is between 0.7 p.u. and 1.2 p.u. and ending in a steady-state voltage (for N-1 contingencies) at the pre-contingent level or at least above 0.9 p.u. and below 1.1. p.u. The results presented here in Table 3-2 do not include the transmission reinforcements identified in Section 3.1.

Refer to Appendix B, Appendix C, and Appendix D for a complete set of plots for all contingencies for 2017 Winter Peak, 2018 Summer Peak, and 2026 Summer Peak conditions, respectively.

Table 3-2
Stability Analysis Summary of Results for 2017 Winter, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
1	FLT01-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
2	FLT02-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
3	FLT03-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
4	FLT04-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
5	FLT05-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
14	FLT14-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
15	FLT15-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
19	FLT19-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
20	FLT20-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
21	FLT21-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
22	FLT22-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
23	FLT23-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
24	FLT24-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
26	FLT26-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
27	FLT27-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
28	FLT28-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
29	FLT29-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
30	FLT30-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
31	FLT31-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
32	FLT32-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
33	FLT33-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
34	FLT34-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
35	FLT35-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
36	FLT36-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
37	FLT37-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
38	FLT38-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
40	FLT40-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
41	FLT41-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
43	FLT43-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
44	FLT44-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
45	FLT45-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
46	FLT46-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
47	FLT47-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
48	FLT48-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
49	FLT49-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
51	FLT51-3PH	System Instability				System Instability				-	-	Compliant	Stable
52	FLT52-3PH	System Instability				System Instability				-	-	Compliant	Stable
53	FLT53-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
54	FLT54-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
55	FLT55-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
56	FLT56-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
57	FLT57-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
58	FLT58-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
59	FLT59-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
60	FLT60-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
61	FLT61-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
62	FLT62-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	V < 0.9 p.u.	Stable
63	FLT63-SB	System Instability				-	-	Volt oscillations	Unstable ¹	-	-	V < 0.9 p.u.	Stable
64	FLT64-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
65	FLT65-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
66	FLT66-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
67	FLT67-PO	System Instability				System Instability				-	-	Compliant	Stable
68	FLT68-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
69	FLT69-PO	System Instability				System Instability				-	-	Compliant	Stable
70	FLT70-PO	System Instability				System Instability				-	-	Compliant	Stable
72	FLT72-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
73	FLT73-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
74	FLT74-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
75	FLT75-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
76	FLT76-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
77	FLT77-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
78	FLT78-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
79	FLT79-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
80	FLT80-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
81	FLT81-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
82	FLT82-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
83	FLT83-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
84	FLT84-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
85	FLT85-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
86	FLT86-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
87	FLT87-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
88	FLT88-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
89	FLT89-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
90	FLT90-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
91	FLT91-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
92	FLT92-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
93	FLT93-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
94	FLT94-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
95	FLT95-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
96	FLT96-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
97	FLT97-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
98	FLT98-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
99	FLT99-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
100	FLT100-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
101	FLT101-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
102	FLT102-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
103	FLT103-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
104	FLT104-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
105	FLT105-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
106	FLT106-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
107	FLT107-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
108	FLT108-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
109	FLT109-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
110	FLT110-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
111	FLT111-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
112	FLT112-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
113	FLT113-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
114	FLT114-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
115	FLT115-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
116	FLT116-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
117	FLT117-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
118	FLT118-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
119	FLT119-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
120	FLT120-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
121	FLT121-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
122	FLT122-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
123	FLT123-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
124	FLT124-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
125	FLT125-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
126	FLT126-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
127	FLT127-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
128	FLT128-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
129	FLT129-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
130	FLT130-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
131	FLT131-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
132	FLT132-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
133	FLT133-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
134	FLT134-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
135	FLT135-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
136	FLT136-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
137	FLT137-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
138	FLT138-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
139	FLT139-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
140	FLT140-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
141	FLT141-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
142	FLT142-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
143	FLT143-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
144	FLT144-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
145	FLT145-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
146	FLT146-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
147	FLT147-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
148	FLT148-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
149	FLT149-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
150	FLT150-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
151	FLT151-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
152	FLT152-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
153	FLT153-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
154	FLT154-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
155	FLT155-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
156	FLT156-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
157	FLT157-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
158	FLT158-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
159	FLT159-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
160	FLT160-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
161	FLT161-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
162	FLT162-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
163	FLT163-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
164	FLT164-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
165	FLT165-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
166	FLT166-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
167	FLT167-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
168	FLT168-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
169	FLT169-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
170	FLT170-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
171	FLT171-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
172	FLT172-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
173	FLT173-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
174	FLT174-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
175	FLT175-3PH	-	-	Compliant	Stable	-	-	V < 0.9 p.u.	Stable	-	-	Compliant	Stable
176	FLT176-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
177	FLT177-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
178	FLT178-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
179	FLT179-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
180	FLT180-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
181	FLT181-SB	-	-	V < 0.9 p.u.	Stable	-	-	V < 0.9 p.u.	Stable	-	-	Compliant	Stable
182	FLT182-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
183	FLT183-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
184	FLT184-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
185	FLT185-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
186	FLT186-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
187	FLT187-PO	-	-	Compliant	Stable	-	-	V < 0.9 p.u.	Stable	-	-	Compliant	Stable
188	FLT188-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
190	FLT190-3PH	System Instability				System Instability				-	-	Compliant	Stable
191	FLT191-3PH	System Instability				System Instability				-	-	Compliant	Stable
192	FLT192-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
193	FLT193-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
195	FLT195-3PH	System Instability				System Instability				-	-	Volt oscillations	Unstable ¹
196	FLT196-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
197	FLT197-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
199	FLT199-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
200	FLT200-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
201	FLT201-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
202	FLT202-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
203	FLT203-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
204	FLT204-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
205	FLT205-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
206	FLT206-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
209	FLT209-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
210	FLT210-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
211	FLT211-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
212	FLT212-PO	System Instability				System Instability				-	-	Volt oscillations	Unstable ¹
213	FLT213-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
219	FLT219-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
220	FLT220-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
221	FLT221-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
222	FLT222-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
223	FLT223-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
224	FLT224-3PH (17W)	-	-	Volt oscillations	Unstable ¹	N/A	N/A	N/A	N/A	-	-	Compliant	Stable
224	FLT224-3PH (18S, 26S)	N/A	N/A	N/A	N/A	-	-	Compliant	Stable	-	-	Compliant	Stable
225	FLT225-3PH (17W)	-	-	Volt oscillations	Unstable ¹	N/A	N/A	N/A	N/A	-	-	Compliant	Stable
225	FLT225-3PH (18S, 26S)	N/A	N/A	N/A	N/A	-	-	Compliant	Stable	-	-	Compliant	Stable
226	FLT226-3PH (17W)	-	-	Volt oscillations	Unstable ¹	N/A	N/A	N/A	N/A	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
226	FLT226-3PH (18S, 26S)	N/A	N/A	N/A	N/A	-	-	Compliant	Stable	-	-	Compliant	Stable
227	FLT227-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
228	FLT228-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
229	FLT229-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
230	FLT230-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
231	FLT231-SB	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
232	FLT232-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
233	FLT233-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
234	FLT234-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
235	FLT235-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
236	FLT236-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
237	FLT237-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
238	FLT238-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
239	FLT239-3PH	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips
241	FLT241-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
242	FLT242-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
244	FLT244-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
245	FLT245-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
246	FLT246-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
247	FLT247-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
248	FLT248-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹
249	FLT249-SB	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips
250	FLT250-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
251	FLT251-PO	Steady-State Divergence				Steady-State Divergence				Steady-State Divergence			
252	FLT252-PO	Steady-State Divergence				Steady-State Divergence				Steady-State Divergence			
253	FLT253-PO	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips	-	-	Compliant	Gen Trips
264	FLT264-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
265	FLT265-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
266	FLT266-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
267	FLT267-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
268	FLT268-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
270	FLT270-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
271	FLT271-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
272	FLT272-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
273	FLT273-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
274	FLT274-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
275	FLT275-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
280	FLT280-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
281	FLT281-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
282	FLT282-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
283	FLT283-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
284	FLT284-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
285	FLT285-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
286	FLT286-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
287	FLT287-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
289	FLT289-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
290	FLT290-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
291	FLT291-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
292	FLT292-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
293	FLT293-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
294	FLT294-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
295	FLT295-SB	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
296	FLT296-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
297	FLT297-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
298	FLT298-PO	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable	-	-	Compliant	Stable
299	FLT299-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
300	FLT300-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
301	FLT301-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
302	FLT302-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
303	FLT303-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
304	FLT304-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
305	FLT305-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
306	FLT306-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
307	FLT307-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
312	FLT312-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
313	FLT313-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
314	FLT314-SB	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
316	FLT316-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable

Note 1: Poor voltage damping

Table 3-2 (continued)
Stability Analysis Summary of Results for 2017 Winter Peak, 2018 Summer, and 2026 Summer Peak Conditions

Cont. No.	Cont. Name	2017 Winter Peak				2018 Summer Peak				2026 Summer Peak			
		Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability	Voltage Recovery		Post Fault Steady-State Voltage	System Stability
		Less than 0.70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.			Less than .70 p.u.	Greater than 1.20 p.u.		
318	FLT318-3PH	System Instability				System Instability				-	-	Compliant	Stable
319	FLT319-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
321	FLT321-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
322	FLT322-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
323	FLT323-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
324	FLT324-3PH	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
325	FLT325-PO	Steady-State Divergence				Steady-State Divergence				-	-	Volt oscillations	Unstable ¹
327	FLT327-PO	Steady-State Divergence				Steady-State Divergence				-	-	Compliant	Stable
331	FLT331-PO	Steady-State Divergence				Steady-State Divergence				-	-	Compliant	Stable
332	FLT332-PO	Steady-State Divergence				Steady-State Divergence				-	-	Compliant	Stable
333	FLT333-PO	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable
334	FLT334-PO	Steady-State Divergence				Steady-State Divergence				-	-	Volt oscillations	Unstable ¹
335	FLT335-PO	Steady-State Divergence				Steady-State Divergence				-	-	Volt oscillations	Unstable ¹
336	FLT336-PO	-	-	Volt oscillations	Unstable ¹	-	-	Volt oscillations	Unstable ¹	-	-	Compliant	Stable
338	FLT338-PO	Steady-State Divergence				Steady-State Divergence				-	-	Volt oscillations	Unstable ¹
341	FLT341-3PH	-	-	Compliant	Stable	-	-	Compliant	Stable	-	-	Compliant	Stable

Note 1: Poor voltage damping

To mitigate the system/voltage instability, voltage violations, generation tripping offline, and poor post-fault steady-state voltages, the following upgrades were provided by SPP and implemented (upgrades provided here are required for 17W season and thus, implemented in remaining years):

- Hobbs to Yoakum to Tuco 345 kV circuit #1 (advancement in 17W and 18S)
- Yoakum 345/230 kV transformer #1 (advancement in 17W and 18S)
- Beaver to Clark County 345 kV circuit #1(Previously assigned)
- Border 345 kV 50 MVAR capacitor bank
- Crawfish Draw 345 kV 200 MVAR capacitor bank & +225/-150 MVAR SVC
- Crossroads 345 kV 200 MVAR capacitor bank
- Oklaunion 345 kV 130 MVAR capacitor bank & +300/-150 MVAR SVC
- Potter County 345 kV 100 MVAR capacitor bank
- Crawfish Draw to Lawton Eastside 345 kV circuit #1
- Chisholm to Potter County 345 kV circuit #1

FLT51-3PH, a three-phase fault resulting in the loss of Deaf Smith to Plant X 230 kV was observed to result in a voltage collapse for 17W and 18S conditions. Refer to Figure 3-1 for a representative comparison plot of several area buses for the 2017 Winter Peak case with and without system upgrades. It can be observed that the upgrades in the study area support system voltages and provide reactive reinforcement for the system to recover within SPP criteria.

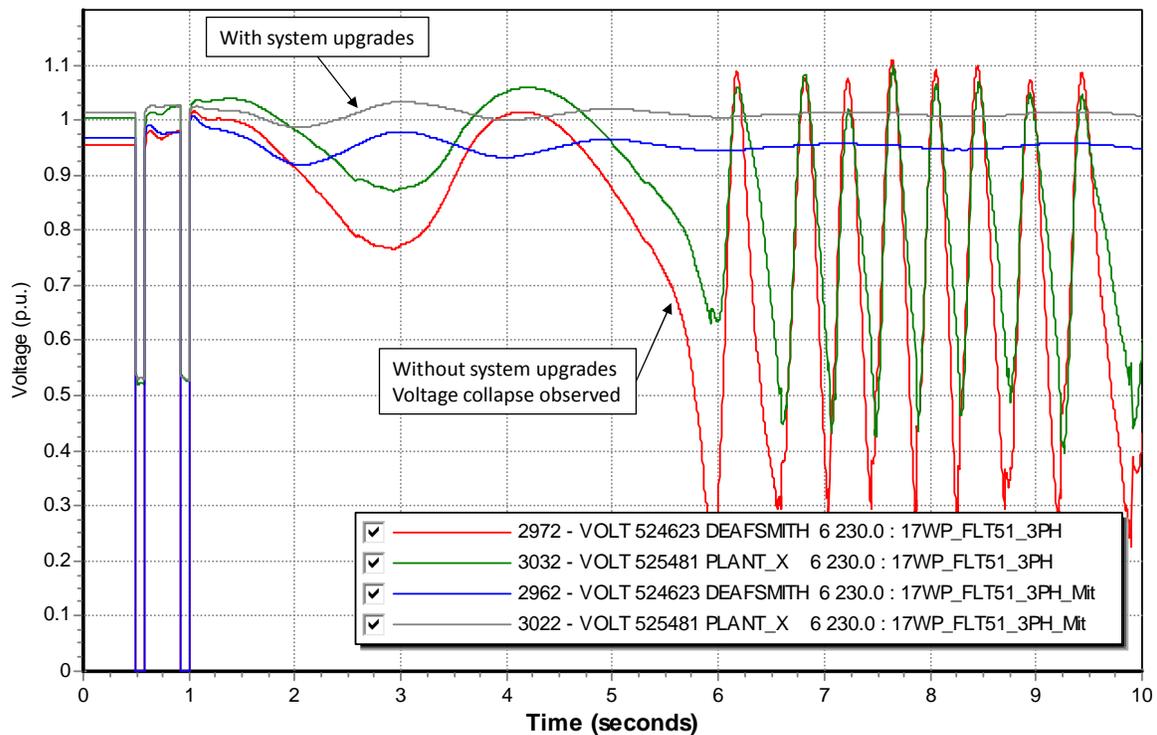


Figure 3-1: Plot of voltages for 17W conditions with and without system upgrades for FLT51.

FLT62-SB, a single phase fault with a stuck breaker results in the loss of Deaf Smith to Bushland 230 kV and Deaf Smith to Plant X 230 kV, was observed to have voltage instability and growing voltage oscillations. Refer to Figure 3-2 for a representative voltage comparison plot of Deaf Smith 230 kV and Plant X 230 kV area voltages for the 17W case with and without system upgrades. The upgrades identified in this section show the voltage oscillations and swings are non-existent and the area exhibits satisfactory voltage response. The system recovered within SPP criteria.

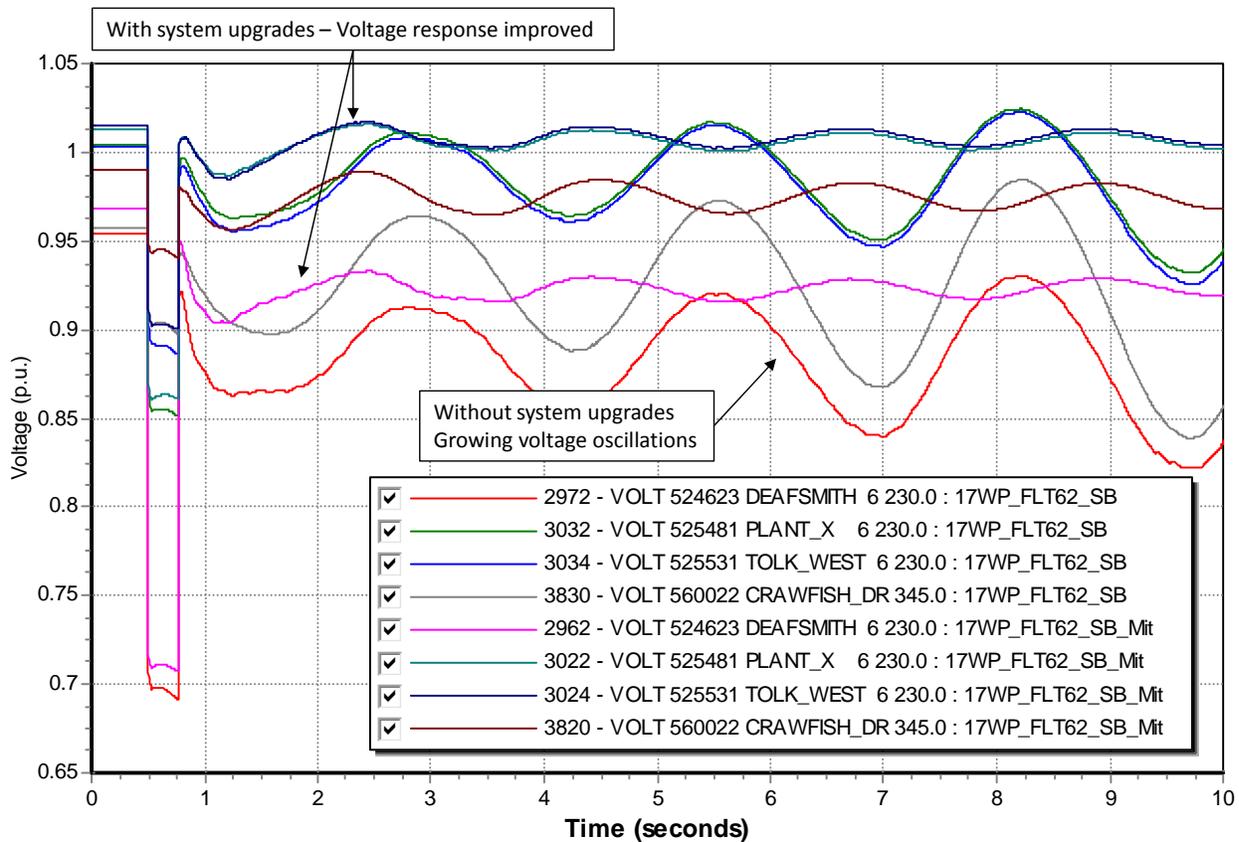


Figure 3-2: Representative plot of area voltages for 17W conditions with and without system upgrades for FLT62.

FLT81-3PH, a three-phase fault resulting in the loss of the Yoakum 230/115 kV transformer, was observed to have non-damped voltage oscillations in the SPP system for 17W and 18S conditions. Refer to Figure 3-3 for a representative comparison plot of several area buses for the 2017 Winter Peak case with and without system upgrades. It can be observed that the upgrades in the study area help dampen the voltage oscillations after the fault is cleared and the system recovered within SPP criteria.

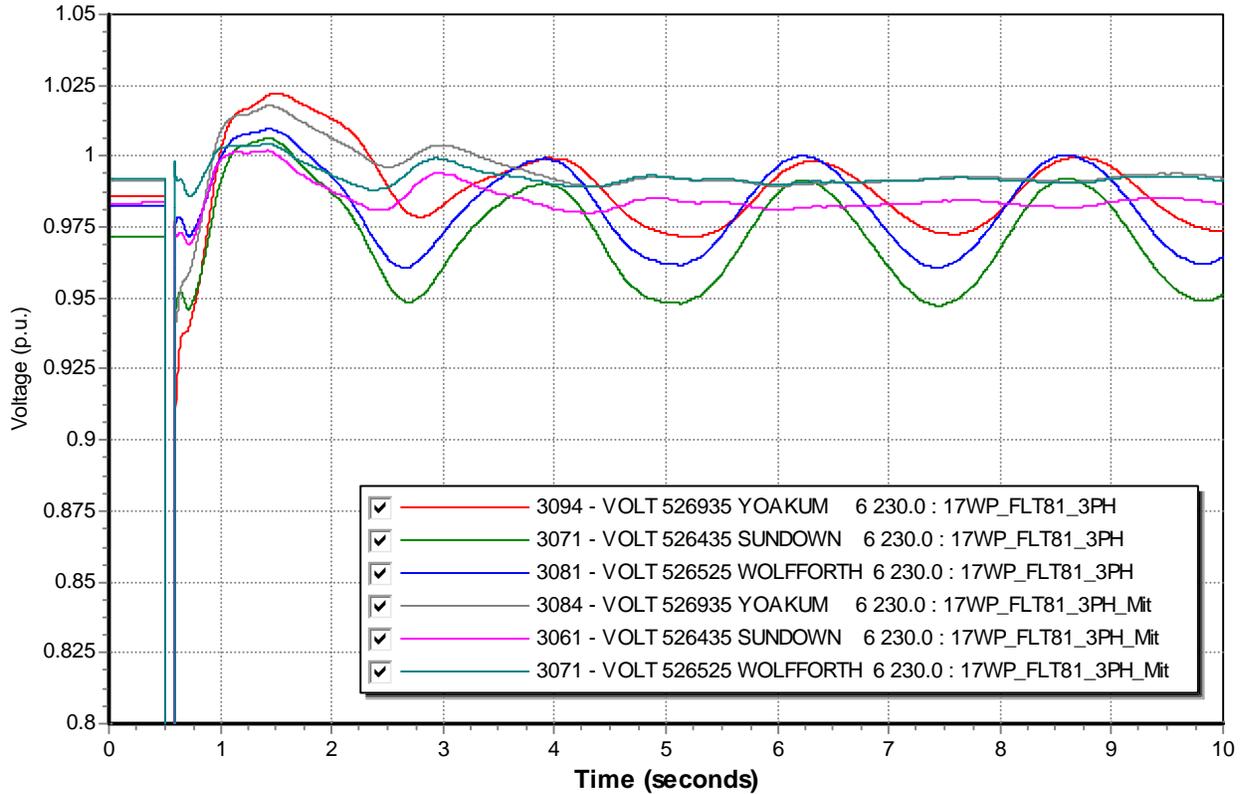


Figure 3-3: Representative plot of area voltages for 17W conditions with and without system upgrades for FLT81.

The limiting contingencies for the Group 06 study were observed to be tie-line outages in the Oklaunion region. FLT191-3PH, a three-phase fault resulting in the loss of Crawfish Draw to Oklaunion 345 kV was observed as the limiting contingency. This fault resulted in the loss of 161 mile line which connects the HVDC line to the rest of the system. When this line is loss, the fault resulted in voltage collapse in the Crawfish Draw region. Refer to Figure 3-4 for a representative voltage comparison plot of Crawfish Draw and Border area voltages for the 17W case with and without system upgrades. Refer to Figure 3-5 for a representative plot of area rotor angles with and without system upgrades. It can be observed that the reactive reinforcements and line upgrades in the region improve the system response and all voltage and rotor angles recover within SPP criteria.

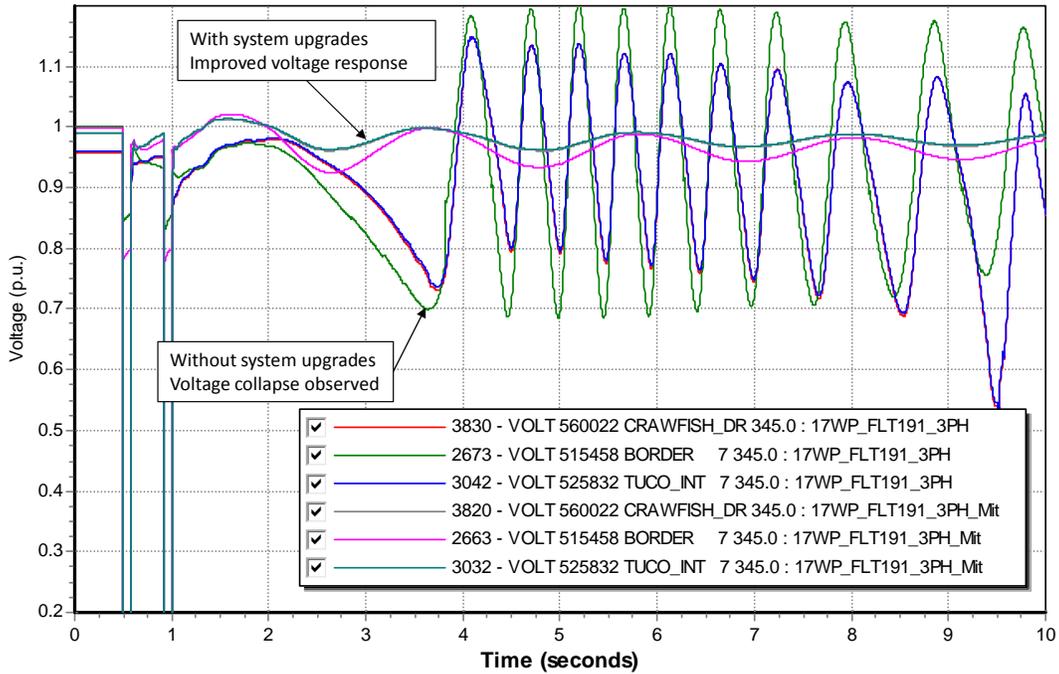


Figure 3-4: Representative plot of Crawfish Draw and OKU area voltages for 17W conditions with and without system upgrades for FLT191

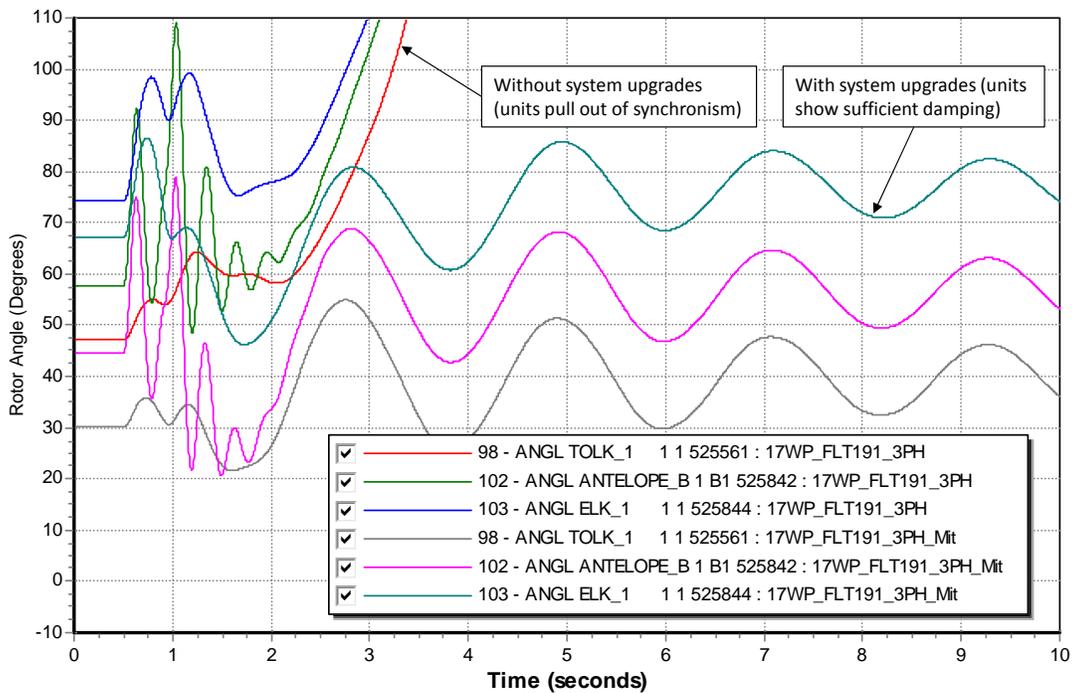


Figure 3-5: Comparison plot of area generator rotor angles for 17W conditions with and without system upgrades for FLT191.

Additionally, a voltage collapse was observed for the tie-line outage of Potter County to Hitchland 345 kV (FLT318-3PH) without system reinforcements. With the system upgrades identified in this section, all voltages and rotor angles recovered within SPP criteria. Refer to Figure 3-6 for a representative voltage comparison plot of Crawfish Draw and Potter County area voltages for the 17W case with and without system upgrades. Refer to Figure 3-7 for a representative plot of area rotor angles with and without system upgrades. It can be observed that the reactive reinforcements and line upgrades in the region improve the system response and all voltage and rotor angles recover within SPP criteria.

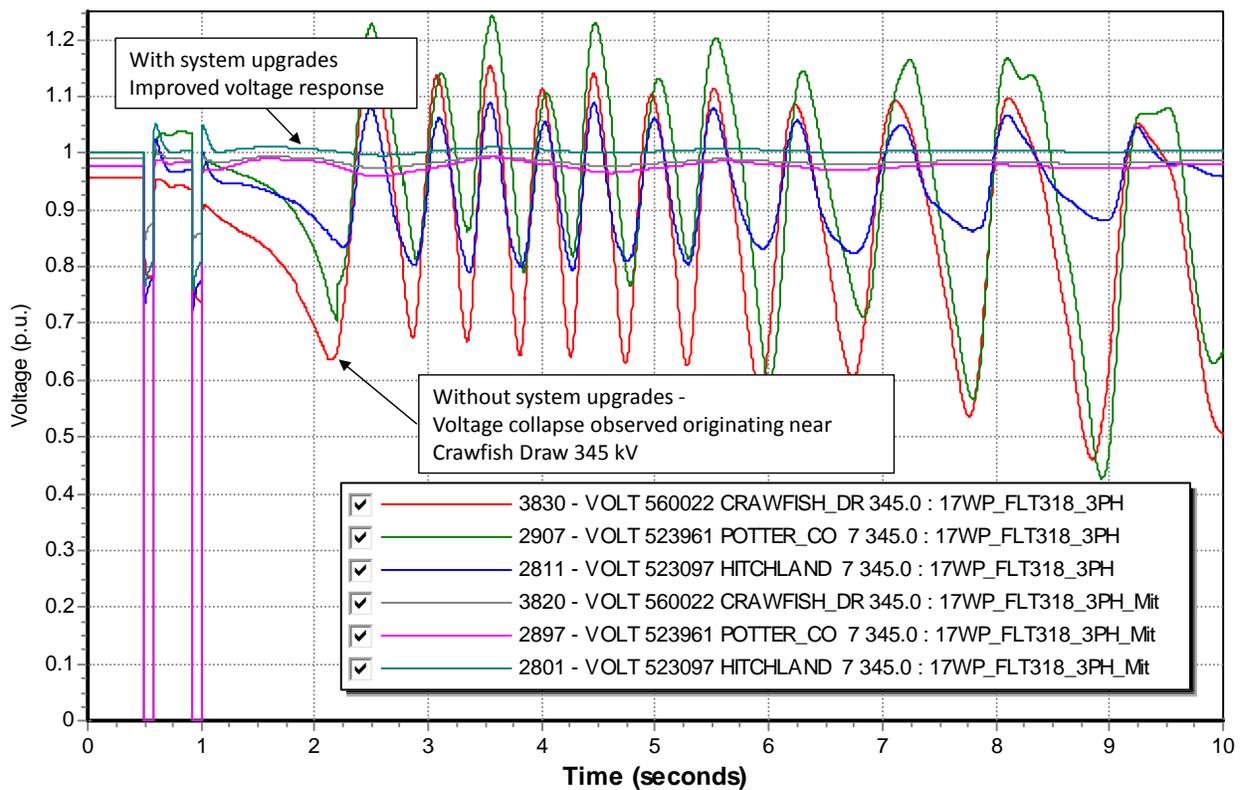


Figure 3-6: Representative plot of Crawfish Draw area voltages for 17W conditions with system upgrades for FLT318.

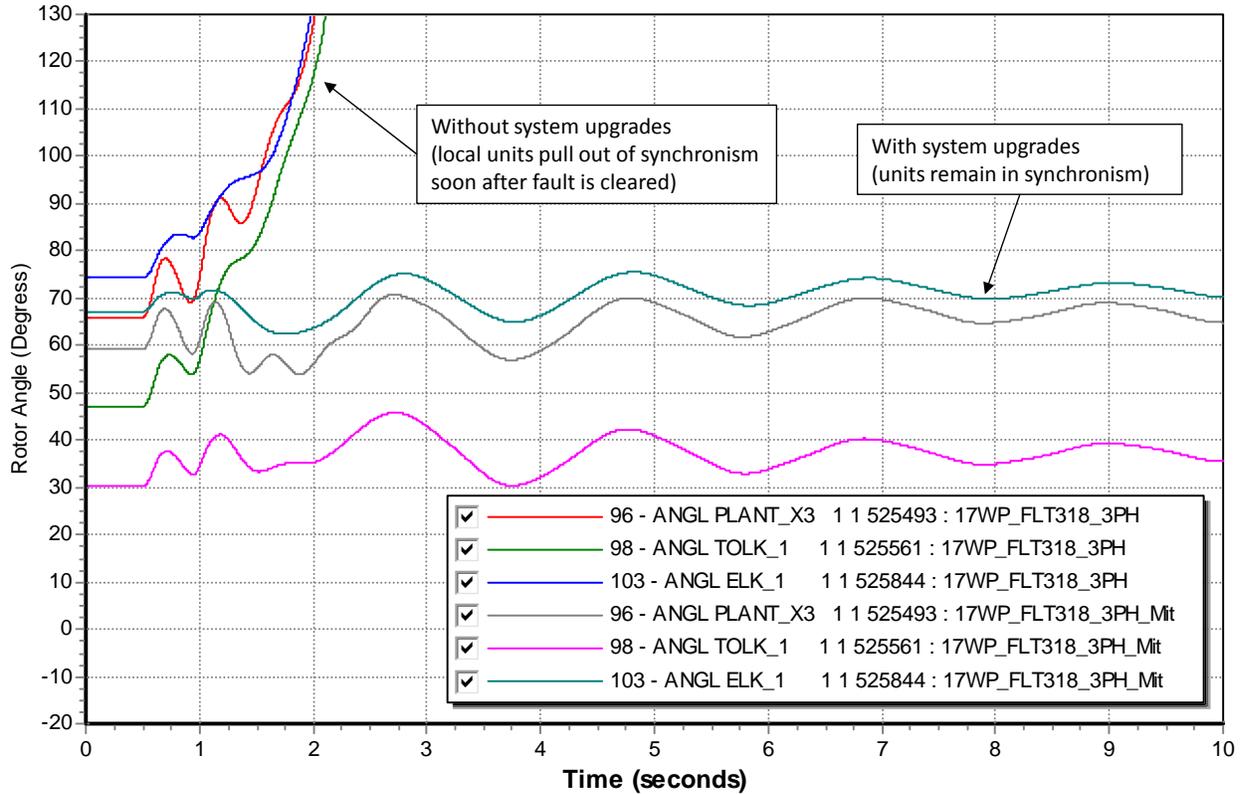


Figure 3-7: Comparison plot of area generator rotor angles for 17W conditions with and without system upgrades for FLT318.

After the upgrades and system adjustments listed in this section were implemented, the Stability Analysis was re-simulated to determine system stability. **With the aforementioned upgrades, the Stability Analysis determined that there was no generation tripping or system instability/voltage recovery issues as a result of interconnected all study projects at 100% output.**

SECTION 4: SHORT CIRCUIT ANALYSIS

The objective of this task is to quantify the three-phase to ground fault currents for the 2018 Summer Peak and 2026 Summer Peak seasons for each interconnecting generator.

4.1 Approach

The short-circuit analysis will assess breaker adequacy and fault duties for the generator interconnection bus and five buses away from the point of interconnection. MEPEI will assume no outages to find maximum short-circuit currents that flow through the breaker. The Automatic Sequencing Fault Calculation (ASCC) function in PSS/E was utilized to perform this task. FLAT conditions were applied to pre-fault conditions and the following adjustments were utilized:

- All synchronous and asynchronous machine P and Q output was set to zero
- All transformer tap ratios were set to 1.0 p.u. and all phase shift angles were set to zero
- All generator reactance's were fixed to the subtransient reactance
- All line charging was set to zero
- All shunts were set to zero
- All loads were set to zero
- All pre-fault bus voltages were set to 1.0 p.u. and a phase shift angle of zero

Note upgrades found to be necessary for the Stability Analysis were included in the Short-Circuit Analysis.

4.2 Short Circuit Results: 2018 Summer Peak

The maximum fault current for each bus is provided for the 2018 Summer Peak conditions. The following tables show the short circuit results for the study generators for the 2018 Summer Peak condition:

- Table 4-1: Short Circuit Analysis for ASGI-2016-009 (18SP)
- Table 4-2: Short Circuit Analysis for GEN-2015-099 (18SP)
- Table 4-3: Short Circuit Analysis for GEN-2016-121 (18SP)
- Table 4-4: Short Circuit Analysis for GEN-2016-123, GEN-2016-124, and GEN-2016-125 (18SP)
- Table 4-5: Short Circuit Analysis for GEN-2016-171 (18SP)
- Table 4-6: Short Circuit Analysis for GEN-2016-172 (18SP)
- Table 4-7: Short Circuit Analysis for GEN-2016-177 (18SP)

Table 4-1
Short Circuit Analysis for Study Project ASGI-2016-009 (18SP)

Study Generator ASGI-2016-009											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
522823	LP-MILWAKEE6	230	10.63	526192	MURPHY 3	115	10.71	526735	TERRY_CNTY 2	69	6.94
522828	LP-MILWAKEE2	69	8.31	526199	SP-FRANKFRD3	115	9.74	526736	TERRY_CNTY 3	115	10.31
522861	LP-SOUTHST6	230	14.25	526221	BATTON_N 2	69	1.78	526747	LG-BROWNFOLD2	69	3.56
525481	PLANT_X 6	230	24.59	526268	LUBBCK_STH 3	115	19.34	526792	PRENTICE 3	115	5.87
525524	TOLK_EAST 6	230	30.76	526269	LUBBCK_STH 6	230	18.15	526934	YOAKUM 3	115	16.56
525828	TUCO_INT 3	115	20.27	526337	JONES 6	230	20.53	527080	EL_PASO 3	115	15.52
525830	TUCO_INT 6	230	24.60	526434	SUNDOWN 3	115	10.79	527125	DENVER_CTY 2	69	8.61
525832	TUCO_INT 7	345	16.02	526435	SUNDOWN 6	230	11.05	527130	DENVER_N 3	115	20.69
525840	ANTELOPE_1 6	230	24.37	526460	AMOCO_SS 6	230	9.70	527136	DENVER_S 3	115	20.69
525957	HALE_WNDCL16	230	9.41	526469	SP-YUMA 2	69	3.05	527146	MUSTANG 3	115	22.25
526076	STANTON_W 3	115	9.14	526475	YUMA_INT 3	115	11.01	527202	SEAGRAVES 3	115	8.49
526109	SP-ERSKINE 3	115	11.33	526481	SP-WOLF_TP 3	115	11.19	527212	DIAMONDBACK3	115	3.09
526130	SP-CARLISLE2	69	2.11	526483	SP-WOLFORTH3	115	8.68	527261	SULPHUR 2	69	3.35
526146	INDIANA 3	115	9.54	526484	LG-LEVELAND3	115	9.11	527262	SULPHUR 3	115	5.64
526159	CARLISLE 2	69	2.57	526491	LG-CLAUENE 3	115	7.84	527286	XTO_RUSSEL 3	115	9.93
526160	CARLISLE 3	115	13.26	526506	LG-DOCWEBR 2	69	4.93	560021	CRAWFISH_DR2	230	20.84
526161	CARLISLE 6	230	11.36	526524	WOLFFORTH 3	115	11.54	583810	COMNIRE	115	0.37
526162	LP-DOUD_TP 3	115	11.69	526525	WOLFFORTH 6	230	13.56	584720	ASGI15021602	69	2.13
526176	LP-DOUD 3	115	9.08	526535	SP-MILWAKEE3	115	10.03	587370	GEN-2016-056	230	5.95
526184	SW_6878 2	69	2.16								

Table 4-2
Short Circuit Analysis for Study Project GEN-2015-099 (18SP)

Study Generator GEN-2015-099											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
525832	TUCO_INT 7	345	15.97	527966	KIOWA 3	115	15.82	528477	S_HOBBS 3	115	10.10
526460	AMOCO_SS 6	230	9.68	527999	INTREPDW_TP3	115	13.20	528480	OXY_S_HOBBS3	115	10.23
526934	YOAKUM 3	115	16.47	528027	RDRUNNER 7	345	4.44	528484	SW_4J44 3	115	10.81
526935	YOAKUM 6	230	17.23	528095	7-RIVERS 6	230	6.11	528491	MONUMENT 3	115	14.68
526936	YOAKUM_345	345	8.95	528145	NATPOT_TP 2	69	8.94	528498	W_HOBBS 3	115	11.34
527009	BRU_SUB 6	230	13.74	528151	FIESTA 3	115	9.59	528512	EUNICE 3	115	6.02
527030	ALRDCRTZ_TP3	115	8.67	528159	CARLSBAD 2	69	4.85	528533	DRINKARD_TP3	115	7.69
527130	DENVER_N 3	115	20.57	528160	CARLSBAD 3	115	11.01	528552	OIL_CENTER 3	115	5.82
527149	MUSTANG 6	230	15.42	528178	PECOS 3	115	11.56	528554	COOPER_RNCH3	115	6.34
527284	RUSSELL 3	115	8.94	528179	PECOS 6	230	6.32	528568	MONUMNT_TP 3	115	9.85
527286	XTO_RUSSEL 3	115	9.88	528185	N_LOVING 7	345	5.43	528575	OXYPERMIAN 3	115	14.55
527325	OXY_WSEM_TP3	115	8.38	528317	ENRON_TP 3	115	6.74	528582	BYRD 3	115	7.69
527360	MAPCO 3	115	10.12	528318	ENRON 3	115	5.87	528589	DRINKARD 3	115	7.85
527362	JOHNSON_DRW3	115	10.35	528325	LE-WAITS 3	115	6.66	528596	CARDINAL 3	115	7.91
527363	HIGG 3	115	10.04	528333	LE-WEST_SUB3	115	8.27	528602	ANDREWS 3	115	10.43
527483	CHAVES_CNTY6	230	4.46	528334	LE-NRTH_INT3	115	8.20	528603	NA_ENRICH 3	115	10.22
527793	EDDY_STH 3	115	11.54	528341	LE-SANANDRS3	115	6.27	528604	ANDREWS 6	230	6.41
527798	EDDY_NTH 3	115	11.54	528348	BUCKEYE_TP 3	115	8.04	528617	LE-WAITS 2	69	3.28
527799	EDDY_NORTH 6	230	8.90	528353	MADDOXG23 3	115	24.45	528618	LE-LOVINTON2	69	7.06
527802	EDDY_CNTY 7	345	6.91	528355	MADDOX 3	115	24.45	528622	LE-SANANDRS2	69	5.20
527864	CUNNINHAM 3	115	25.53	528385	BUCKEYE 3	115	7.25	528627	LE-TXACO_TP3	115	6.95
527865	CUNNIGHM_N 6	230	14.07	528392	PEARLE 3	115	6.23	528638	LE-SAUNDRTP2	69	3.55
527867	CUNNIGHM_S 6	230	14.07	528394	QUAHADA 3	115	8.04	528667	LE-MHOON 2	69	4.36
527891	HOBBS_INT 3	115	28.88	528399	LEA_NATIONL3	115	6.78	528675	LE-FAMARISS2	69	3.31
527894	HOBBS_INT 6	230	16.14	528406	MALJMAR1&2 3	115	3.21	528679	LE-TATUM_SW2	69	4.86
527896	HOBBS_INT 7	345	8.69	528413	TAYLOR 3	115	13.85	528699	LE-GRAY 2	69	4.12
527929	PCA 2	69	6.32	528420	ZIA 3	115	6.52	528775	LE-ERF 3	115	10.35
527930	PCA 3	115	11.38	528422	DCP_ZIA TP 3	115	6.98	528792	LE-TEXACO 3	115	6.30
527935	CV-SKELLY 3	115	3.23	528423	DCP_ZIA 3	115	6.62	560059	G1579&G1580T	230	8.85
527943	CV-LUSK 2	69	2.25	528433	BENSING 3	115	7.86	562480	G13-027-TAP	230	9.39
527947	CV-LUSK 3	115	3.47	528435	MILLEN 3	115	11.17	587110	GEN-2016-015	230	6.22
527948	CV-LUSK_TP 3	115	4.21	528442	NE_HOBBS 3	115	11.45	587420	GEN-2016-062	230	5.48
527961	POTASH_JCT 2	69	8.99	528449	W_BENDER 3	115	14.08	587670	GEN-2015-099	115	16.08
527962	POTASH_JCT 3	115	15.85	528456	N_HOBBS 3	115	8.79	588350	GEN-2016-171	230	8.63
527963	POTASH_JCT 6	230	6.97	528463	SANGER_SW 3	115	15.12	599960	EPTNP-D6	230	8.90
527965	KIOWA 7	345	7.51	528470	E_SANGER 3	115	12.17				

Table 4-3
Short Circuit Analysis for Study Project GEN-2016-121 (18SP)

Study Generator GEN-2016-121											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
525549	TOLK 7	345	15.36	527962	POTASH_JCT 3	115	15.85	528222	CHINA_DRAW 3	115	8.41
525832	TUCO_INT 7	345	15.97	527963	POTASH_JCT 6	230	6.97	528223	CHINA_DRAW 7	345	4.25
526935	YOAKUM 6	230	17.23	527965	KIOWA 7	345	7.51	528226	HOPI_SUB 3	115	6.73
526936	YOAKUM_345	345	8.95	527966	KIOWA 3	115	15.82	528228	WOOD_DRAW 3	115	5.64
527483	CHAVES_CNTY6	230	4.46	527999	INTREPDW_TP3	115	13.20	528230	AGAVE_RHILL3	115	8.95
527655	RSVLT_CC_E 7	345	8.15	528009	WIPP 3	115	6.79	528232	OCHOA 3	115	8.80
527656	CROSSROADS 7	345	9.17	528016	SAND_DUNES 3	115	6.37	528235	WOLFCAMP_TP3	115	5.74
527793	EDDY_STH 3	115	11.54	528018	RED_BLUFF 3	115	7.15	528236	WOLFCAMP 3	115	5.52
527798	EDDY_NTH 3	115	11.54	528020	BOPCO_PKRLK3	115	5.64	528239	PNDEROSATP 3	115	6.81
527799	EDDY_NORTH 6	230	8.90	528024	RR_SVC_HV 3	115	6.78	528240	PONDEROSA 3	115	4.59
527802	EDDY_CNTY 7	345	6.91	528025	RDRUNNER 3	115	9.28	528519	WARD 3	115	5.46
527865	CUNNIGHM_N 6	230	14.07	528027	RDRUNNER 7	345	4.44	528540	WHITTEN 3	115	6.92
527867	CUNNIGHM_S 6	230	14.07	528035	IMC_#1_TP 3	115	9.44	528547	S_JAL 3	115	6.21
527891	HOBBS_INT 3	115	28.88	528040	BATTLE_AXE 3	115	2.88	528604	ANDREWS 6	230	6.41
527894	HOBBS_INT 6	230	16.14	528095	7-RIVERS 6	230	6.11	560059	G1579&G1580T	230	8.85
527896	HOBBS_INT 7	345	8.69	528160	CARLSBAD 3	115	11.01	584940	GEN-2015-056	345	7.46
527930	PCA 3	115	11.38	528182	NORTH_LOVNG3	115	9.28	587990	GEN-2016-121	115	8.79
527953	LIVSTNRIDGE3	115	7.36	528185	N_LOVING 7	345	5.43	588000	GEN-2016-123	345	9.02
527955	SAGE_BRUSH 3	115	5.08	528192	SOUTH_LOVNG3	115	6.99	599960	EPTNP-D6	230	8.90
527961	POTASH_JCT 2	69	8.99								

Table 4-4
Short Circuit Analysis for Study Project GEN-2016-123, GEN-2016-124,
and GEN-2016-125 (18SP)

Study Generator GEN-2016-123, GEN-2016-124, GEN-2016-125											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511423	FLE TAP4	138	8.80	524908	ROOSEVELT 3	115	10.34	527930	PCA 3	115	11.63
511437	COMANC-4	138	18.27	524909	ROSEVELT_N 6	230	9.01	527961	POTASH_JCT 2	69	9.09
511439	LWSTAP 4	138	11.51	524911	ROSEVELT_S 6	230	9.01	527962	POTASH_JCT 3	115	16.37
511456	O.K.U.-7	345	5.25	524915	SW_4K33 6	230	9.01	527963	POTASH_JCT 6	230	7.27
511466	L.E.S.-2	69	16.60	525212	SWISHER 3	115	11.72	527965	KIOWA 7	345	7.81
511467	L.E.S.-4	138	24.99	525213	SWISHER 6	230	10.60	527966	KIOWA 3	115	16.33
511468	L.E.S.-7	345	14.03	525460	NEWHART 3	115	16.84	527999	INTREPDW_TP3	115	13.47
511474	SHERID4	138	12.32	525461	NEWHART 6	230	11.27	528018	RED_BLUFF 3	115	7.23
511486	ELGINJ4	138	9.94	525480	PLANT_X 3	115	17.90	528024	RR_SVC_HV 3	115	6.84
511494	COMMTAP4	138	21.78	525481	PLANT_X 6	230	24.59	528025	RDRUNNER 3	115	9.38
511553	CHISHOLM7	345	11.09	525524	TOLK_EAST 6	230	30.76	528027	RDRUNNER 7	345	4.54
511557	CHISHOLM6	230	11.15	525531	TOLK_WEST 6	230	30.76	528040	BATTLE_AXE 3	115	2.89
511565	OKLAUN HVDC7	345	5.24	525543	TOLK_TAP 6	230	30.76	528070	CV-AZMESA 3	115	7.45
511568	TERRYRD7	345	10.18	525549	TOLK 7	345	15.53	528093	7-RIVERS 2	69	2.40
511571	RUSHSPR7	345	6.45	525636	LAMB_CNTY 3	115	8.46	528094	7-RIVERS 3	115	8.36
515045	SEMINOL7	345	26.57	525637	LAMB_CNTY 6	230	5.42	528095	7-RIVERS 6	230	6.28
515136	SUNNYS7	345	10.86	525828	TUCO_INT 3	115	20.27	528109	CV-LAKEWOOD3	115	6.48
515375	WWRDEHV7	345	19.73	525830	TUCO_INT 6	230	24.60	528132	OCOTILLO 3	115	6.17
515376	WWRDEHV4	138	22.92	525832	TUCO_INT 7	345	16.02	528137	N CANAL 3	115	8.67
515407	TATONGA7	345	15.94	525840	ANTELOPE_1 6	230	24.37	528160	CARLSBAD 3	115	11.26
515458	BORDER 7	345	9.27	525850	ELK_CT1	345	15.81	528178	PECOS 3	115	11.84
515554	BVRCNTY7	345	16.35	525957	HALE_WNDCL16	230	9.41	528179	PECOS 6	230	6.53
515599	G07621119-20	345	13.17	526161	CARLISLE 6	230	11.36	528182	NORTH_LOVNG3	115	9.43
515800	GRACMNT7	345	17.52	526337	JONES 6	230	20.53	528185	N LOVING 7	345	5.58
523093	HITCHLAND 3	115	18.14	526435	SUNDOWN 6	230	11.05	528222	CHINA_DRAW 3	115	8.53
523095	HITCHLAND 6	230	15.55	526935	YOAKUM 6	230	17.54	528223	CHINA_DRAW 7	345	4.35
523097	HITCHLAND 7	345	17.00	526936	YOAKUM_345	345	9.14	528226	HOPI_SUB 3	115	6.81
523101	NOBLE_WND 7	345	16.92	527455	RSWL_SLRCOL3	115	7.02	528230	AGAVE_RHILL3	115	9.04
523103	NOBLE_WND 3	115	10.90	527470	CHVS_SLRCOL3	115	6.71	528604	ANDREWS 6	230	6.61
523111	NOVUS1 3	115	20.00	527482	CHAVES_CNTY3	115	7.09	539801	THISTLE7	345	16.41
523112	NOVUS1 7	345	16.65	527483	CHAVES_CNTY6	230	4.50	560010	G14-037-TAP	345	16.76
523155	OCHILTREE 6	230	4.26	527501	URTON 3	115	5.87	560021	CRAWFISH_DR2	230	20.84
523215	FREWHELCO17	345	9.78	527509	PRICE_TAP 3	115	5.42	560022	CRAWFISH_DR	345	16.10
523221	XIT_INTG 6	230	3.25	527546	SAMSON 3	115	5.53	560035	GRAPEVINE	345	6.34
523267	PRINGLE 6	230	4.28	527564	ROSWLL_INT 3	115	5.78	560059	G1579&G1580T	230	9.14
523308	MOORE_E 3	115	11.88	527597	TWEEDY 3	115	5.33	560071	G16-003-TAP	345	15.26
523309	MOORE_CNTY 6	230	7.01	527654	RSVLT_CC_W 7	345	7.29	560078	G16-037-TAP	345	9.42
523821	WALKEMEYER 3	115	10.39	527655	RSVLT_CC_E 7	345	8.20	562480	G13-027-TAP	230	9.44
523823	WALKEMEYER 7	345	8.36	527656	CROSSROADS 7	345	9.23	576395	GEN-2010-014	345	12.11
523853	FINNEY 7	345	10.23	527707	ARTESIA 3	115	6.91	576396	G10-014-XFMR	115	13.62
523869	CHAN+TASCOS6	230	4.38	527710	EAGLE_CREEK2	69	2.33	583090	G1149&G1504	345	7.76
523959	POTTER_CO 6	230	22.99	527711	EAGLE_CREEK3	115	7.53	583840	GEN-2013-027	230	8.95
523961	POTTER_CO 7	345	11.49	527715	NAVAJO_2TP 3	115	7.17	583960	G14034G14035	115	6.68
523977	HARRNG_WST 6	230	27.63	527736	NAVAJO_5TP 3	115	7.13	584210	GEN-2014-037	345	11.69
523978	HARRNG_MID 6	230	27.63	527786	ATOKA 3	115	7.22	584940	GEN-2015-056	345	7.50
523979	HARRNG_EST 6	230	27.63	527793	EDDY_STH 3	115	11.80	585003	CRFSDRW_SVC	345	16.10
524007	ROLLHILLS 3	115	19.75	527798	EDDY_NTH 3	115	11.80	585080	GEN-2015-071	345	9.44
524010	ROLLHILLS 6	230	20.69	527799	EDDY_NORTH 6	230	9.21	587470	GEN-2016-069	115	6.85
524266	BUSHLAND 3	115	9.61	527802	EDDY_CNTY 7	345	7.13	587740	GEN-2016-091	345	13.41
524267	BUSHLAND 6	230	10.87	527809	CV-8_MILE 3	115	5.44	587744	G16-091-TAP	345	15.14
524290	WILDOR2_JUS6	230	7.13	527821	CV-DAYTON +3	115	7.13	587770	GEN-2016-095	345	11.07
524296	SPNSPUR_WND7	345	5.55	527822	CV-TURKYTRK3	115	3.46	587990	GEN-2016-121	115	8.88
524415	AMA_SOUTH 6	230	13.83	527864	CUNNINGHAM 3	115	26.36	588000	GEN-2016-123	345	9.08
524623	DEAFSMITH 6	230	14.03	527865	CUNNINGHAM_N 6	230	16.61	590001	OKLEHV24	138	4.79
524770	PLSNT_HILL 6	230	6.20	527867	CUNNINGHAM_S 6	230	16.61	590003	OKLEHV14	138	4.80
524875	OASIS 6	230	7.46	527891	HOBBS_INT 3	115	29.89	599891	OKLAUN 7	345	4.04
524885	SN_JUAN_TAP6	230	4.82	527894	HOBBS_INT 6	230	18.13	599955	PNM-DC6	230	9.01
524889	SN_JUAN_WND6	230	4.61	527896	HOBBS_INT 7	345	9.13	599960	EPTNP-D6	230	9.21

Table 4-5
Short Circuit Analysis for Study Project GEN-2016-171 (18SP)

Study Generator GEN-2016-171											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511456	O.K.U.-7	345	5.25	527036	SHELL_C2 3	115	12.84	528179	PECOS 6	230	6.53
511468	L.E.S.-7	345	14.03	527041	ARCO_TP 3	115	12.96	528182	NORTH_LOVNG3	115	9.43
515458	BORDER 7	345	9.27	527047	OXY_WILRD1 3	115	10.43	528185	N_LOVING 7	345	5.58
524623	DEAFSMITH 6	230	14.03	527051	ODC_TP 3	115	13.07	528223	CHINA_DRAW 7	345	4.35
524908	ROOSEVELT 3	115	10.34	527062	SHELL_CO2 3	115	15.75	528317	ENRON_TP 3	115	6.81
524909	ROSEVELT_N 6	230	9.01	527080	EL_PASO 3	115	15.52	528325	LE-WAITS 3	115	6.68
524911	ROSEVELT_S 6	230	9.01	527105	SAN_ANDS_TP3	115	16.37	528333	LE-WEST_SUB3	115	8.32
524915	SW_4K33 6	230	9.01	527125	DENVER_CTY 2	69	8.61	528334	LE-NRTH_INT3	115	8.24
525461	NEWHART 6	230	11.27	527130	DENVER_N 3	115	20.69	528348	BUCKEYE_TP 3	115	8.12
525480	PLANT_X 3	115	17.90	527136	DENVER_S 3	115	20.69	528353	MADDOXG23 3	115	24.96
525481	PLANT_X 6	230	24.59	527146	MUSTANG 3	115	22.25	528355	MADDOX 3	115	24.96
525524	TOLK_EAST 6	230	30.76	527149	MUSTANG 6	230	15.58	528385	BUCKEYE 3	115	7.31
525531	TOLK_WEST 6	230	30.76	527151	GS-MUSTANG 6	230	15.58	528392	PEARLE 3	115	6.28
525543	TOLK_TAP 6	230	30.76	527194	LG-PLSHILL 3	115	7.50	528394	QUAHADA 3	115	8.15
525549	TOLK 7	345	15.53	527201	SEAGRAVES 2	69	5.39	528399	LEA_NATIONL3	115	6.85
525636	LAMB_CNTY 3	115	8.46	527202	SEAGRAVES 3	115	8.49	528413	TAYLOR 3	115	14.03
525637	LAMB_CNTY 6	230	5.42	527238	ROZ 3	115	9.24	528422	DCP_ZIA_TP 3	115	7.05
525828	TUCO_INT 3	115	20.27	527242	AMERADA 3	115	9.35	528433	BENSING 3	115	7.91
525830	TUCO_INT 6	230	24.60	527262	SULPHUR 3	115	5.64	528435	MILLEN 3	115	11.29
525832	TUCO_INT 7	345	16.02	527275	SEMINOLE 3	115	11.38	528442	NE_HOBBS 3	115	11.57
525840	ANTELOPE_1 6	230	24.37	527276	SEMINOLE 6	230	7.24	528463	SANGER_SW 3	115	15.32
525850	ELK_CT1	345	15.81	527284	RUSSELL 3	115	8.99	528484	SW_4J44 3	115	10.93
525957	HALE_WNDCL16	230	9.41	527286	XTO_RUSSEL 3	115	9.93	528491	MONUMENT 3	115	14.88
526036	LC-OPDYKE 3	115	5.71	527322	GAINES 3	115	8.50	528498	W_HOBBS 3	115	11.48
526161	CARLISLE 6	230	11.36	527340	DOSS 3	115	7.13	528568	MONUMNT_TP 3	115	9.80
526269	LUBBCK_STH 6	230	18.15	527362	JOHNSON_DRW3	115	10.42	528575	OXYPERMIAN 3	115	14.73
526337	JONES 6	230	20.53	527363	HIGG 3	115	10.09	528582	BYRD 3	115	7.58
526350	LEHMAN_TP 3	115	5.39	527483	CHAVES_CNTY6	230	4.50	528589	DRINKARD 3	115	7.95
526424	PACIFIC 3	115	9.15	527656	CROSSROADS 7	345	9.23	528602	ANDREWS 3	115	10.65
526434	SUNDOWN 3	115	10.79	527793	EDDY_STH 3	115	11.80	528603	NA_ENRICH 3	115	10.42
526435	SUNDOWN 6	230	11.05	527798	EDDY_NTH 3	115	11.80	528604	ANDREWS 6	230	6.61
526445	AMOCO_TP 3	115	10.12	527799	EDDY_NORTH 6	230	9.21	528605	TARGA 3	115	8.58
526460	AMOCO_SS 6	230	9.70	527802	EDDY_CNTY 7	345	7.13	528618	LE-LOVINTON2	69	7.08
526491	LG-CLAUENE 3	115	7.84	527864	CUNNINGHAM 3	115	26.36	528626	LE-PLNSINT 2	69	4.38
526524	WOLFFORTH 3	115	11.54	527865	CUNNINGHM_N 6	230	16.61	528627	LE-TXACO_TP3	115	7.00
526525	WOLFFORTH 6	230	13.56	527867	CUNNINGHM_S 6	230	16.61	528740	LE-PLANS_TP2	69	3.64
526735	TERRY_CNTY 2	69	6.94	527891	HOBBS_INT 3	115	29.89	560021	CRAWFISH_DR2	230	20.84
526736	TERRY_CNTY 3	115	10.31	527894	HOBBS_INT 6	230	18.13	560022	CRAWFISH_DR	345	16.10
526784	AMOCOWASSON6	230	13.83	527896	HOBBS_INT 7	345	9.13	560059	G1579&G1580T	230	9.14
526792	PRENTICE 3	115	5.87	527930	PCA 3	115	11.63	562480	G13-027-TAP	230	9.44
526928	PLAINS_INT 3	115	9.66	527962	POTASH_JCT 3	115	16.37	583840	GEN-2013-027	230	8.95
526934	YOAKUM 3	115	16.56	527963	POTASH_JCT 6	230	7.27	585003	CRFSDRW_SVC	345	16.10
526935	YOAKUM 6	230	17.54	527965	KIOWA 7	345	7.81	587110	GEN-2016-015	230	6.40
526936	YOAKUM_345	345	9.14	527966	KIOWA 3	115	16.33	587420	GEN-2016-062	230	5.62
526944	LG-PLAINS 3	115	7.69	528025	RDRUNNER 3	115	9.38	587670	GEN-2015-099	115	16.29
527009	BRU_SUB 6	230	13.91	528027	RDRUNNER 7	345	4.54	588350	GEN-2016-171	230	8.91
527010	OXYBRU 6	230	13.80	528095	7-RIVERS 6	230	6.28	599960	EPTNP-D6	230	9.21
527018	BENNETT 3	115	13.05								

Table 4-6
Short Circuit Analysis for Study Project GEN-2016-172 (18SP)

Study Generator GEN-2016-172											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511456	O.K.U.-7	345	5.25	524606	HEREFORD 3	115	13.39	525446	RKYFORD_TP 3	115	9.87
511468	L.E.S.-7	345	14.03	524622	DEAFSMITH 3	115	15.52	525453	HALE_CNTY 2	69	6.91
511553	CHISHOLM7	345	11.09	524623	DEAFSMITH 6	230	14.03	525454	HALE_CNTY 3	115	10.16
515458	BORDER 7	345	9.27	524629	DS-#6 3	115	6.74	525460	NEWHART 3	115	16.84
522800	MU-TULIA 3	115	5.24	524681	DIMMIT_E&S 2	69	2.80	525461	NEWHART 6	230	11.27
523093	HITCHLAND 3	115	18.14	524688	DS-#3 2	69	2.97	525480	PLANT_X 3	115	17.90
523095	HITCHLAND 6	230	15.55	524694	DS-#22 3	115	4.63	525481	PLANT_X 6	230	24.59
523097	HITCHLAND 7	345	17.00	524714	CASTRO_TP 2	69	3.54	525524	TOLK_EAST 6	230	30.76
523101	NOBLE_WND 7	345	16.92	524721	DS-#15+2	69	3.56	525531	TOLK_WEST 6	230	30.76
523112	NOVUS1 7	345	16.65	524728	DS-CASTRO 2	69	4.29	525543	TOLK_TAP 6	230	30.76
523155	OCHILTREE 6	230	4.26	524734	DS-#21 3	115	9.47	525549	TOLK 7	345	15.53
523177	RB-SPURLCK+3	115	5.88	524745	CASTRO_CNTY2	69	8.87	525635	LAMB_CNTY 2	69	5.90
523215	FREWHELCO17	345	9.78	524746	CASTRO_CNTY3	115	9.97	525636	LAMB_CNTY 3	115	8.46
523216	RB-HOGUE 3	115	4.14	524757	BETHEL_COL13	115	8.28	525637	LAMB_CNTY 6	230	5.42
523220	XT_INTG 3	115	6.11	524770	PLSNT_HILL 6	230	6.20	525731	SP-ABERNTHY2	69	3.02
523221	XT_INTG 6	230	3.25	524908	ROOSEVELT 3	115	10.34	525738	HALECENTER 2	69	2.46
523256	ETTER 3	115	5.66	524909	ROSEVELT_N 6	230	9.01	525745	LH-HALECTR 2	69	2.44
523266	PRINGLE 3	115	10.65	524911	ROSEVELT_S 6	230	9.01	525779	FLOYD_CNTY 2	69	5.33
523267	PRINGLE 6	230	4.28	524915	SW_4K33 6	230	9.01	525780	FLOYD_CNTY 3	115	6.07
523277	VALERO 3	115	10.73	525018	EMULESH&VLY3	115	4.83	525816	TUCO_INT2 2	69	4.68
523304	MOORE_W 3	115	11.88	525019	EMU&VLY_TP 3	115	5.14	525826	TUCO_INT 2	69	7.94
523308	MOORE_E 3	115	11.88	525028	BAILEYCO 3	115	5.01	525828	TUCO_INT 3	115	20.27
523309	MOORE_CNTY 6	230	7.01	525050	BC-KELLEY +3	115	7.76	525830	TUCO_INT 6	230	24.60
523551	HUTCHISON 6	230	7.27	525056	BC-EARTH 3	115	8.18	525832	TUCO_INT 7	345	16.02
523771	GRAPEVINE 6	230	5.81	525116	DS-#12 2	69	2.38	525840	ANTELOPE_1 6	230	24.37
523823	WALKEMEYER 7	345	8.36	525119	BC-SUNYSIDE2	69	1.32	525853	LH-WIL&ELN+2	69	2.58
523869	CHAN+TASCOS6	230	4.38	525124	HART_INDUST3	115	7.79	525885	SP-NEWDEAL 2	69	3.32
523959	POTTER_CO 6	230	22.99	525129	LC-HART 2	69	2.57	525926	CROSBY 3	115	4.52
523961	POTTER_CO 7	345	11.49	525132	LC-N_OLTON 2	69	3.08	525957	HALE_WNDCL16	230	9.41
523977	HARRNG_WST 6	230	27.63	525143	HAPPY_CTYTP2	69	4.03	526020	HOCKLEY 3	115	5.42
523978	HARRNG_MID 6	230	27.63	525153	HAPPY_INT 2	69	4.46	526036	LC-OPDYKE 3	115	5.71
523979	HARRNG_EST 6	230	27.63	525154	HAPPY_TP 3	115	5.50	526076	STANTON_W 3	115	9.14
524007	ROLLHILLS 3	115	19.75	525179	TULIA_TP 3	115	6.52	526146	INDIANA 3	115	9.54
524009	CHERRY 3	115	18.87	525191	KRESS_INT 2	69	4.52	526161	CARLISLE 6	230	11.36
524010	ROLLHILLS 6	230	20.69	525192	KRESS_INT 3	115	12.18	526268	LUBBCK_STH 3	115	19.34
524043	NICHOLS 3	115	31.27	525203	SW-KRESS 2	69	4.52	526269	LUBBCK_STH 6	230	18.15
524044	NICHOLS 6	230	26.73	525212	SWISHER 3	115	11.72	526297	LUBBCK_EST 2	69	8.07
524106	NORTHWEST 3	115	11.38	525213	SWISHER 6	230	10.60	526298	LUBBCK_EST 3	115	15.46
524136	HASTINGS 3	115	13.92	525224	KRESS_RURL 2	69	2.53	526299	LUBBCK_EST 6	230	13.33
524163	EAST_PLANT 6	230	14.09	525225	KRESS_RURAL3	115	6.47	526337	JONES 6	230	20.53
524266	BUSHLAND 3	115	9.61	525249	LH-PLW&FNY+2	69	1.61	526424	PACIFIC 3	115	9.15
524267	BUSHLAND 6	230	10.87	525256	SW_9748 2	69	3.10	526434	SUNDOWN 3	115	10.79
524276	WILDOR_WND 6	230	5.23	525257	N_PLAINVEW 3	115	5.17	526435	SUNDOWN 6	230	11.05
524290	WILDOR2_JUS6	230	7.13	525271	KISER 2	69	3.48	526445	AMOCO_TP 3	115	10.12
524296	SPNSPUR_WND7	345	5.55	525272	KISER 3	115	5.17	526460	AMOCO_SS 6	230	9.70
524300	HILLSIDE 3	115	12.79	525284	WESTRIDGE 2	69	4.27	526524	WOLFFORTH 3	115	11.54
524364	RANDALL 3	115	21.73	525291	PLAINVW_TP 2	69	6.49	526525	WOLFFORTH 6	230	13.56
524365	RANDALL 6	230	14.82	525298	S_PLAINVEW 2	69	2.58	526935	YOAKUM 6	230	17.54
524377	FARMERS 3	115	15.41	525307	E_PLAINVEW 2	69	2.45	527656	CROSSROADS 7	345	9.23
524397	ARROWHEAD 3	115	13.74	525316	LH-PROVDNCE2	69	3.37	560010	G14-037-TAP	345	16.76
524404	OWENSCORN 3	115	15.08	525325	COX 2	69	3.37	560021	CRAWFISH_DR2	230	20.84
524414	AMA_SOUTH 3	115	16.95	525326	COX 3	115	5.95	560022	CRAWFISH_DR	345	16.10
524415	AMA_SOUTH 6	230	13.83	525339	AIKEN_RURL 2	69	2.45	560035	GRAPEVINE	345	6.34
524530	PALO_DURO 3	115	6.80	525393	ROCKYFORD 3	115	8.84	562004	G11-025-TAP	115	4.64
524544	SPRING_DRW 3	115	6.41	525397	OLTON 2	69	4.19	562480	G13-027-TAP	230	9.44
524556	LAPLATA 3	115	6.85	525404	LC-OLTON 2	69	4.50	576395	GEN-2010-014	345	12.11
524567	NE_HEREFORD3	115	11.67	525413	LAMTON 2	69	5.19	583840	GEN-2013-027	230	8.95
524573	NE_HEREFORD2	69	7.29	525414	LAMTON 3	115	7.67	585003	CRFSRDRW_SVC	345	16.10
524590	DAWN 3	115	6.76	525425	CORNER 2	69	3.63	587570	ASG1604	115	6.80
524597	PANDAHFD 3	115	10.48	525432	SP-HALFWAY+2	69	5.87	588440	GEN-2016-172	115	14.18
524604	HEREFRD_SB 2	69	4.66	525440	LC-S_OLTON+3	115	7.18	599955	PNM-DC6	230	9.01
524605	HEREFRD_NB 2	69	4.66								

Table 4-7
Short Circuit Analysis for Study Project GEN-2016-177 (18SP)

Study Generator GEN-2016-177											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
526736	TERRY_CNTY 3	115	10.31	527130	DENVER_N 3	115	20.57	528638	LE-SAUNDRTP2	69	3.55
527021	CORTEZ 3	115	6.37	527136	DENVER_S 3	115	20.57	528667	LE-MHOON 2	69	4.36
527022	APACHE_ROB 3	115	7.20	527146	MUSTANG 3	115	22.12	528675	LE-FAMARISS2	69	3.31
527024	ALLRED_SUB 3	115	7.89	527149	MUSTANG 6	230	15.42	528679	LE-TATUM_SW2	69	4.86
527030	ALRDORTZ_TP3	115	8.67	527183	JAYBEE 2	69	4.35	528699	LE-GRAY 2	69	4.12
527036	SHELL_C2 3	115	12.79	527202	SEAGRAVES 3	115	8.47	528703	LE-DENTN_TP2	69	3.88
527062	SHELL_CO2 3	115	15.68	527275	SEMINOLE 3	115	11.33	528709	LE-FTS_COND2	69	2.91
527068	SHELLC3_TP 3	115	10.59	527286	XTO_RUSSEL 3	115	9.88	528711	LE-TP89 2	69	1.91
527074	SHELLC3 3	115	9.53	527313	MIDAMERI_TP2	69	2.15	528714	LE-FORT_SW 2	69	3.09
527080	EL_PASO 3	115	15.46	527891	HOBBS_INT 3	115	28.88	528718	LE-NEWTX 2	69	1.91
527099	DC_EAST 2	69	6.07	528325	LE-WAITS 3	115	6.66	528759	LE-TP51 2	69	2.19
527105	SAN_ANDS_TP3	115	16.30	528333	LE-WEST_SUB3	115	8.27	528780	LE-NITROTEC2	69	1.93
527106	SAN_ANDRES 3	115	11.63	528334	LE-NRTH_INT3	115	8.20	588460	A16-008SUB	115	9.17
527111	WASSON 2	69	5.95	528617	LE-WAITS 2	69	3.28	588462	A16-008TP	115	9.17
527125	DENVER_CTY 2	69	8.60	528618	LE-LOVINTON2	69	7.06				

4.3 Short Circuit Results: 2026 Summer Peak

The maximum fault current for each bus is provided for the 2026 Summer Peak conditions. The following tables show the short circuit results for the study generators for the 2026 Summer Peak conditions:

- Table 4-8: Short Circuit Analysis for ASGI-2016-009 (26SP)
- Table 4-9: Short Circuit Analysis for GEN-2015-099 (26SP)
- Table 4-10: Short Circuit Analysis for GEN-2016-121 (26SP)
- Table 4-11: Short Circuit Analysis for GEN-2016-123, GEN-2016-124, and GEN-2016-125 (26SP)
- Table 4-12: Short Circuit Analysis for GEN-2016-171 (26SP)
- Table 4-13: Short Circuit Analysis for GEN-2016-172 (26SP)
- Table 4-14: Short Circuit Analysis for GEN-2016-177 (26SP)

Table 4-8
Short Circuit Analysis for Study Project ASGI-2016-009 (26SP)

Study Generator ASGI-2016-009											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
522823	LP-MILWAKEE6	230	13.50	526192	MURPHY 3	115	10.77	526735	TERRY_CNTY 2	69	6.94
522828	LP-MILWAKEE2	69	8.31	526199	SP-FRANKFRD3	115	9.76	526736	TERRY_CNTY 3	115	10.31
522861	LP-SOUTHEST6	230	17.34	526221	BATTON_N 2	69	1.78	526747	LG-BROWNFOLD2	69	3.56
525481	PLANT_X 6	230	23.79	526268	LUBBCK_STH 3	115	19.56	526792	PRENTICE 3	115	5.87
525524	TOLK_EAST 6	230	30.09	526269	LUBBCK_STH 6	230	19.27	526934	YOAKUM 3	115	16.47
525828	TUCO_INT 3	115	20.21	526337	JONES 6	230	21.30	527080	EL_PASO 3	115	15.46
525830	TUCO_INT 6	230	24.60	526434	SUNDOWN 3	115	10.80	527125	DENVER_CTY 2	69	8.60
525832	TUCO_INT 7	345	15.97	526435	SUNDOWN 6	230	11.04	527130	DENVER_N 3	115	20.57
525840	ANTELOPE_1 6	230	24.38	526460	AMOCO_SS 6	230	9.68	527136	DENVER_S 3	115	20.57
525957	HALE_WNDCL16	230	9.41	526469	SP-YUMA 2	69	3.05	527146	MUSTANG 3	115	22.12
526076	STANTON_W 3	115	9.19	526475	YUMA_INT 3	115	11.11	527202	SEAGRAVES 3	115	8.47
526109	SP-ERSKINE 3	115	11.44	526481	SP-WOLF_TP 3	115	11.30	527212	DIAMONDBACK3	115	3.09
526130	SP-CARLISLE2	69	2.11	526483	SP-WOLFORTH3	115	8.74	527261	SULPHUR 2	69	3.35
526146	INDIANA 3	115	9.61	526484	LG-LEVELAND3	115	9.12	527262	SULPHUR 3	115	5.64
526159	CARLISLE 2	69	2.57	526491	LG-CLAUENE 3	115	7.84	527286	XTO_RUSSEL 3	115	9.88
526160	CARLISLE 3	115	13.44	526506	LG-DOCWEBR 2	69	4.93	560021	CRAWFISH_DR2	230	20.81
526161	CARLISLE 6	230	13.95	526524	WOLFFORTH 3	115	11.62	583810	COMNIRE	115	0.37
526162	LP-DOUD_TP 3	115	11.82	526525	WOLFFORTH 6	230	13.79	584720	ASGI15021602	69	2.13
526176	LP-DOUD 3	115	9.15	526535	SP-MILWAKEE3	115	10.06	587370	GEN-2016-056	230	6.53
526184	SW_6878 2	69	2.16								

Table 4-9
Short Circuit Analysis for Study Project GEN-2015-099 (26SP)

Study Generator GEN-2015-099											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
525832	TUCO_INT 7	345	16.02	527966	KIOWA 3	115	16.33	528477	S_HOBBS 3	115	10.21
526460	AMOCO_SS 6	230	9.70	527999	INTREPDW_TP3	115	13.47	528480	OXY_S_HOBBS3	115	10.34
526934	YOAKUM 3	115	16.56	528027	RDRUNNER 7	345	4.54	528484	SW_4J44 3	115	10.93
526935	YOAKUM 6	230	17.54	528095	7-RIVERS 6	230	6.28	528491	MONUMENT 3	115	14.88
526936	YOAKUM_345	345	9.14	528145	NATPOT_TP 2	69	9.04	528498	W_HOBBS 3	115	11.48
527009	BRU_SUB 6	230	13.91	528151	FIESTA 3	115	9.77	528512	EUNICE 3	115	6.07
527030	ALRDRCRTZ_TP3	115	8.70	528159	CARLSBAD 2	69	4.88	528533	DRINKARD_TP3	115	7.78
527130	DENVER_N 3	115	20.69	528160	CARLSBAD 3	115	11.26	528552	OIL_CENTER 3	115	5.82
527149	MUSTANG 6	230	15.58	528178	PECOS 3	115	11.84	528554	COOPER_RNCH3	115	6.22
527284	RUSSELL 3	115	8.99	528179	PECOS 6	230	6.53	528568	MONUMNT_TP 3	115	9.80
527286	XTO_RUSSEL 3	115	9.93	528185	N_LOVING 7	345	5.58	528575	OXYPERMIAN 3	115	14.73
527325	OXY_WSEM_TP3	115	8.42	528317	ENRON_TP 3	115	6.81	528582	BYRD 3	115	7.58
527360	MAPCO 3	115	10.19	528318	ENRON 3	115	5.92	528589	DRINKARD 3	115	7.95
527362	JOHNSON_DRW3	115	10.42	528325	LE-WAITS 3	115	6.68	528596	CARDINAL 3	115	8.01
527363	HIGG 3	115	10.09	528333	LE-WEST_SUB3	115	8.32	528602	ANDREWS 3	115	10.65
527483	CHAVES_CNTY6	230	4.50	528334	LE-NRTH_INT3	115	8.24	528603	NA_ENRICH 3	115	10.42
527793	EDDY_STH 3	115	11.80	528341	LE-SANANDRS3	115	6.32	528604	ANDREWS 6	230	6.61
527798	EDDY_NTH 3	115	11.80	528348	BUCKEYE_TP 3	115	8.12	528617	LE-WAITS 2	69	3.28
527799	EDDY_NORTH 6	230	9.21	528353	MADDOXG23 3	115	24.96	528618	LE-LOVINTON2	69	7.08
527802	EDDY_CNTY 7	345	7.13	528355	MADDOX 3	115	24.96	528622	LE-SANANDRS2	69	5.21
527864	CUNNINHAM 3	115	26.36	528385	BUCKEYE 3	115	7.31	528627	LE-TXACO_TP3	115	7.00
527865	CUNNIGHM_N 6	230	16.61	528392	PEARLE 3	115	6.28	528638	LE-SAUNDRTP2	69	3.55
527867	CUNNIGHM_S 6	230	16.61	528394	QUAHADA 3	115	8.15	528667	LE-MHOON 2	69	4.37
527891	HOBBS_INT 3	115	29.89	528399	LEA_NATIONL3	115	6.85	528675	LE-FAMARISS2	69	3.31
527894	HOBBS_INT 6	230	18.13	528406	MALJMAR1&2 3	115	3.23	528679	LE-TATUM_SW2	69	4.87
527896	HOBBS_INT 7	345	9.13	528413	TAYLOR 3	115	14.03	528699	LE-GRAY 2	69	4.13
527929	PCA 2	69	6.36	528420	ZIA 3	115	6.59	528775	LE-ERF 3	115	10.42
527930	PCA 3	115	11.63	528422	DCP_ZIA TP 3	115	7.05	528792	LE-TEXACO 3	115	6.35
527935	CV-SKELLY 3	115	3.25	528423	DCP_ZIA 3	115	6.68	560059	G1579&G1580T	230	9.14
527943	CV-LUSK 2	69	2.26	528433	BENSING 3	115	7.91	562480	G13-027-TAP	230	9.44
527947	CV-LUSK 3	115	3.50	528435	MILLEN 3	115	11.29	587110	GEN-2016-015	230	6.40
527948	CV-LUSK_TP 3	115	4.24	528442	NE_HOBBS 3	115	11.57	587420	GEN-2016-062	230	5.62
527961	POTASH_JCT 2	69	9.09	528449	W_BENDER 3	115	14.26	587670	GEN-2015-099	115	16.29
527962	POTASH_JCT 3	115	16.37	528456	N_HOBBS 3	115	8.85	588350	GEN-2016-171	230	8.91
527963	POTASH_JCT 6	230	7.27	528463	SANGER_SW 3	115	15.32	599960	EPTNP-D6	230	9.21
527965	KIOWA 7	345	7.81	528470	E_SANGER 3	115	12.30				

Table 4-10
Short Circuit Analysis for Study Project GEN-2016-121 (26SP)

Study Generator GEN-2016-121											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
525549	TOLK 7	345	15.53	527961	POTASH_JCT 2	69	9.09	528222	CHINA_DRAW 3	115	8.53
525832	TUCO_INT 7	345	16.02	527962	POTASH_JCT 3	115	16.37	528223	CHINA_DRAW 7	345	4.35
526935	YOAKUM 6	230	17.54	527963	POTASH_JCT 6	230	7.27	528226	HOPI_SUB 3	115	6.81
526936	YOAKUM_345	345	9.14	527965	KIOWA 7	345	7.81	528228	WOOD_DRAW 3	115	5.69
527483	CHAVES_CNTY6	230	4.50	527966	KIOWA 3	115	16.33	528230	AGAVE_RHILL3	115	9.04
527655	RSVLT_CC_E 7	345	8.20	527999	INTREPDW_TP3	115	13.47	528232	OCHOA 3	115	8.89
527656	CROSSROADS 7	345	9.23	528009	WIPP 3	115	6.84	528235	WOLFCAMP_TP3	115	5.79
527793	EDDY_STH 3	115	11.80	528016	SAND_DUNES 3	115	6.42	528236	WOLFCAMP 3	115	5.57
527798	EDDY_NTH 3	115	11.80	528018	RED_BLUFF 3	115	7.23	528239	PNDEROSATP 3	115	6.81
527799	EDDY_NORTH 6	230	9.21	528020	BOPCO_PKRLK3	115	5.69	528240	PONDEROSA 3	115	4.59
527802	EDDY_CNTY 7	345	7.13	528024	RR_SVC_HV 3	115	6.84	528519	WARD 3	115	5.41
527865	CUNNIGHM_N 6	230	16.61	528025	RDRUNNER 3	115	9.38	528540	WHITTEN 3	115	6.91
527867	CUNNIGHM_S 6	230	16.61	528027	RDRUNNER 7	345	4.54	528547	S_JAL 3	115	6.23
527891	HOBBS_INT 3	115	29.89	528035	IMC #1_TP 3	115	9.49	528604	ANDREWS 6	230	6.61
527894	HOBBS_INT 6	230	18.13	528040	BATTLE_AXE 3	115	2.89	560059	G1579&G1580T	230	9.14
527896	HOBBS_INT 7	345	9.13	528095	7-RIVERS 6	230	6.28	584940	GEN-2015-056	345	7.50
527930	PCA 3	115	11.63	528160	CARLSBAD 3	115	11.26	587990	GEN-2016-121	115	8.88
527953	LIVSTNRIDGE3	115	7.43	528182	NORTH_LOVNG3	115	9.43	588000	GEN-2016-123	345	9.08
527955	SAGE_BRUSH 3	115	5.12	528185	N_LOVING 7	345	5.58	599960	EPTNP-D6	230	9.21

Table 4-11
Short Circuit Analysis for Study Project GEN-2016-123, GEN-2016-124,
and GEN-2016-125 (26SP)

Study Generator GEN-2016-123, GEN-2016-124, GEN-2016-125											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511423	FLE TAP4	138	8.92	524909	ROSEVELT_N 6	230	8.99	527962	POTASH_JCT 3	115	15.85
511437	COMANC-4	138	18.40	524911	ROSEVELT_S 6	230	8.99	527963	POTASH_JCT 6	230	6.97
511439	LWSTAP 4	138	11.58	524915	SW_4K33 6	230	8.99	527965	KIOWA 7	345	7.51
511456	O.K.U.-7	345	5.26	525212	SWISHER 3	115	11.60	527966	KIOWA 3	115	15.82
511466	L.E.S.-2	69	16.66	525213	SWISHER 6	230	10.47	527999	INTREPDW_TP3	115	13.20
511467	L.E.S.-4	138	25.27	525460	NEWHART 3	115	16.57	528018	RED_BLUFF 3	115	7.15
511468	L.E.S.-7	345	14.13	525461	NEWHART 6	230	11.09	528024	RR_SVC_HV 3	115	6.78
511474	SHERID4	138	12.40	525480	PLANT_X 3	115	14.60	528025	RDRUNNER 3	115	9.28
511486	ELGINJ4	138	10.08	525481	PLANT_X 6	230	23.79	528027	RDRUNNER 7	345	4.44
511494	COMMTAP4	138	21.99	525524	TOLK_EAST 6	230	30.09	528040	BATTLE_AXE 3	115	2.88
511553	CHISHOLM7	345	11.09	525531	TOLK_WEST 6	230	30.09	528070	CV-AZMESA 3	115	7.34
511557	CHISHOLM6	230	11.15	525543	TOLK_TAP 6	230	30.09	528093	7-RIVERS 2	69	2.39
511565	OKLAUN HVDC7	345	5.24	525549	TOLK 7	345	15.36	528094	7-RIVERS 3	115	8.22
511568	TERRYRD7	345	10.21	525636	LAMB_CNTY 3	115	9.18	528095	7-RIVERS 6	230	6.11
511571	RUSHSPR7	345	6.46	525637	LAMB_CNTY 6	230	5.51	528109	CV-LAKEWOOD3	115	6.40
515045	SEMINOL7	345	26.53	525828	TUCO_INT 3	115	20.21	528132	OCOTILLO 3	115	6.10
515136	SUNNYS7	345	10.88	525830	TUCO_INT 6	230	24.60	528137	N_CANAL 3	115	8.53
515375	WWRDEHV7	345	19.76	525832	TUCO_INT 7	345	15.97	528160	CARLSBAD 3	115	11.01
515376	WWRDEHV4	138	23.01	525840	ANTELOPE_1 6	230	24.38	528178	PECOS 3	115	11.56
515407	TATONGA7	345	15.95	525850	ELK_CT1	345	15.77	528179	PECOS 6	230	6.32
515458	BORDER 7	345	9.27	525957	HALE_WNDC16	230	9.41	528182	NORTH_LOVNG3	115	9.28
515554	BVRCNTY7	345	16.35	526161	CARLISLE 6	230	13.95	528185	N_LOVING 7	345	5.43
515599	G07621119-20	345	13.18	526337	JONES 6	230	21.30	528192	SOUTH_LOVNG3	115	6.99
515800	GRACMNT7	345	17.72	526435	SUNDOWN 6	230	11.04	528222	CHINA_DRAW 3	115	8.41
523093	HITCHLAND 3	115	18.12	526935	YOAKUM 6	230	17.23	528223	CHINA_DRAW 7	345	4.25
523095	HITCHLAND 6	230	15.52	526936	YOAKUM_345	345	8.95	528226	HOPL_SUB 3	115	6.73
523097	HITCHLAND 7	345	16.98	527455	RSWL_SLRCL3	115	6.97	528230	AGAVE_RHILL3	115	8.95
523101	NOBLE_WND 7	345	16.91	527470	CHVS_SLRCL3	115	6.67	528604	ANDREWS 6	230	6.41
523103	NOBLE_WND 3	115	10.90	527482	CHAVES_CNTY3	115	7.05	539801	THISTLE7	345	16.47
523111	NOVUS1 3	115	20.00	527483	CHAVES_CNTY6	230	4.46	560010	G14-037-TAP	345	16.75
523112	NOVUS1 7	345	16.64	527501	URTON 3	115	5.84	560021	CRAWFISH_DR2	230	20.81
523155	OCHILTREE 6	230	4.25	527509	PRICE_TAP 3	115	5.39	560022	CRAWFISH_DR	345	16.05
523215	FREWHELCO17	345	9.77	527546	SAMSON 3	115	5.50	560035	GRAPEVINE	345	6.32
523221	XI_INTG 6	230	3.24	527564	RSWL_INT 3	115	5.76	560059	G1579&G1580T	230	8.85
523267	PRINGLE 6	230	4.25	527597	TWEEDY 3	115	5.30	560071	G16-003-TAP	345	15.27
523308	MOORE_E 3	115	11.79	527654	RSVLT_CC_W 7	345	7.26	560078	G16-037-TAP	345	9.44
523309	MOORE_CNTY 6	230	6.96	527655	RSVLT_CC_E 7	345	8.15	561000	OKU_SVC	345	5.26
523821	WALKEMEYER 3	115	10.43	527656	CROSSROADS 7	345	9.17	562480	G13-027-TAP	230	9.39
523823	WALKEMEYER 7	345	8.38	527707	ARTESIA 3	115	6.82	576395	GEN-2010-014	345	12.11
523853	FINNEY 7	345	10.36	527710	EAGLE_CREEK2	69	2.32	576396	G10-014-XFMR	115	13.62
523869	CHAN+TASCOS6	230	4.35	527711	EAGLE_CREEK3	115	7.42	583090	G1149&G1504	345	7.76
523959	POTTER_CO 6	230	22.13	527715	NAVAJO_2TP 3	115	7.07	583840	GEN-2013-027	230	8.90
523961	POTTER_CO 7	345	11.37	527736	NAVAJO_5TP 3	115	7.03	583960	G14034G14035	115	6.63
523977	HARRNG_WST 6	230	25.94	527786	ATOKA 3	115	7.12	584210	GEN-2014-037	345	11.69
523978	HARRNG_MID 6	230	25.94	527793	EDDY_STH 3	115	11.54	584940	GEN-2015-056	345	7.46
523979	HARRNG_EST 6	230	25.94	527798	EDDY_NTH 3	115	11.54	585003	CFSHDRW_SVC	345	16.05
524007	ROLLHILLS 3	115	18.53	527799	EDDY_NORTH 6	230	8.90	585080	GEN-2015-071	345	9.44
524010	ROLLHILLS 6	230	19.75	527802	EDDY_CNTY 7	345	6.91	587470	GEN-2016-069	115	6.80
524266	BUSHLAND 3	115	9.50	527809	CV-8_MILE 3	115	5.38	587740	GEN-2016-091	345	13.51
524267	BUSHLAND 6	230	10.71	527821	CV-DAYTON +3	115	7.03	587744	G16-091-TAP	345	15.27
524290	WILDOR2_JUS6	230	7.06	527822	CV-TURKYTRK3	115	3.44	587770	GEN-2016-095	345	11.13
524296	SPNSPUR_WND7	345	5.52	527864	CUNNINGHAM 3	115	25.53	587990	GEN-2016-121	115	8.79
524415	AMA_SOUTH 6	230	13.35	527865	CUNNINGHAM_N 6	230	14.07	588000	GEN-2016-123	345	9.02
524623	DEAFSMITH 6	230	13.77	527867	CUNNINGHAM_S 6	230	14.07	590001	OKLEHV24	138	4.79
524770	PLSNT_HILL 6	230	6.21	527891	HOBBS_INT 3	115	28.88	590003	OKLEHV14	138	4.80
524875	OASIS 6	230	7.46	527894	HOBBS_INT 6	230	16.14	599891	OKLAUN 7	345	4.04
524885	SN_JUAN_TAP6	230	4.81	527896	HOBBS_INT 7	345	8.69	599955	PNM-DC6	230	8.99
524889	SN_JUAN_WND6	230	4.60	527930	PCA 3	115	11.38	599960	EPTNP-D6	230	8.90
524908	ROOSEVELT 3	115	10.38	527961	POTASH_JCT 2	69	8.99			230	8.42

Table 4-12
Short Circuit Analysis for Study Project GEN-2016-171 (26SP)

Study Generator GEN-2016-171											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511456	O.K.U.-7	345	5.26	527036	SHELL_C2 3	115	12.79	528179	PECOS 6	230	6.32
511468	L.E.S.-7	345	14.13	527041	ARCO_TP 3	115	12.91	528182	NORTH_LOVNG3	115	9.28
515458	BORDER 7	345	9.27	527047	OXY_WILRD1 3	115	10.40	528185	N_LOVING 7	345	5.43
524623	DEAFSMITH 6	230	13.77	527051	ODC_TP 3	115	13.02	528223	CHINA_DRAW 7	345	4.25
524908	ROOSEVELT 3	115	10.38	527062	SHELL_CO2 3	115	15.68	528317	ENRON_TP 3	115	6.74
524909	ROSEVELT_N 6	230	8.99	527080	EL_PASO 3	115	15.46	528325	LE-WAITS 3	115	6.66
524911	ROSEVELT_S 6	230	8.99	527105	SAN_ANDS_TP3	115	16.30	528333	LE-WEST_SUB3	115	8.27
524915	SW_4K33 6	230	8.99	527125	DENVER_CTY 2	69	8.60	528334	LE-NRTH_INT3	115	8.20
525461	NEWHART 6	230	11.09	527130	DENVER_N 3	115	20.57	528348	BUCKEYE_TP 3	115	8.04
525480	PLANT_X 3	115	14.60	527136	DENVER_S 3	115	20.57	528353	MADDOXG23 3	115	24.45
525481	PLANT_X 6	230	23.79	527146	MUSTANG 3	115	22.12	528355	MADDOX 3	115	24.45
525524	TOLK_EAST 6	230	30.09	527149	MUSTANG 6	230	15.42	528385	BUCKEYE 3	115	7.25
525531	TOLK_WEST 6	230	30.09	527151	GS-MUSTANG 6	230	15.42	528392	PEARLE 3	115	6.23
525543	TOLK_TAP 6	230	30.09	527194	LG-PLSHILL 3	115	7.48	528394	QUAHADA 3	115	8.04
525549	TOLK 7	345	15.36	527201	SEAGRAVES 2	69	5.39	528399	LEA_NATIONL3	115	6.78
525636	LAMB_CNTY 3	115	9.18	527202	SEAGRAVES 3	115	8.47	528413	TAYLOR 3	115	13.85
525637	LAMB_CNTY 6	230	5.51	527238	ROZ 3	115	9.21	528422	DCP_ZIA TP 3	115	6.98
525828	TUCO_INT 3	115	20.21	527242	AMERADA 3	115	9.31	528433	BENSING 3	115	7.86
525830	TUCO_INT 6	230	24.60	527262	SULPHUR 3	115	5.64	528435	MILLEN 3	115	11.17
525832	TUCO_INT 7	345	15.97	527275	SEMINOLE 3	115	11.33	528442	NE_HOBBS 3	115	11.45
525840	ANTELOPE_1 6	230	24.38	527276	SEMINOLE 6	230	7.20	528463	SANGER_SW 3	115	15.12
525850	ELK_CT1	345	15.77	527284	RUSSELL 3	115	8.94	528484	SW_4J44 3	115	10.81
525957	HALE_WNDCL16	230	9.41	527286	XTO_RUSSEL 3	115	9.88	528491	MONUMENT 3	115	14.68
526036	LC-OPDYKE 3	115	5.76	527322	GAINES 3	115	8.47	528498	W_HOBBS 3	115	11.34
526161	CARLISLE 6	230	13.95	527340	DOSS 3	115	7.10	528568	MONUMNT_TP 3	115	9.85
526269	LUBBCK_STH 6	230	19.27	527362	JOHNSON_DRW3	115	10.35	528575	OXYPERMIAN 3	115	14.55
526337	JONES 6	230	21.30	527363	HIGG 3	115	10.04	528582	BYRD 3	115	7.69
526350	LEHMAN_TP 3	115	5.39	527483	CHAVES_CNTY6	230	4.46	528589	DRINKARD 3	115	7.85
526424	PACIFIC 3	115	9.16	527656	CROSSROADS 7	345	9.17	528602	ANDREWS 3	115	10.43
526434	SUNDOWN 3	115	10.80	527793	EDDY_STH 3	115	11.54	528603	NA_ENRICH 3	115	10.22
526435	SUNDOWN 6	230	11.04	527798	EDDY_NTH 3	115	11.54	528604	ANDREWS 6	230	6.41
526445	AMOCO_TP 3	115	10.13	527799	EDDY_NORTH 6	230	8.90	528605	TARGA 3	115	8.45
526460	AMOCO_SS 6	230	9.68	527802	EDDY_CNTY 7	345	6.91	528618	LE-LOVINTON2	69	7.06
526491	LG-CLAUENE 3	115	7.84	527864	CUNNINGHAM 3	115	25.53	528626	LE-PLNSINT 2	69	4.37
526524	WOLFFORTH 3	115	11.62	527865	CUNNINGHM_N 6	230	14.07	528627	LE-TXACO_TP3	115	6.95
526525	WOLFFORTH 6	230	13.79	527867	CUNNINGHM_S 6	230	14.07	528740	LE-PLANS_TP2	69	3.64
526735	TERRY_CNTY 2	69	6.94	527891	HOBBS_INT 3	115	28.88	560021	CRAWFISH_DR2	230	20.81
526736	TERRY_CNTY 3	115	10.31	527894	HOBBS_INT 6	230	16.14	560022	CRAWFISH_DR	345	16.05
526784	AMOCOWASSON6	230	13.69	527896	HOBBS_INT 7	345	8.69	560059	G1579&G1580T	230	8.85
526792	PRENTICE 3	115	5.87	527930	PCA 3	115	11.38	562480	G13-027-TAP	230	9.39
526928	PLAINS_INT 3	115	9.63	527962	POTASH_JCT 3	115	15.85	583840	GEN-2013-027	230	8.90
526934	YOAKUM 3	115	16.47	527963	POTASH_JCT 6	230	6.97	585003	CFSHDRW_SVC	345	16.05
526935	YOAKUM 6	230	17.23	527965	KIOWA 7	345	7.51	587110	GEN-2016-015	230	6.22
526936	YOAKUM_345	345	8.95	527966	KIOWA 3	115	15.82	587420	GEN-2016-062	230	5.48
526944	LG-PLAINS 3	115	7.67	528025	RDRUNNER 3	115	9.28	587670	GEN-2015-099	115	16.08
527009	BRU_SUB 6	230	13.74	528027	RDRUNNER 7	345	4.44	588350	GEN-2016-171	230	8.63
527010	OXYBRU 6	230	13.63	528095	7-RIVERS 6	230	6.11	599960	EPTNP-D6	230	8.90
527018	BENNETT 3	115	13.00								

Table 4-13
Short Circuit Analysis for Study Project GEN-2016-172 (26SP)

Study Generator GEN-2016-172											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
511456	O.K.U.-7	345	5.25	524606	HEREFORD 3	115	13.39	525446	RKYFORD_TP 3	115	9.87
511468	L.E.S.-7	345	14.03	524622	DEAFSMITH 3	115	15.52	525453	HALE_CNTY 2	69	6.91
511553	CHISHOLM7	345	11.09	524623	DEAFSMITH 6	230	14.03	525454	HALE_CNTY 3	115	10.16
515458	BORDER 7	345	9.27	524629	DS-#6 3	115	6.74	525460	NEWHART 3	115	16.84
522800	MU-TULIA 3	115	5.24	524681	DIMMIT_E&S 2	69	2.80	525461	NEWHART 6	230	11.27
523093	HITCHLAND 3	115	18.14	524688	DS-#3 2	69	2.97	525480	PLANT_X 3	115	17.90
523095	HITCHLAND 6	230	15.55	524694	DS-#22 3	115	4.63	525481	PLANT_X 6	230	24.59
523097	HITCHLAND 7	345	17.00	524714	CASTRO_TP 2	69	3.54	525524	TOLK_EAST 6	230	30.76
523101	NOBLE_WND 7	345	16.92	524721	DS-#15+2	69	3.56	525531	TOLK_WEST 6	230	30.76
523112	NOVUS1 7	345	16.65	524728	DS-CASTRO 2	69	4.29	525543	TOLK_TAP 6	230	30.76
523155	OCHILTREE 6	230	4.26	524734	DS-#21 3	115	9.47	525549	TOLK 7	345	15.53
523177	RB-SPURLCK+3	115	5.88	524745	CASTRO_CNTY2	69	8.87	525635	LAMB_CNTY 2	69	5.90
523215	FREWHELCO17	345	9.78	524746	CASTRO_CNTY3	115	9.97	525636	LAMB_CNTY 3	115	8.46
523216	RB-HOGUE 3	115	4.14	524757	BETHEL_COL13	115	8.28	525637	LAMB_CNTY 6	230	5.42
523220	XT_INTG 3	115	6.11	524770	PLSNT_HILL 6	230	6.20	525731	SP-ABERNTHY2	69	3.02
523221	XT_INTG 6	230	3.25	524908	ROOSEVELT 3	115	10.34	525738	HALECENTER 2	69	2.46
523256	ETTER 3	115	5.66	524909	ROSEVELT_N 6	230	9.01	525745	LH-HALECTR 2	69	2.44
523266	PRINGLE 3	115	10.65	524911	ROSEVELT_S 6	230	9.01	525779	FLOYD_CNTY 2	69	5.33
523267	PRINGLE 6	230	4.28	524915	SW_4K33 6	230	9.01	525780	FLOYD_CNTY 3	115	6.07
523277	VALERO 3	115	10.73	525018	EMULESH&VLY3	115	4.83	525816	TUCO_INT2 2	69	4.68
523304	MOORE_W 3	115	11.88	525019	EMU&VLY_TP 3	115	5.14	525826	TUCO_INT 2	69	7.94
523308	MOORE_E 3	115	11.88	525028	BAILEYCO 3	115	5.01	525828	TUCO_INT 3	115	20.27
523309	MOORE_CNTY 6	230	7.01	525050	BC-KELLEY +3	115	7.76	525830	TUCO_INT 6	230	24.60
523551	HUTCHISON 6	230	7.27	525056	BC-EARTH 3	115	8.18	525832	TUCO_INT 7	345	16.02
523771	GRAPEVINE 6	230	5.81	525116	DS-#12 2	69	2.38	525840	ANTELOPE_1 6	230	24.37
523823	WALKEMEYER 7	345	8.36	525119	BC-SUNYSIDE2	69	1.32	525853	LH-WIL&ELN+2	69	2.58
523869	CHAN+TASCOS6	230	4.38	525124	HART_INDUST3	115	7.79	525885	SP-NEWDEAL 2	69	3.32
523959	POTTER_CO 6	230	22.99	525129	LC-HART 2	69	2.57	525926	CROSBY 3	115	4.52
523961	POTTER_CO 7	345	11.49	525132	LC-N_OLTON 2	69	3.08	525957	HALE_WNDCL16	230	9.41
523977	HARRNG_WST 6	230	27.63	525143	HAPPY_CTYTP2	69	4.03	526020	HOCKLEY 3	115	5.42
523978	HARRNG_MID 6	230	27.63	525153	HAPPY_INT 2	69	4.46	526036	LC-OPDYKE 3	115	5.71
523979	HARRNG_EST 6	230	27.63	525154	HAPPY_TP 3	115	5.50	526076	STANTON_W 3	115	9.14
524007	ROLLHILLS 3	115	19.75	525179	TULIA_TP 3	115	6.52	526146	INDIANA 3	115	9.54
524009	CHERRY 3	115	18.87	525191	KRESS_INT 2	69	4.52	526161	CARLISLE 6	230	11.36
524010	ROLLHILLS 6	230	20.69	525192	KRESS_INT 3	115	12.18	526268	LUBBCK_STH 3	115	19.34
524043	NICHOLS 3	115	31.27	525203	SW-KRESS 2	69	4.52	526269	LUBBCK_STH 6	230	18.15
524044	NICHOLS 6	230	26.73	525212	SWISHER 3	115	11.72	526297	LUBBCK_EST 2	69	8.07
524106	NORTHWEST 3	115	11.38	525213	SWISHER 6	230	10.60	526298	LUBBCK_EST 3	115	15.46
524136	HASTINGS 3	115	13.92	525224	KRESS_RURL 2	69	2.53	526299	LUBBCK_EST 6	230	13.33
524163	EAST_PLANT 6	230	14.09	525225	KRESS_RURAL3	115	6.47	526337	JONES 6	230	20.53
524266	BUSHLAND 3	115	9.61	525249	LH-PLW&FNY+2	69	1.61	526424	PACIFIC 3	115	9.15
524267	BUSHLAND 6	230	10.87	525256	SW_9748 2	69	3.10	526434	SUNDOWN 3	115	10.79
524276	WILDOR_WND 6	230	5.23	525257	N_PLAINVEW 3	115	5.17	526435	SUNDOWN 6	230	11.05
524290	WILDOR2_JUS6	230	7.13	525271	KISER 2	69	3.48	526445	AMOCO_TP 3	115	10.12
524296	SPNSPUR_WND7	345	5.55	525272	KISER 3	115	5.17	526460	AMOCO_SS 6	230	9.70
524300	HILLSIDE 3	115	12.79	525284	WESTRIDGE 2	69	4.27	526524	WOLFFORTH 3	115	11.54
524364	RANDALL 3	115	21.73	525291	PLAINVW_TP 2	69	6.49	526525	WOLFFORTH 6	230	13.56
524365	RANDALL 6	230	14.82	525298	S_PLAINVEW 2	69	2.58	526935	YOAKUM 6	230	17.54
524377	FARMERS 3	115	15.41	525307	E_PLAINVEW 2	69	2.45	527656	CROSSROADS 7	345	9.23
524397	ARROWHEAD 3	115	13.74	525316	LH-PROVDNCE2	69	3.37	560010	G14-037-TAP	345	16.76
524404	OWENSCORN 3	115	15.08	525325	COX 2	69	3.37	560021	CRAWFISH_DR2	230	20.84
524414	AMA_SOUTH 3	115	16.95	525326	COX 3	115	5.95	560022	CRAWFISH_DR	345	16.10
524415	AMA_SOUTH 6	230	13.83	525339	AIKEN_RURL 2	69	2.45	560035	GRAPEVINE	345	6.34
524530	PALO_DURO 3	115	6.80	525393	ROCKYFORD 3	115	8.84	562004	G11-025-TAP	115	4.64
524544	SPRING_DRW 3	115	6.41	525397	OLTON 2	69	4.19	562480	G13-027-TAP	230	9.44
524556	LAPLATA 3	115	6.85	525404	LC-OLTON 2	69	4.50	576395	GEN-2010-014	345	12.11
524567	NE_HEREFORD3	115	11.67	525413	LAMTON 2	69	5.19	583840	GEN-2013-027	230	8.95
524573	NE_HEREFORD2	69	7.29	525414	LAMTON 3	115	7.67	585003	CRFSRDRW_SVC	345	16.10
524590	DAWN 3	115	6.76	525425	CORNER 2	69	3.63	587570	ASG1604	115	6.80
524597	PANDAHFD 3	115	10.48	525432	SP-HALFWAY+2	69	5.87	588440	GEN-2016-172	115	14.18
524604	HEREFRD_SB 2	69	4.66	525440	LC-S_OLTON+3	115	7.18	599955	PNM-DC6	230	9.01
524605	HEREFRD_NB 2	69	4.66								

Table 4-14
Short Circuit Analysis for Study Project GEN-2016-177 (26SP)

Study Generator GEN-2016-177											
Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)	Bus Number	Bus Name	Bus Voltage (kV)	Fault Current 3-LG (kA)
526736	TERRY_CNTY 3	115	10.31	527130	DENVER_N 3	115	20.69	528638	LE-SAUNDRTP2	69	3.55
527021	CORTEZ 3	115	6.39	527136	DENVER_S 3	115	20.69	528667	LE-MHOON 2	69	4.37
527022	APACHE_ROB 3	115	7.21	527146	MUSTANG 3	115	22.25	528675	LE-FAMARISS2	69	3.31
527024	ALLRED_SUB 3	115	7.91	527149	MUSTANG 6	230	15.58	528679	LE-TATUM_SW2	69	4.87
527030	ALRDORTZ_TP3	115	8.70	527183	JAYBEE 2	69	4.36	528699	LE-GRAY 2	69	4.13
527036	SHELL_C2 3	115	12.84	527202	SEAGRAVES 3	115	8.49	528703	LE-DENTN_TP2	69	3.89
527062	SHELL_CO2 3	115	15.75	527275	SEMINOLE 3	115	11.38	528709	LE-FTS_COND2	69	2.91
527068	SHELLC3_TP 3	115	10.63	527286	XTO_RUSSEL 3	115	9.93	528711	LE-TP89 2	69	1.91
527074	SHELLC3 3	115	9.56	527313	MIDAMERI_TP2	69	2.15	528714	LE-FORT_SW 2	69	3.10
527080	EL_PASO 3	115	15.52	527891	HOBBS_INT 3	115	29.89	528718	LE-NEWTX 2	69	1.91
527099	DC_EAST 2	69	6.08	528325	LE-WAITS 3	115	6.68	528759	LE-TP51 2	69	2.19
527105	SAN_ANDS_TP3	115	16.37	528333	LE-WEST_SUB3	115	8.32	528780	LE-NITROTEC2	69	1.93
527106	SAN_ANDRES 3	115	11.67	528334	LE-NRTH_INT3	115	8.24	588460	A16-008SUB	115	9.20
527111	WASSON 2	69	5.95	528617	LE-WAITS 2	69	3.28	588462	A16-008TP	115	9.20
527125	DENVER_CTY 2	69	8.61	528618	LE-LOVINTON2	69	7.08				

SECTION 5: CONCLUSIONS

Summary of Stability Analysis

The Stability Analysis determined that there were multiple contingencies across all seasons that resulted in system/voltage instability, generation tripping offline, and poor post-fault voltage recovery when all generation interconnection requests were at 100% output.

To mitigate the system/voltage instability, voltage violations, generation tripping offline, and poor post-fault steady-state voltages, the following upgrades were provided by SPP and implemented (upgrades provided here are required for 17W season and thus, implemented in remaining years):

- Hobbs to Yoakum to Tuco 345 kV circuit #1 (advancement in 17W and 18S)
- Yoakum 345/230 kV transformer #1 (advancement in 17W and 18S)
- Beaver to Clark County 345 kV circuit #1 (previously assigned)
- Border 345 kV 50 MVAR capacitor bank
- Crawfish Draw 345 kV 200 MVAR capacitor bank & +225/-150 MVAR SVC
- Crossroads 345 kV 20 MVAR capacitor bank
- Oklaunion 345 kV 130 MVAR capacitor bank & +300/-150 MVAR SVC
- Potter County 345 kV 100 MVAR capacitor bank
- Crawfish Draw to Lawton Eastside 345 kV circuit #1
- Chisholm to Potter County 345 kV circuit #1

After implementing the above upgrades, the contingency analysis was re-simulated for all contingencies. With the upgrades, the Stability Analysis determined that there was no wind turbine tripping or system instability observed as a result of interconnecting all study projects at 100% output.

Summary of the Short Circuit Analysis

The short circuit analysis was performed on the 2018 Summer Peak and 2026 Summer Peak power flows for all study projects. Refer to Table 5-1 and Table 5-2 for a list of maximum fault currents observed for each study project for the 18S and 26S cases, respectively.

Table 5-1
2018S: List of Maximum Fault Currents Observed for Each Study Project

Study Project	Fault Current at POI (kA)	Maximum Fault Current (kA)	Fault Location
ASGI-2016-009	11.19	30.76	Tolk 230 kV
GEN-2015-099	24.45	28.88	Hobbs 115 kV
GEN-2016-121	9.28	28.88	Hobbs 115 kV
GEN-2016-123	9.23	30.76	Tolk 230 kV
GEN-2016-124	9.23	30.76	Tolk 230 kV
GEN-2016-125	9.23	30.76	Tolk 230 kV
GEN-2016-171	9.14	30.76	Tolk 230 kV
GEN-2016-172	16.84	31.27	Nichols 115 kV
GEN-2016-177	9.17	28.88	Hobbs 115 kV

Table 5-2
2026S: List of Maximum Fault Currents Observed for Each Study Project

Study Project	Fault Current at POI (kA)	Maximum Fault Current (kA)	Fault Location
ASGI-2016-009	11.30	30.09	Tolk 230 kV
GEN-2015-099	24.96	29.89	Hobbs 115 kV
GEN-2016-121	9.38	29.89	Hobbs 115 kV
GEN-2016-123	9.17	30.09	Tolk 230 kV
GEN-2016-124	9.17	30.09	Tolk 230 kV
GEN-2016-125	9.17	30.09	Tolk 230 kV
GEN-2016-171	8.85	30.09	Tolk 230 kV
GEN-2016-172	16.84	31.27	Nichols 115 kV
GEN-2016-177	9.20	29.89	Hobbs 115 kV