SPS CLUSTER C

Delivery Point Network Study

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By SPP Engineering, Transmission Services

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
1/15/2025	SPP	Original	
8/8/2025	SPP	Stability Analysis & Table 3-4	SPP updated the stability section and updated one of the need dates in Table 3-4.
11/18/2025	SPP	Table 3-4 Update	Updated Table 3-4 to reflect the 2025 ITP projects.
11/20/2025	SPP	Updates to the Transmission Solutions and Conclusions sections	Changed Lea National 230kV to 345kV and clarified that the Roadrunner transformer was #3

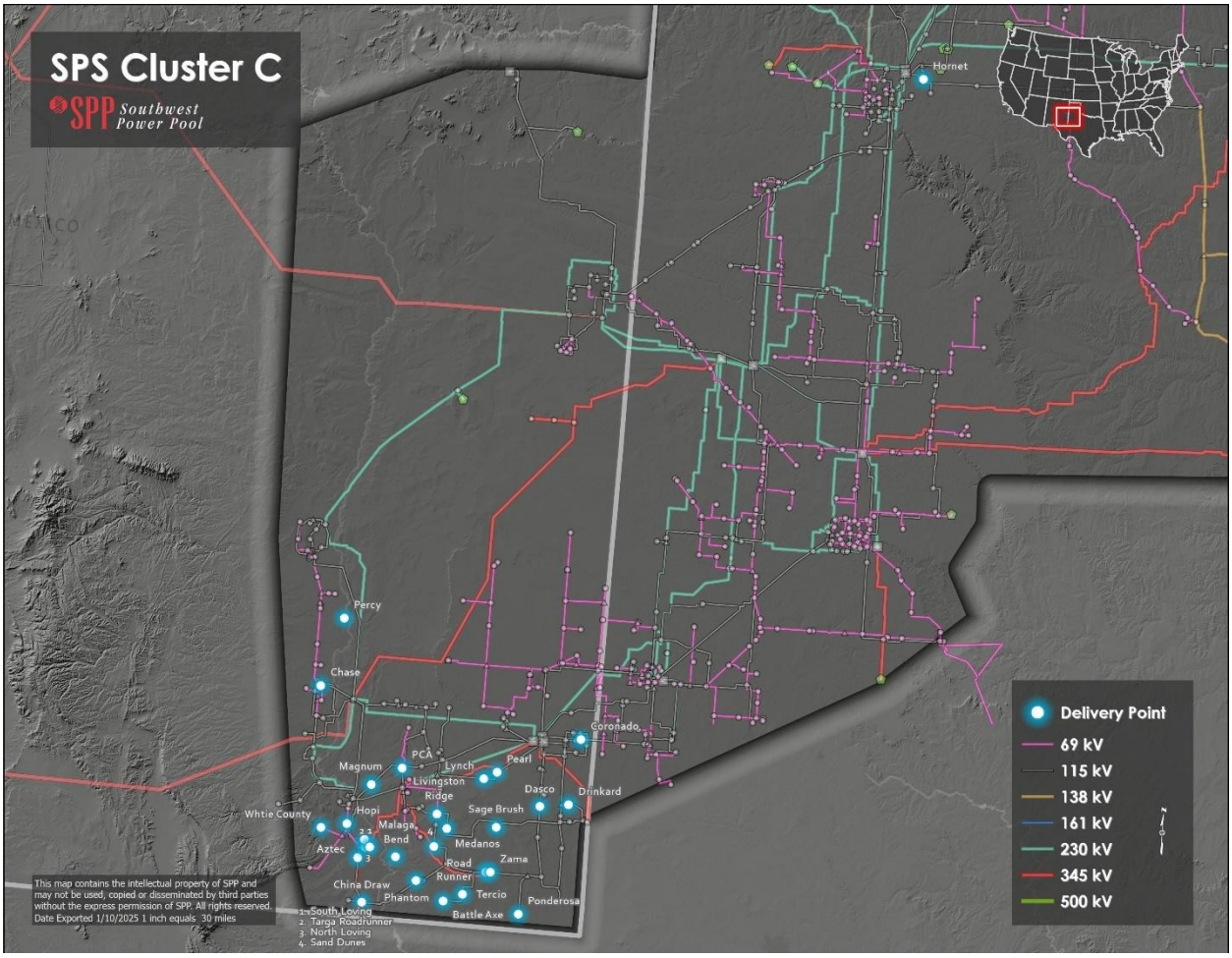
CONTENTS

SECTION 1: INTRODUCTION

This report outlines the results of an evaluation of regional transmission impacts from the following delivery point requests with the earliest in-service date of 12-15-2023:

- DPA-2023-April-1765
- DPA-2023-April-1771
- DPA-2023-April-1774
- DPA-2023-April-1775
- DPA-2023-April-1777
- DPA-2023-August-1833
- DPA-2023-August-1837
- DPA-2023-June-1791
- DPA-2023-June-1792
- DPA-2023-June-1799
- DPA-2023-June-1818

The requesting entity plans to add load to these delivery points. These delivery points are in the Southwestern Public Service Company (SPS) Transmission System.



The load flow models used for the evaluation were 2024 Integrated Transmission Planning (ITP) base reliability models. Southwest Power Pool (SPP) performed an Alternating Current (AC) contingency analysis on these models using PSS®E.

SECTION 2: STUDY METHODOLOGY

OBJECTIVE

The purpose of this study was to determine the regional Transmission System impacts within the SPP footprint due to the new load served by SPS. SPP performed a Delivery Point Network Study (DPNS) with the configurations shown in Table 2-1 below.

STUDY PROCESS

- Model Assumptions
  - 2024 ITP Base Reliability Model Series
    - Model years 2025, 2028, and 2033
    - Summer Peak (2025S, 2028S, and 2033S), Winter Peak (2025W, 2028W, and 2033W), and Light Load (2025L, 2028L, and 2033L)
  - 2024 ITP Short Circuit Model Series
    - 2028 Summer Max Fault
  - 2024 Transmission System Planning (TPL) Dynamic Model Series
    - 2033 Summer Peak Base and Change Cases
  - Includes the following AQ requests:
    - SPS Cluster A
      - DPA-2022-December-1698
      - DPA-2022-December-1699
      - DPA-2023-January-1705
    - SPS Cluster B
      - DPA-2023-February-1719
      - DPA-2023-March-1750
      - DPA-2023-March-1751
      - DPA-2023-March-1752
      - DPA-2023-May-1780

Case Name	Study Year	Season	Scenario	Load (MW/MVAR)
2024ITPPF-25L.sav	2025	Light Load	Base Reliability	Base Case
2024ITPPF-25S.sav	2025	Summer Peak	Base Reliability	Base Case
2024ITPPF-25W.sav	2025	Winter Peak	Base Reliability	Base Case
2024ITPPF-28L.sav	2028	Light Load	Base Reliability	Base Case
2024ITPPF-28S.sav	2028	Summer Peak	Base Reliability	Base Case
2024ITPPF-28W.sav	2028	Winter Peak	Base Reliability	Base Case
2024ITPPF-33L.sav	2033	Light Load	Base Reliability	Base Case
2024ITPPF-33S.sav	2033	Summer Peak	Base Reliability	Base Case
2024ITPPF-33W.sav	2033	Winter Peak	Base Reliability	Base Case
2024ITPPF-25L_1765.sav	2025	Light Load	Base Reliability	Listed in Appendix A
2024ITPPF-25S_1765.sav	2025	Summer Peak	Base Reliability	Listed in Appendix A

Case Name	Study Year	Season	Scenario	Load (MW/MVAR)
2024ITPPF-25W_1765.sav	2025	Winter Peak	Base Reliability	Listed in Appendix A
2024ITPPF-28L_1765.sav	2028	Light Load	Base Reliability	Listed in Appendix A
2024ITPPF-28S_1765.sav	2028	Summer Peak	Base Reliability	Listed in Appendix A
2024ITPPF-28W_1765.sav	2028	Winter Peak	Base Reliability	Listed in Appendix A
2024ITPPF-33L_1765.sav	2033	Light Load	Base Reliability	Listed in Appendix A
2024ITPPF-33S_1765.sav	2033	Summer Peak	Base Reliability	Listed in Appendix A
2024ITPPF-33W_1765.sav	2033	Winter Peak	Base Reliability	Listed in Appendix A

Table 2-1: Study Cases

- Steady State Analysis
  - Assumptions (consistent with the ITP analysis)
    - AC contingency analysis on all load flow models using PSS®E
    - Monitored Elements
      - SPP facilities 69 kV and above
      - First-tier companies 100 kV and above
    - Contingencies (consistent with the ITP analysis)
      - Provided for the ITP by SPP members and first-tier companies
    - Apply SPP Criteria and National American Electric Reliability Corporation (NERC) reliability standards
  - Compare thermal and voltage violations that occur with and without the delivery point changes to determine thermal and voltage violations resulting from the load addition to the Transmission System.
- Dynamics Analysis
  - Assumptions
    - 2024 TPL Dynamics Model Series
      - 2033 Summer Peak Base and Change Cases
  - Analyses
    - Fast Fault Screening using Physical and Operational Margins Studio
- Short Circuit Analysis
  - Assumptions
    - Used 2024 Final ITP Short Circuit models (Max Fault)
      - Placed all available facilities in service
        - Generation
        - Transmission lines
        - Transformers
        - Buses
      - Short Circuit Output
        - Physical
      - Short Circuit Coordinates
        - Polar
      - Short Circuit Parameters
        - 3 Phase
      - FLAT – classical fault analysis conditions
  - Analyses
    - Three-phase fault

SECTION 3: RESULTS OF ANALYSIS

POTENTIAL THERMAL AND VOLTAGE VIOLATIONS

The analysis identified potential thermal and voltage violations resulting from the Cluster C delivery point changes. Table 3-1 details the potential thermal violations and Table 3-2 details the potential voltage violations resulting from the load additions.

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
25S	115	LYNCH_TP 3 - PEARLE 3 - 1	BASE CASE	80/157	82.4	103
25S	115	LEA_ROAD 3 - WARD 3 - 1	BASE CASE	120/154	121.7	101.4
25S	115	MADDOX 3 - PEARLE 3 - 1	CUNNINHAM 3 - QUAHADA 3 - 1	150/150	155.1	103.4
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	CUNNINHAM 3 - MONUMNT_TP 3 - 1	239/239	246.2	103
25S	115	W_HOBBS 3 - DRINKARD_TP3 - 1	HOBBS_INT 6 - ANDREWS 6 - 1	159/159	164.6	103.5
25S	115	CUNNINHAM 3 - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	158/159	166.5	104.7
25S	115	MONUMENT 3 - W_HOBBS 3 - 1	TAYLOR 3 - E_SANGER 3 - 1	143/157	160.9	102.5
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	LEA_ROAD 3 - DASCO_TP 3 - 1	239/239	239.7	100.3
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	DASCO_TP 3 - OIL_CENTER 3 - 1	239/239	239.7	100.3
25S	115	COOPER_RNCH3 - BYRD_TP 3 - 1	TEAGUE 3 - S_JAL 3 - 1	143/157	160.6	102.3
25S	115	COOPER_RNCH3 - BYRD_TP 3 - 1	TEAGUE 3 - CARDINAL 3 - 1	143/157	162.3	103.4
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	OIL_CENTER 3 - COOPER_RNCH3 - 1	239/239	239.7	100.3
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	COOPER_RNCH3 - BYRD_TP 3 - 1	239/239	240.9	100.8
25S	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	MONUMNT_TP 3 - BYRD_TP 3 - 1	239/239	246.2	103
25S	115	W_HOBBS 3 - DRINKARD_TP3 - 1	ANDREWS 3 - NA_ENRICH 3 - 1	159/159	164.4	103.4
25W	115	MADDOX 3 - PEARLE 3 - 1	CUNNINHAM 3 - QUAHADA 3 - 1	150/150	159.9	106.6
25W	115	CUNNINHAM 3 - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	167/167	171.0	102.4

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
25W	115	LEA_ROAD 3 - DASCO_TP 3 - 1	TEAGUE 3 - CARDINAL 3 - 1	140/157	157.9	100.6
25W	115	DASCO_TP 3 - OIL_CENTER 3 - 1	TEAGUE 3 - CARDINAL 3 - 1	140/157	158.4	100.9
25W	115	LEA_ROAD 3 - DASCO_TP 3 - 1	CARDINAL 3 - TARGA_CLARK3 - 1	140/157	172.9	110.1
25W	115	LEA_ROAD 3 - WARD 3 - 1	CARDINAL 3 - TARGA_CLARK3 - 1	120/154	162.6	105.6
25W	115	DASCO_TP 3 - OIL_CENTER 3 - 1	CARDINAL 3 - TARGA_CLARK3 - 1	140/157	173.5	110.5
25W	115	COOPER_RNCH3 - BYRD_TP 3 - 1	CARDINAL 3 - TARGA_CLARK3 - 1	159/174	179.2	103
25W	115	W_HOBBS 3 - DRINKARD_TP3 - 1	ANDREWS 3 - NA_ENRICH 3 - 1	159/159	162.8	102.4
25W	115	LEA_ROAD 3 - DASCO_TP 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	140/157	175.5	111.8
25W	115	LEA_ROAD 3 - WARD 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	120/154	165.2	107.3
25W	115	DASCO_TP 3 - OIL_CENTER 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	140/157	176.3	112.3
25W	115	OIL_CENTER 3 - COOPER_RNCH3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	159/175	177.5	101.4
25W	115	COOPER_RNCH3 - BYRD_TP 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	159/174	182.4	104.8
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	BASE CASE	490/546	497.8	101.6
28L	115	LYNCH_TP 3 - PEARLE 3 - 1	BASE CASE	80/157	88.2	110.3
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	GEN525494 1	490/546	549.8	100.7
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	GEN527882 1	490/546	550.4	100.8
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	GEN527903 1	490/546	556.9	102
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	BORDER 7 - BECKHAM7 - 1	490/546	565.1	103.5
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	BORDER 7 - TUCO_INT 7 - 1	490/546	565.7	103.6
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	POTTER_CO 6 - NEWHART 6 - 1	490/546	602.8	110.4
28L	230	DEAFSMITH 6 - PLANT_X 6 - 1	POTTER_CO 6 - NEWHART 6 - 1	416/416	422.2	101.5

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	RANDALL 3 - CANYON_E_TP3 - 1	490/546	562.4	103
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	AMA_SOUTH 6 - SWISHER 6 - 1	490/546	572.8	104.9
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	CANYON_WEST3 - HUNSLEY 3 - 1	490/546	551.5	101
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	HUNSLEY 3 - CANYON_E_TP3 - 1	490/546	555.8	101.8
28L	115	PARMER_CO 3 - DS-#20 +3 - 1	DEAFSMITH 6 - PLANT_X 6 - 1	93/103	116.0	112.6
28L	115	DS-#20 +3 - CURRY 3 - 1	DEAFSMITH 6 - PLANT_X 6 - 1	93/103	117.7	114.3
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	NEWHART 6 - PLANT_X 6 - 1	490/546	560.7	102.7
28L	230	DEAFSMITH 6 - PLANT_X 6 - 1	NEWHART 6 - PLANT_X 6 - 1	416/416	431.0	103.6
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	TUCO_INT 6 - HALE_WNDCL16 - 1	490/546	567.3	103.9
28L	115	MURPHY 3 - QUINCY 3 - 1	LUBBCK_STH 6 - WOLFFORTH 6 - 1	160/175	191.3	109.3
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	SAGA_NDCOL 7 - SAGA_NCOL 7 - 1	490/546	552.6	101.2
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	SAGA_SDCOL 7 - SAGA_SMEAS 7 - 1	490/546	552.6	101.2
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	SAGA_SDCOL 7 - SAGA_SCOL 7 - 1	490/546	610.4	111.8
28L	230	DEAFSMITH 6 - PLANT_X 6 - 1	SAGA_SDCOL 7 - SAGA_SCOL 7 - 1	416/416	448.0	107.7
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	SAGA_SMEAS 7 - SAGA_NCOL 7 - 1	490/546	552.6	101.2
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	SAGA_SCOL 7 - CROSSROADS 7 - 1	490/546	610.4	111.8
28L	230	DEAFSMITH 6 - PLANT_X 6 - 1	SAGA_SCOL 7 - CROSSROADS 7 - 1	416/416	447.6	107.6
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	RSVLT_CC_E 7 - CROSSROADS 7 - 1	490/546	552.6	101.2
28L	115	RED_BLUFF 3 - TARGA HV - 1	KIOWA 7 - N_LOVING 7 - 1	276/303.6	355.2	117
28L	115	RED_BLUFF 3 - TARGA HV - 1	PHANTOM 7 - RDRUNNER 7 - 1	276/303.6	332.4	109.5
28L	115	CUNNQUAHTP - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	158/159	184.6	116.1

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
28L	115	CUNNQUAHTP - QUAHADA 3 - 1	LYNCH_TP 3 - PEARLE 3 - 1	158/159	169.5	106.6
28L	115	MADDOX 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	150/150	166.1	110.7
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	PLANT_X 6 - PLANT_X4 1 - 1	490/546	547.1	100.2
28L	345/230	TOLK 6 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	478/556	601.6	108.2
28L	345/230	TOLK 7 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	478/556	599.4	107.8
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	TUCO_INT 7 - BORDER 7 - 1	490/546	565.7	103.6
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	CUNNIGHM_S 6 - CUNINGHAM2 1 - 1	490/546	550.4	100.8
28L	230	BUSHLAND 6 - DEAFSMITH 6 - 1	HOBBS_INT 6 - HOBBS_PLT3 1 - 1	490/546	556.9	102
28L	230/115	POTASH_JCT 6 - SIEM00129601 - 1	KIOWA 7 - KIOWA 3 - 1	249/287	291.9	101.7
28S	115	LYNCH_TP 3 - PEARLE 3 - 1	BASE CASE	80/157	95.2	119
28S	115	CUNNINHAM 3 - CUNNQUAHTP - 1	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	158/159	160.3	100.8
28S	115	RED_BLUFF 3 - TARGA HV - 1	PHANTOM 7 - RDRUNNER 7 - 1	276/303.6	337.6	111.2
28S	115	CUNNQUAHTP - QUAHADA 3 - 1	ENRON_TP 3 - LYNCH_TP 3 - 1	158/159	160.1	100.7
28S	115	CUNNQUAHTP - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	158/159	195.9	123.2
28S	115	CUNNQUAHTP - QUAHADA 3 - 1	LYNCH_TP 3 - PEARLE 3 - 1	158/159	180.8	113.7
28S	115	MADDOX 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	150/150	176.9	117.9
28S	345/230	TOLK 6 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	478/556	622.2	111.9
28S	345/230	TOLK 7 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	478/556	620.5	111.6
28S	230/115	PECOS 3 - UPDATE3T19941 - 1	POTASH_JCT 3 - POTASH_JCT 6 - 1	168/168	169.0	100.6
28S	115	CUNNQUAHTP - QUAHADA 3 - 1	KIOWA 7 - KIOWA 3 - 1	158/159	160.4	100.9
28S	230/115	POTASH_JCT 6 - SIEM00129601 - 1	KIOWA 7 - KIOWA 3 - 1	249/287	318.6	111

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
28S	115	RED_BLUFF 3 - TARGA HV - 1	KIOWA 7 - N_LOVING 7 - 1	276/303.6	369.5	121.7
28W	115	MADDOX 3 - PEARLE 3 - 1	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	150/150	185.3	123.5
28W	115	MADDOX 3 - PEARLE 3 - 1	HOBBS_INT 7 - KIOWA 7 - 1	150/150	180.1	120.1
28W	115	MADDOX 3 - PEARLE 3 - 1	SAGE_BRUSH 3 - CARDINAL 3 - 1	150/150	194.1	129.4
28W	115	LYNCH_TP 3 - PEARLE 3 - 1	SAGE_BRUSH 3 - CARDINAL 3 - 1	138/152	152.5	100.3
28W	115	MADDOX 3 - PEARLE 3 - 1	POTASH_JCT 3 - INTREPDW_TP3 - 1	150/150	181.2	120.8
28W	115	MADDOX 3 - PEARLE 3 - 1	INTREPDW_TP3 - IMC_#1_TP 3 - 1	150/150	180.6	120.4
28W	115	MADDOX 3 - PEARLE 3 - 1	RED_BLUFF 3 - TARGA HV - 1	150/150	181.1	120.7
28W	115	MADDOX 3 - PEARLE 3 - 1	RDRUNNER 3 - TARGA HV - 1	150/150	182.7	121.8
28W	115	MADDOX 3 - PEARLE 3 - 1	ENRON_TP 3 - LEA_NATIONL3 - 1	150/150	189.9	126.6
28W	115	CUNNQUAHTP - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	167/167	185.0	110.8
28W	115	CUNNQUAHTP - QUAHADA 3 - 1	LYNCH_TP 3 - PEARLE 3 - 1	167/167	176.2	105.5
28W	115	MADDOX 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	150/150	209.4	139.6
28W	115	LYNCH_TP 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	138/152	167.7	110.3
28W	115	MADDOX 3 - PEARLE 3 - 1	QUAHADA 3 - LEA_NATIONL3 - 1	150/150	189.9	126.6
28W	115	MADDOX 3 - PEARLE 3 - 1	CARDINAL 3 - TARGA_CLARK3 - 1	150/150	184.4	122.9
28W	115	MADDOX 3 - PEARLE 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	150/150	186.5	124.3
28W	345/230	TOLK 6 - SAME A3T20038 - 2	TOLK 6 - TOLK 7 - 1	560/644	736.7	114.4
28W	345/230	TOLK 7 - SAME A3T20038 - 2	TOLK 6 - TOLK 7 - 1	560/644	730.9	113.5
28W	345/230	TOLK 6 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	556/556	742.8	133.6
28W	345/230	TOLK 7 - ABBXNL844501 - 1	TOLK 6 - TOLK 7 - 2	556/556	736.7	132.5

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
28W	115	MADDOX 3 - PEARLE 3 - 1	KIOWA 7 - KIOWA 3 - 1	150/150	188.6	125.7
33L	115	MADDOX 3 - PEARLE 3 - 1	BASE CASE	150/150	150.6	100.4
33L	230	POTTER_CO 6 - ROLLHILLS 6 - 1	POTTER_CO 6 - HARRNG_EST 6 - 1	498/548	647.7	118.2
33L	230	HARRNG_WST 6 - ROLLHILLS 6 - 1	POTTER_CO 6 - HARRNG_EST 6 - 1	478/547	642.2	117.4
33L	230	POTTER_CO 6 - HARRNG_EST 6 - 1	POTTER_CO 6 - ROLLHILLS 6 - 1	478/547	643.8	117.7
33L	230	POTTER_CO 6 - HARRNG_EST 6 - 1	HARRNG_WST 6 - ROLLHILLS 6 - 1	478/547	615.9	112.6
33L	115	MADDOX 3 - PEARLE 3 - 1	SAGE_BRUSH 3 - CARDINAL 3 - 1	150/150	176.1	117.4
33L	115	MADDOX 3 - PEARLE 3 - 1	ENRON_TP 3 - LEA_NATIONL3 - 1	150/150	180.8	120.5
33L	115	CUNNQUAHTP - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	158/159	165.4	104
33L	115	MADDOX 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	150/150	186.6	124.4
33L	115	MADDOX 3 - PEARLE 3 - 1	QUAHADA 3 - LEA_NATIONL3 - 1	150/150	180.8	120.5
33L	115	MADDOX 3 - PEARLE 3 - 1	KIOWA 7 - KIOWA 3 - 1	150/150	179.9	119.9
33L	115	CUNNQUAHTP - QUAHADA 3 - 1	KIOWA 7 - KIOWA 3 - 1	158/159	162.8	102.4
33L	230/115	POTASH_JCT 6 - SIEM00129601 - 1	KIOWA 7 - KIOWA 3 - 1	249/287	323.2	112.6
33L	345/115	PHANTOM 7 - TR 3 - 3	PHANTOM 3 - PHANTOM 7 - 1	435/435	462.4	106.3
33L	345/115	PHANTOM 7 - TR 3 - 3	PHANTOM 3 - PHANTOM 7 - 2	435/435	462.4	106.3
33L	115	MADDOX 3 - PEARLE 3 - 1	POTTER_CO 9 - CROSSROADS 9 - 1	150/150	173.3	115.5
33L	115	MADDOX 3 - PEARLE 3 - 1	POTTER_CO 7 - POTTER_CO 9 - 1	150/150	171.2	114.1
33S	115	MADDOX 3 - PEARLE 3 - 1	BASE CASE	150/150	158.9	105.9
33S	115	CUNNINHAM 3 - CUNNQUAHTP - 1	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	158/159	187.6	118
33S	115	MADDOX 3 - PEARLE 3 - 1	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	150/150	174.9	116.6
33S	115	MADDOX 3 - PEARLE 3 - 1	SAGE_BRUSH 3 - CARDINAL 3 - 1	150/150	185.3	123.5

Model	Voltage Level (kV)	Facility Name	Contingency Name	Rate A/ Rate B (MVA)	Max Flow (MVA)	Change Case Max Loading (%)
33S	115	MADDOX 3 - PEARLE 3 - 1	ENRON_TP 3 - LEA_NATIONL3 - 1	150/150	180.5	120.3
33S	115	CUNNQUAHTP - QUAHADA 3 - 1	MADDOX 3 - PEARLE 3 - 1	158/159	171.7	108
33S	115	CUNNQUAHTP - QUAHADA 3 - 1	LYNCH_TP 3 - PEARLE 3 - 1	158/159	162.8	102.4
33S	115	MADDOX 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	150/150	195.3	130.2
33S	115	LYNCH_TP 3 - PEARLE 3 - 1	CUNNQUAHTP - QUAHADA 3 - 1	138/152	157.8	103.8
33S	115	MADDOX 3 - PEARLE 3 - 1	QUAHADA 3 - LEA_NATIONL3 - 1	150/150	180.5	120.3
33S	115	MADDOX 3 - PEARLE 3 - 1	NA_ENRICH 3 - TARGA_CLARK3 - 1	150/150	175.7	117.1
33S	115	MADDOX 3 - PEARLE 3 - 1	KIOWA 7 - KIOWA 3 - 1	150/150	187.8	125.2
33S	115	CUNNQUAHTP - QUAHADA 3 - 1	KIOWA 7 - KIOWA 3 - 1	158/159	168.4	105.9
33S	230/115	POTASH_JCT 3 - SIEM00129601 - 1	KIOWA 7 - KIOWA 3 - 1	249/287	289.3	100.8
33S	230/115	POTASH_JCT 6 - SIEM00129601 - 1	KIOWA 7 - KIOWA 3 - 1	249/287	323.4	112.7
33S	345/115	PHANTOM 7 - TR 3 - 3	PHANTOM 3 - PHANTOM 7 - 1	435/435	469.8	108
33S	345/115	PHANTOM 7 - TR 3 - 3	PHANTOM 3 - PHANTOM 7 - 2	435/435	469.8	108
33S	115	MADDOX 3 - PEARLE 3 - 1	PHANTOM 9 - PHANTOM 7 - 1	150/150	183.5	122.3
33W	115	MADDOX 3 - PEARLE 3 - 1	BASE CASE	150/150	151.2	100.8

Table 3-1: Potential Thermal Violations

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2025	Light Load	SAGE_BRUSH 3	115	BASE CASE	1.05	0.95	0.94784
2025	Light Load	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.92918
2025	Light Load	PECOS 6	230	BASE CASE	1.05	0.95	0.94679
2025	Light Load	POTASH_JCT 6	230	GEN527903 1	1.05	0.9	0.89757
2025	Light Load	AMOCO_SS 6	230	SUNDOWN 6 - AMOCO_SS 6 - 1	1.05	0.9	0.8945
2025	Light Load	OXY_PALINDM3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.72799
2025	Light Load	MEDANOS 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.73033
2025	Light Load	SAGE_BRUSH 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.79505
2025	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.7663
2025	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.76586
2025	Light Load	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.81518
2025	Light Load	SAGE_BRUSH 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.85313
2025	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.83596
2025	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.83557
2025	Light Load	POTASH_JCT 6	230	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.89677
2025	Light Load	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89436
2025	Light Load	SAGE_BRUSH 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89763
2025	Light Load	POTASH_JCT 6	230	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89484
2025	Light Load	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89931
2025	Light Load	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89894
2025	Light Load	PHANTOM 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88332
2025	Light Load	PHANTOM 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88932
2025	Light Load	BOPCO_PKRLK3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88364
2025	Light Load	N_LOVING 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.86397
2025	Light Load	SOUTH_LOVNG3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89528
2025	Light Load	MALAGABEND 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88176
2025	Light Load	AGAVE_PDURO3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89768
2025	Light Load	CHINA_DRAW 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88038
2025	Light Load	HOPI_SUB 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88536
2025	Light Load	WOLFCAMP_TP3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88511
2025	Light Load	ZAMA 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88456
2025	Light Load	CUSTERMTN 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88435

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2025	Light Load	WHITTEN 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.89789
2025	Light Load	SOUTH_LOVNG3	115	NORTH_LOVNG3 - SOUTH_LOVNG3 - 1	1.05	0.9	0.8905
2025	Light Load	CUSTERMTN 3	115	ZAMA 3 - CUSTERMTN 3 - 1	1.05	0.9	0.88312
2025	Light Load	WHITTEN 3	115	ZAMA 3 - CUSTERMTN 3 - 1	1.05	0.9	0.89684
2025	Light Load	MIDSPRON_TP3	115	ENRON_TP 3 - LEA_NATIONL3 - 1	1.05	0.9	0.89371
2025	Light Load	ENRON_TP 3	115	ENRON_TP 3 - LEA_NATIONL3 - 1	1.05	0.9	0.89579
2025	Light Load	LYNCH_TP 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.87143
2025	Light Load	PEARLE 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.86426
2025	Light Load	MIDSPRON_TP3	115	QUAHADA 3 - LEA_NATIONL3 - 1	1.05	0.9	0.8881
2025	Light Load	ENRON_TP 3	115	QUAHADA 3 - LEA_NATIONL3 - 1	1.05	0.9	0.8902
2025	Light Load	LEA_NATIONL3	115	QUAHADA 3 - LEA_NATIONL3 - 1	1.05	0.9	0.89018
2025	Light Load	POTASH_JCT 6	230	HOBBS_INT 6 - HOBBS_PLT3 1 - 1	1.05	0.9	0.89768
2025	Light Load	NORTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89897
2025	Light Load	SOUTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89828
2025	Light Load	AGAVE_PDURO3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89064
2025	Summer	DS-#22 3	115	BASE CASE	1.05	0.95	0.9497
2025	Summer	OXY_PALINDM3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.758
2025	Summer	MEDANOS 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.76024
2025	Summer	SAGE_BRUSH 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.8211
2025	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.7946
2025	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.79428
2025	Summer	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.84548
2025	Summer	SAGE_BRUSH 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.88116
2025	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.86546
2025	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.86517

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2025	Summer	LE-SANANDRS2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.85131
2025	Summer	LE-BUCKEYE 2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.86539
2025	Summer	LE-BAYWAPOI2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.89958
2025	Summer	LE-SAUNDERS2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.89017
2025	Summer	LE-WILAM_TP2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.88293
2025	Summer	LE-DALLAS 2	69	CUNNINHAM 3 - BUCKEYE_TP 3 - 1	1.05	0.9	0.8711
2025	Summer	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89674
2025	Summer	LE-SANANDRS2	69	BUCKEYE_TP 3 - LE-TXACO_TP3 - 1	1.05	0.9	0.88408
2025	Summer	LE-BUCKEYE 2	69	BUCKEYE_TP 3 - LE-TXACO_TP3 - 1	1.05	0.9	0.89562
2025	Summer	LE-DALLAS 2	69	BUCKEYE_TP 3 - LE-TXACO_TP3 - 1	1.05	0.9	0.89695
2025	Winter	SAGE_BRUSH 3	115	BASE CASE	1.05	0.95	0.93733
2025	Winter	POTASH_JCT 6	230	BASE CASE	1.05	0.95	0.94816
2025	Winter	MIDSPRON_TP3	115	BASE CASE	1.05	0.95	0.94681
2025	Winter	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.94083
2025	Winter	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.94048
2025	Winter	ENRON_TP 3	115	BASE CASE	1.05	0.95	0.94877
2025	Winter	LEA_NATIONL3	115	BASE CASE	1.05	0.95	0.9489
2025	Winter	OXY_PALINDM3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.70035
2025	Winter	MEDANOS 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.70278
2025	Winter	SAGE_BRUSH 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.77165
2025	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.741
2025	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.74055
2025	Winter	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.80669
2025	Winter	SAGE_BRUSH 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.84604
2025	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.82827
2025	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.82787

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2025	Winter	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.8764
2025	Winter	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.88913
2025	Winter	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.88875
2025	Winter	LYNCH_TP 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.88931
2025	Winter	PEARLE 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.88649
2025	Winter	SAGE_BRUSH 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89362
2025	Winter	TARGA_CLARK3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89925
2028	Light Load	OXY_PALINDM3	115	BASE CASE	1.05	0.95	0.93728
2028	Light Load	MEDANOS 3	115	BASE CASE	1.05	0.95	0.9302
2028	Light Load	SAGE_BRUSH 3	115	BASE CASE	1.05	0.95	0.9255
2028	Light Load	POTASH_JCT 6	230	BASE CASE	1.05	0.95	0.93253
2028	Light Load	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.92172
2028	Light Load	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.92065
2028	Light Load	PHANTOM 3	115	BASE CASE	1.05	0.95	0.94421
2028	Light Load	SAND_DUNES 3	115	BASE CASE	1.05	0.95	0.94711
2028	Light Load	RED_BLUFF 3	115	BASE CASE	1.05	0.95	0.94712
2028	Light Load	BOPCO_PKRLK3	115	BASE CASE	1.05	0.95	0.94403
2028	Light Load	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.92844
2028	Light Load	TERCIO 3	115	BASE CASE	1.05	0.95	0.94786
2028	Light Load	PECOS 6	230	BASE CASE	1.05	0.95	0.94593
2028	Light Load	WOLFCAMP_TP3	115	BASE CASE	1.05	0.95	0.9434
2028	Light Load	CHEVRON_DAGG	115	SWITCHED_SHUNT-527953	1.05	0.9	0.89836
2028	Light Load	CHEVRON_DAGG	115	SWITCHED_SHUNT-527953	1.05	0.9	0.89725
2028	Light Load	BATTLE_AXE 3	115	SWITCHED_SHUNT-528040	1.05	0.9	0.89302
2028	Light Load	OXY_PALINDM3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.4858
2028	Light Load	MEDANOS 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.48972
2028	Light Load	SAGE_BRUSH 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.62101
2028	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.55616
2028	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.55455
2028	Light Load	TEAGUE 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.89845
2028	Light Load	CARDINAL 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.87859

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Light Load	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.65925
2028	Light Load	SAGE_BRUSH 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.73735
2028	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.6977
2028	Light Load	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.69627
2028	Light Load	POTASH_JCT 6	230	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.8945
2028	Light Load	OXY_PALINDM3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.88661
2028	Light Load	MEDANOS 3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.87991
2028	Light Load	SAGE_BRUSH 3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.88444
2028	Light Load	CHEVRON_DAGG	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.87586
2028	Light Load	CHEVRON_DAGG	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.87472
2028	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CHEVRON_DAGG - 1	1.05	0.9	0.89709
2028	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CHEVRON_DAGG - 1	1.05	0.9	0.89598
2028	Light Load	OXY_PALINDM3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.86436
2028	Light Load	LIVSTNRIDGE3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89771
2028	Light Load	MEDANOS 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.84936
2028	Light Load	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.79209
2028	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.80768
2028	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.80644
2028	Light Load	OXY_PALINDM3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85753
2028	Light Load	LIVSTNRIDGE3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.87341
2028	Light Load	MEDANOS 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85141
2028	Light Load	SAGE_BRUSH 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.86349

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Light Load	CHEVRON_DAGG	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85148
2028	Light Load	CHEVRON_DAGG	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85031
2028	Light Load	INTREPDW_TP3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.86444
2028	Light Load	WIPP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.88115
2028	Light Load	SAND_DUNES 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.89365
2028	Light Load	IMC_#1_TP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.86509
2028	Light Load	XTO_DI9_TP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.86748
2028	Light Load	OXY_PALINDM3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.87816
2028	Light Load	LIVSTNRIDGE3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89335
2028	Light Load	MEDANOS 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.87238
2028	Light Load	SAGE_BRUSH 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88264
2028	Light Load	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.87235
2028	Light Load	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.8712
2028	Light Load	WIPP 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88393
2028	Light Load	PHANTOM 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.78761
2028	Light Load	PHANTOM 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80518
2028	Light Load	SAND_DUNES 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.8615
2028	Light Load	RED_BLUFF 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.84168
2028	Light Load	BOPCO_PKRLK3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.78821
2028	Light Load	NORTH_LOVNG3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81647
2028	Light Load	SENDERO +3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81684
2028	Light Load	N_LOVING 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80199
2028	Light Load	SOUTH_LOVNG3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80536
2028	Light Load	BLACKRIVER 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81639
2028	Light Load	MALAGABEND 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.7928
2028	Light Load	AGAVE_PDURO3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80725
2028	Light Load	AZTEC 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.82779
2028	Light Load	CHINA_DRAW 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.86733
2028	Light Load	CHINA_DRAW 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80243
2028	Light Load	HOPI_SUB 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.83728
2028	Light Load	WOOD_DRAW 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81657
2028	Light Load	WOLFCAMP_TP3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.79085
2028	Light Load	OXY_PALINDM3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.86191
2028	Light Load	LIVSTNRIDGE3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.87792

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Light Load	MEDANOS 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.8557
2028	Light Load	SAGE_BRUSH 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.86667
2028	Light Load	CHEVRON_DAGG	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.85517
2028	Light Load	CHEVRON_DAGG	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.85401
2028	Light Load	WIPP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.88519
2028	Light Load	SAND_DUNES 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.89665
2028	Light Load	IMC_#1_TP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.87112
2028	Light Load	XTO_DI9_TP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.87283
2028	Light Load	MEDANOS 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89567
2028	Light Load	SAGE_BRUSH 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89884
2028	Light Load	CHEVRON_DAGG	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.8915
2028	Light Load	CHEVRON_DAGG	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89038
2028	Light Load	PHANTOM 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.86468
2028	Light Load	PHANTOM 7	345	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.87466
2028	Light Load	SAND_DUNES 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89936
2028	Light Load	RED_BLUFF 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.88957
2028	Light Load	BOPCO_PKRLK3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.86481
2028	Light Load	MALAGABEND 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.88865
2028	Light Load	CHINA_DRAW 7	345	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.8907
2028	Light Load	WOLFCAMP_TP3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.86546
2028	Light Load	OXY_PALINDM3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.89986
2028	Light Load	MEDANOS 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.89328
2028	Light Load	SAGE_BRUSH 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.89648
2028	Light Load	CHEVRON_DAGG	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.8889
2028	Light Load	CHEVRON_DAGG	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.88778

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Light Load	RED_BLUFF 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.89434
2028	Light Load	OXY_PALINDM3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.8973
2028	Light Load	MEDANOS 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89073
2028	Light Load	SAGE_BRUSH 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89437
2028	Light Load	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.88654
2028	Light Load	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.88542
2028	Light Load	SAND_DUNES 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.8955
2028	Light Load	RED_BLUFF 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.88812
2028	Light Load	TARGA HV	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.88322
2028	Light Load	ZAMA 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.8726
2028	Light Load	CUSTERMTN 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88653
2028	Light Load	OXY_PALINDM3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.87133
2028	Light Load	LIVSTNRIDGE3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.88769
2028	Light Load	MEDANOS 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.8649
2028	Light Load	SAGE_BRUSH 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.87319
2028	Light Load	CHEVRON_DAGG	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.86287
2028	Light Load	CHEVRON_DAGG	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.86172
2028	Light Load	WIPP 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.89391
2028	Light Load	XTO_DI9_TP 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.8847
2028	Light Load	OXY_PALINDM3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.87117
2028	Light Load	LIVSTNRIDGE3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.88752
2028	Light Load	MEDANOS 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.86474
2028	Light Load	SAGE_BRUSH 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.87309
2028	Light Load	CHEVRON_DAGG	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.86275
2028	Light Load	CHEVRON_DAGG	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.86159
2028	Light Load	WIPP 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.89375
2028	Light Load	XTO_DI9_TP 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.88448
2028	Light Load	SOUTH_LOVNG3	115	NORTH_LOVNG3 - SOUTH_LOVNG3 - 1	1.05	0.9	0.88145
2028	Light Load	MALAGABEND 3	115	NORTH_LOVNG3 - SOUTH_LOVNG3 - 1	1.05	0.9	0.89487
2028	Light Load	LYNCH_TP 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.88687
2028	Light Load	PEARLE 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.88402
2028	Light Load	SAGE_BRUSH 3	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.8846
2028	Light Load	CHEVRON_DAGG	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.88781
2028	Light Load	CHEVRON_DAGG	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.88669
2028	Light Load	MEDANOS 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89959
2028	Light Load	SAGE_BRUSH 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.87284

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Light Load	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.878
2028	Light Load	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.87687
2028	Light Load	CARDINAL 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89727
2028	Light Load	TARGA_CLARK3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89572
2028	Light Load	OXY_PALINDM3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89926
2028	Light Load	MEDANOS 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89297
2028	Light Load	SAGE_BRUSH 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.8978
2028	Light Load	POTASH_JCT 6	230	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89551
2028	Light Load	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88979
2028	Light Load	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88867
2028	Light Load	AGAVE_PDURO3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89492
2028	Summer	CHEVRON_DAGG	115	BASE CASE	1.05	0.9	0.89848
2028	Summer	CHEVRON_DAGG	115	BASE CASE	1.05	0.9	0.89676
2028	Summer	OXY_PALINDM3	115	BASE CASE	1.05	0.95	0.92612
2028	Summer	LIVSTNRIDGE3	115	BASE CASE	1.05	0.95	0.94718
2028	Summer	MEDANOS 3	115	BASE CASE	1.05	0.95	0.91695
2028	Summer	SAGE_BRUSH 3	115	BASE CASE	1.05	0.95	0.90091
2028	Summer	POTASH_JCT 6	230	BASE CASE	1.05	0.95	0.93467
2028	Summer	WIPP 3	115	BASE CASE	1.05	0.95	0.94897
2028	Summer	PHANTOM 7	345	BASE CASE	1.05	0.95	0.94329
2028	Summer	SAND_DUNES 3	115	BASE CASE	1.05	0.95	0.94694
2028	Summer	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.92397
2028	Summer	TERCIO 3	115	BASE CASE	1.05	0.95	0.94361
2028	Summer	SISKO_TP 3	115	BASE CASE	1.05	0.95	0.9484
2028	Summer	MALJMAR1&2 3	115	BASE CASE	1.05	0.95	0.94514
2028	Summer	OXY_PALINDM3	115	SWITCHED_SHUNT-527953	1.05	0.9	0.89638
2028	Summer	MEDANOS 3	115	SWITCHED_SHUNT-527953	1.05	0.9	0.88829
2028	Summer	SAGE_BRUSH 3	115	SWITCHED_SHUNT-527953	1.05	0.9	0.8826
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-527953	1.05	0.9	0.87589
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-527953	1.05	0.9	0.87413
2028	Summer	SAGE_BRUSH 3	115	SWITCHED_SHUNT-528009	1.05	0.9	0.89471
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528009	1.05	0.9	0.89083
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528009	1.05	0.9	0.8891
2028	Summer	SAGE_BRUSH 3	115	SWITCHED_SHUNT-528015	1.05	0.9	0.89584
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528015	1.05	0.9	0.89244
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528015	1.05	0.9	0.89071
2028	Summer	BATTLE_AXE 3	115	SWITCHED_SHUNT-528040	1.05	0.9	0.88868
2028	Summer	SAGE_BRUSH 3	115	SWITCHED_SHUNT-528603	1.05	0.9	0.894
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528603	1.05	0.9	0.89284

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	CHEVRON_DAGG	115	SWITCHED_SHUNT-528603	1.05	0.9	0.89112
2028	Summer	BEARD-T 2	69	TURPIN 2 - TURPIN-T 2 - 1	1.05	0.93	0.92823
2028	Summer	TURPIN-T 2	69	TURPIN 2 - TURPIN-T 2 - 1	1.05	0.93	0.92502
2028	Summer	HORNET	115	NICHOLS 3 - HORNET - 1	1.05	0.9	0.88931
2028	Summer	SAGE_BRUSH 3	115	TOLK 7 - CROSSROADS 7 - 1	1.05	0.9	0.88894
2028	Summer	CHEVRON_DAGG	115	TOLK 7 - CROSSROADS 7 - 1	1.05	0.9	0.88773
2028	Summer	CHEVRON_DAGG	115	TOLK 7 - CROSSROADS 7 - 1	1.05	0.9	0.88599
2028	Summer	SAGE_BRUSH 3	115	YOAKUM 7 - HOBBS_INT 7 - 1	1.05	0.9	0.88582
2028	Summer	CHEVRON_DAGG	115	YOAKUM 7 - HOBBS_INT 7 - 1	1.05	0.9	0.88504
2028	Summer	CHEVRON_DAGG	115	YOAKUM 7 - HOBBS_INT 7 - 1	1.05	0.9	0.8833
2028	Summer	SAGE_BRUSH 3	115	EDDY_CNTY 7 - KIOWA 7 - 1	1.05	0.9	0.89457
2028	Summer	CHEVRON_DAGG	115	EDDY_CNTY 7 - KIOWA 7 - 1	1.05	0.9	0.89208
2028	Summer	CHEVRON_DAGG	115	EDDY_CNTY 7 - KIOWA 7 - 1	1.05	0.9	0.89035
2028	Summer	SAGE_BRUSH 3	115	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.89187
2028	Summer	CHEVRON_DAGG	115	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.88944
2028	Summer	CHEVRON_DAGG	115	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.8877
2028	Summer	SAGE_BRUSH 3	115	HOBBS_INT 6 - ANDREWS 6 - 1	1.05	0.9	0.89344
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 6 - ANDREWS 6 - 1	1.05	0.9	0.89224
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 6 - ANDREWS 6 - 1	1.05	0.9	0.89051
2028	Summer	SAGE_BRUSH 3	115	HOBBS_INT 7 - KIOWA 7 - 1	1.05	0.9	0.89351
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - KIOWA 7 - 1	1.05	0.9	0.89074
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - KIOWA 7 - 1	1.05	0.9	0.88902
2028	Summer	SAGE_BRUSH 3	115	HOBBS_INT 7 - RDRUNNER 7 - UC	1.05	0.9	0.89527
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - RDRUNNER 7 - UC	1.05	0.9	0.89298
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - RDRUNNER 7 - UC	1.05	0.9	0.89126
2028	Summer	SAGE_BRUSH 3	115	HOBBS_INT 7 - RDRUNNER 7 - XA	1.05	0.9	0.89527
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - RDRUNNER 7 - XA	1.05	0.9	0.89298
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 7 - RDRUNNER 7 - XA	1.05	0.9	0.89126
2028	Summer	CHEVRON_DAGG	115	LIVSTNRIDGE3 - WIPP 3 - 1	1.05	0.9	0.89314
2028	Summer	CHEVRON_DAGG	115	LIVSTNRIDGE3 - WIPP 3 - 1	1.05	0.9	0.89142
2028	Summer	OXY_PALINDM3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.87365

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	LIVSTNRIDGE3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.89441
2028	Summer	MEDANOS 3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.86476
2028	Summer	SAGE_BRUSH 3	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.85726
2028	Summer	CHEVRON_DAGG	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.8501
2028	Summer	CHEVRON_DAGG	115	LIVSTNRIDGE3 - XTO_DI9_TP 3 - 1	1.05	0.9	0.84829
2028	Summer	SAGE_BRUSH 3	115	MEDANOS 3 - CHEVRON_DAGG - 1	1.05	0.9	0.86219
2028	Summer	CHEVRON_DAGG	115	MEDANOS 3 - CHEVRON_DAGG - 1	1.05	0.9	0.8474
2028	Summer	CHEVRON_DAGG	115	MEDANOS 3 - CHEVRON_DAGG - 1	1.05	0.9	0.84558
2028	Summer	MEDANOS 3	115	SAGE_BRUSH 3 - CHEVRON_DAGG - 1	1.05	0.9	0.89726
2028	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CHEVRON_DAGG - 1	1.05	0.9	0.87509
2028	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CHEVRON_DAGG - 1	1.05	0.9	0.87333
2028	Summer	OXY_PALINDM3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.8511
2028	Summer	LIVSTNRIDGE3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89011
2028	Summer	MEDANOS 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.83324
2028	Summer	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.76364
2028	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.77984
2028	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.77786
2028	Summer	WIPP 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89791
2028	Summer	OXY_PALINDM3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.84297
2028	Summer	LIVSTNRIDGE3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.86291
2028	Summer	MEDANOS 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.83464
2028	Summer	SAGE_BRUSH 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.83477

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	CHEVRON_DAGG	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.82401
2028	Summer	CHEVRON_DAGG	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.82214
2028	Summer	INTREPDW_TP3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85381
2028	Summer	WIPP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.87348
2028	Summer	SAND_DUNES 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.89076
2028	Summer	IMC_#1_TP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85446
2028	Summer	XTO_DI9_TP 3	115	POTASH_JCT 3 - INTREPDW_TP3 - 1	1.05	0.9	0.85689
2028	Summer	OXY_PALINDM3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.84762
2028	Summer	LIVSTNRIDGE3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.86767
2028	Summer	MEDANOS 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.83921
2028	Summer	SAGE_BRUSH 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.8382
2028	Summer	CHEVRON_DAGG	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.82798
2028	Summer	CHEVRON_DAGG	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.82612
2028	Summer	WIPP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.87776
2028	Summer	SAND_DUNES 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.89396
2028	Summer	IMC_#1_TP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.86078
2028	Summer	XTO_DI9_TP 3	115	INTREPDW_TP3 - IMC_#1_TP 3 - 1	1.05	0.9	0.86252
2028	Summer	MEDANOS 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89131
2028	Summer	SAGE_BRUSH 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.88106
2028	Summer	CHEVRON_DAGG	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.87587
2028	Summer	CHEVRON_DAGG	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.87411
2028	Summer	PHANTOM 3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89917

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	PHANTOM 7	345	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.85993
2028	Summer	BOPCO_PKRLK3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89886
2028	Summer	CHINA_DRAW 7	345	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.88069
2028	Summer	WOLFCAMP_TP3	115	PHANTOM 7 - RDRUNNER 7 - 1	1.05	0.9	0.89779
2028	Summer	PHANTOM 7	345	PHANTOM 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.89372
2028	Summer	SAGE_BRUSH 3	115	SAND_DUNES 3 - RED_BLUFF 3 - 1	1.05	0.9	0.89026
2028	Summer	CHEVRON_DAGG	115	SAND_DUNES 3 - RED_BLUFF 3 - 1	1.05	0.9	0.88586
2028	Summer	CHEVRON_DAGG	115	SAND_DUNES 3 - RED_BLUFF 3 - 1	1.05	0.9	0.88412
2028	Summer	MEDANOS 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.8964
2028	Summer	SAGE_BRUSH 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.88267
2028	Summer	CHEVRON_DAGG	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.87867
2028	Summer	CHEVRON_DAGG	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.87692
2028	Summer	OXY_PALINDM3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89968
2028	Summer	MEDANOS 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89056
2028	Summer	SAGE_BRUSH 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.87823
2028	Summer	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.87357
2028	Summer	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.87181
2028	Summer	SAGE_BRUSH 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.87602
2028	Summer	CHEVRON_DAGG	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.87834
2028	Summer	CHEVRON_DAGG	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.87659
2028	Summer	ZAMA 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.84343
2028	Summer	CUSTERMTN 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.85788
2028	Summer	WHITTEN 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.873
2028	Summer	S_JAL 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88624
2028	Summer	DOLLARHIDE 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88593
2028	Summer	OXY_PALINDM3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.85754
2028	Summer	LIVSTNRIDGE3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.87792
2028	Summer	MEDANOS 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.8489
2028	Summer	SAGE_BRUSH 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.84519
2028	Summer	CHEVRON_DAGG	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.8362
2028	Summer	CHEVRON_DAGG	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.83436
2028	Summer	WIPP 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.88692
2028	Summer	XTO_DI9_TP 3	115	IMC_#1_TP 3 - DI8_TP - 1	1.05	0.9	0.8749
2028	Summer	OXY_PALINDM3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.85737
2028	Summer	LIVSTNRIDGE3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.87774
2028	Summer	MEDANOS 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.84874

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	SAGE_BRUSH 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.84508
2028	Summer	CHEVRON_DAGG	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.83607
2028	Summer	CHEVRON_DAGG	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.83423
2028	Summer	WIPP 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.88676
2028	Summer	XTO_DI9_TP 3	115	XTO_DI9_TP 3 - DI8_TP - 1	1.05	0.9	0.87467
2028	Summer	SAGE_BRUSH 3	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.89068
2028	Summer	CHEVRON_DAGG	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.88679
2028	Summer	CHEVRON_DAGG	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.88505
2028	Summer	PHANTOM 7	345	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.88847
2028	Summer	CHINA_DRAW 7	345	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.89482
2028	Summer	SAGE_BRUSH 3	115	ZAMA 3 - CUSTERMTN 3 - 1	1.05	0.9	0.88881
2028	Summer	CHEVRON_DAGG	115	ZAMA 3 - CUSTERMTN 3 - 1	1.05	0.9	0.8887
2028	Summer	CHEVRON_DAGG	115	ZAMA 3 - CUSTERMTN 3 - 1	1.05	0.9	0.88696
2028	Summer	MIDSPRON_TP3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.89783
2028	Summer	CHEVRON_DAGG	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.89344
2028	Summer	CHEVRON_DAGG	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.89172
2028	Summer	LYNCH_TP 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.87651
2028	Summer	PEARLE 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.87352
2028	Summer	SAGE_BRUSH 3	115	TEAGUE 3 - S_JAL 3 - 1	1.05	0.9	0.89186
2028	Summer	CHEVRON_DAGG	115	TEAGUE 3 - S_JAL 3 - 1	1.05	0.9	0.89108
2028	Summer	CHEVRON_DAGG	115	TEAGUE 3 - S_JAL 3 - 1	1.05	0.9	0.88935
2028	Summer	SAGE_BRUSH 3	115	TEAGUE 3 - CARDINAL 3 - 1	1.05	0.9	0.89307
2028	Summer	CHEVRON_DAGG	115	TEAGUE 3 - CARDINAL 3 - 1	1.05	0.9	0.89204
2028	Summer	CHEVRON_DAGG	115	TEAGUE 3 - CARDINAL 3 - 1	1.05	0.9	0.89031
2028	Summer	SAGE_BRUSH 3	115	WHITTEN 3 - S_JAL 3 - 1	1.05	0.9	0.89202
2028	Summer	CHEVRON_DAGG	115	WHITTEN 3 - S_JAL 3 - 1	1.05	0.9	0.89126
2028	Summer	CHEVRON_DAGG	115	WHITTEN 3 - S_JAL 3 - 1	1.05	0.9	0.88953
2028	Summer	SAGE_BRUSH 3	115	DRINKARD 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89428
2028	Summer	CHEVRON_DAGG	115	DRINKARD 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89309
2028	Summer	CHEVRON_DAGG	115	DRINKARD 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89136
2028	Summer	MEDANOS 3	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89431
2028	Summer	SAGE_BRUSH 3	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.86482
2028	Summer	CHEVRON_DAGG	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.86785

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2028	Summer	CHEVRON_DAGG	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.86607
2028	Summer	CARDINAL 3	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89581
2028	Summer	SAGE_BRUSH 3	115	ANDREWS 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89341
2028	Summer	CHEVRON_DAGG	115	ANDREWS 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89222
2028	Summer	CHEVRON_DAGG	115	ANDREWS 3 - NA_ENRICH 3 - 1	1.05	0.9	0.89049
2028	Summer	OXY_PALINDM3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89881
2028	Summer	MEDANOS 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.887
2028	Summer	SAGE_BRUSH 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.85202
2028	Summer	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.85706
2028	Summer	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.85526
2028	Summer	TEAGUE 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89182
2028	Summer	CARDINAL 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.87785
2028	Summer	TARGA_CLARK3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.87626
2028	Summer	SAGE_BRUSH 3	115	HOBBS_INT 6 - HOBBS_INT 7 - 1	1.05	0.9	0.89401
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 6 - HOBBS_INT 7 - 1	1.05	0.9	0.89188
2028	Summer	CHEVRON_DAGG	115	HOBBS_INT 6 - HOBBS_INT 7 - 1	1.05	0.9	0.89015
2028	Summer	SAGE_BRUSH 3	115	POTASH_JCT 3 - POTASH_JCT 6 - 1	1.05	0.9	0.89354
2028	Summer	CHEVRON_DAGG	115	POTASH_JCT 3 - POTASH_JCT 6 - 1	1.05	0.9	0.89076
2028	Summer	CHEVRON_DAGG	115	POTASH_JCT 3 - POTASH_JCT 6 - 1	1.05	0.9	0.88903
2028	Summer	OXY_PALINDM3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89313
2028	Summer	MEDANOS 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88459
2028	Summer	SAGE_BRUSH 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87656
2028	Summer	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87041
2028	Summer	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.86864
2028	Summer	SAGE_BRUSH 3	115	PHANTOM 3 - PHANTOM 7 - 1	1.05	0.9	0.89555
2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 1	1.05	0.9	0.89227

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2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 1	1.05	0.9	0.89054
2028	Summer	SAGE_BRUSH 3	115	PHANTOM 3 - PHANTOM 7 - 2	1.05	0.9	0.89555
2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 2	1.05	0.9	0.89227
2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 2	1.05	0.9	0.89054
2028	Summer	SAGE_BRUSH 3	115	PHANTOM 3 - PHANTOM 7 - 3	1.05	0.9	0.89555
2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 3	1.05	0.9	0.89227
2028	Summer	CHEVRON_DAGG	115	PHANTOM 3 - PHANTOM 7 - 3	1.05	0.9	0.89054
2028	Summer	SAGE_BRUSH 3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89583
2028	Summer	CHEVRON_DAGG	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89256
2028	Summer	CHEVRON_DAGG	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89084
2028	Summer	NORTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89773
2028	Summer	SOUTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89968
2028	Summer	AGAVE_PDURO3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.88939
2028	Summer	HOPI_SUB 3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89265
2028	Summer	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.56421
2028	Summer	SAGE_BRUSH 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.65811
2028	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.60605
2028	Summer	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.60362
2028	Summer	TEAGUE 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.89522
2028	Summer	CARDINAL 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.87702
2028	Summer	OXY_PALINDM3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.86317
2028	Summer	LIVSTNRIDGE3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.88202
2028	Summer	MEDANOS 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.85542
2028	Summer	SAGE_BRUSH 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.8558
2028	Summer	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.84604
2028	Summer	CHEVRON_DAGG	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.84422
2028	Summer	WIPP 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.87354
2028	Summer	PHANTOM 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.78356
2028	Summer	PHANTOM 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.75859
2028	Summer	SAND_DUNES 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.85186
2028	Summer	RED_BLUFF 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.83318

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Summer	BOPCO_PKRLK3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.78402
2028	Summer	TARGA HV	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.89872
2028	Summer	NORTH_LOVNG3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.8205
2028	Summer	SENDERO +3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81938
2028	Summer	N_LOVING 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.74495
2028	Summer	SOUTH_LOVNG3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80831
2028	Summer	BLACKRIVER 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81909
2028	Summer	MALAGABEND 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.79293
2028	Summer	AGAVE_PDURO3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.81134
2028	Summer	AZTEC 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.82782
2028	Summer	CHINA_DRAW 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.85967
2028	Summer	CHINA_DRAW 7	345	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.7496
2028	Summer	HOPI_SUB 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.83206
2028	Summer	WOOD_DRAW 3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.80935
2028	Summer	WOLFCAMP_TP3	115	KIOWA 7 - N_LOVING 7 - 1	1.05	0.9	0.78609
2028	Winter	DS-#15&#19+2	69	BASE CASE	1.05	0.95	0.93572
2028	Winter	DS-#15&#19 2	69	BASE CASE	1.05	0.95	0.9313
2028	Winter	PLSNT_HILL 6	230	BASE CASE	1.05	0.95	0.94672
2028	Winter	DS-#13 2	69	BASE CASE	1.05	0.95	0.94093
2028	Winter	OASIS 6	230	BASE CASE	1.05	0.95	0.93867
2028	Winter	ROOSEVELT 6	230	BASE CASE	1.05	0.95	0.94671
2028	Winter	OXY_PALINDM3	115	BASE CASE	1.05	0.95	0.94537
2028	Winter	MEDANOS 3	115	BASE CASE	1.05	0.95	0.93934
2028	Winter	SAGE_BRUSH 3	115	BASE CASE	1.05	0.95	0.93398
2028	Winter	MIDSPRON_TP3	115	BASE CASE	1.05	0.95	0.94482
2028	Winter	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.93091
2028	Winter	CHEVRON_DAGG	115	BASE CASE	1.05	0.95	0.92984
2028	Winter	PHANTOM 3	115	BASE CASE	1.05	0.95	0.93968
2028	Winter	PHANTOM 7	345	BASE CASE	1.05	0.95	0.94971
2028	Winter	RED_BLUFF 3	115	BASE CASE	1.05	0.95	0.9458
2028	Winter	BOPCO_PKRLK3	115	BASE CASE	1.05	0.95	0.93955
2028	Winter	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.90201
2028	Winter	TERCIO 3	115	BASE CASE	1.05	0.95	0.92849
2028	Winter	PECOS 6	230	BASE CASE	1.05	0.95	0.94808
2028	Winter	WOLFCAMP_TP3	115	BASE CASE	1.05	0.95	0.93915
2028	Winter	ENRON_TP 3	115	BASE CASE	1.05	0.95	0.9469
2028	Winter	LEA_NATIONL3	115	BASE CASE	1.05	0.95	0.94715
2028	Winter	MALJMAR1&2 3	115	BASE CASE	1.05	0.95	0.9431
2028	Winter	PLSNT_HILL 6	230	GEN527902 1	1.05	0.9	0.88174
2028	Winter	OASIS 6	230	GEN527902 1	1.05	0.9	0.8845
2028	Winter	ROOSEVELT 6	230	GEN527902 1	1.05	0.9	0.89
2028	Winter	BATTLE_AXE 3	115	SWITCHED_SHUNT-528040	1.05	0.9	0.86629

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2028	Winter	PLSNT_HILL 6	230	RSVLT_CC_W 7 - RSVLT_CC_E 7 - 1	1.05	0.9	0.89695
2028	Winter	OASIS 6	230	RSVLT_CC_W 7 - RSVLT_CC_E 7 - 1	1.05	0.9	0.89637
2028	Winter	PLSNT_HILL 6	230	CROSSROADS 7 - EDDY_CNTY 7 - 1	1.05	0.9	0.88087
2028	Winter	OASIS 6	230	CROSSROADS 7 - EDDY_CNTY 7 - 1	1.05	0.9	0.88195
2028	Winter	ROOSEVELT 6	230	CROSSROADS 7 - EDDY_CNTY 7 - 1	1.05	0.9	0.88986
2028	Winter	PLSNT_HILL 6	230	CROSSROADS 7 - HOBBS_INT 7 - BA	1.05	0.9	0.89703
2028	Winter	OASIS 6	230	CROSSROADS 7 - HOBBS_INT 7 - BA	1.05	0.9	0.89539
2028	Winter	PLSNT_HILL 6	230	CROSSROADS 7 - HOBBS_INT 7 - LX	1.05	0.9	0.89703
2028	Winter	OASIS 6	230	CROSSROADS 7 - HOBBS_INT 7 - LX	1.05	0.9	0.89539
2028	Winter	OXY_PALINDM3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.86334
2028	Winter	MEDANOS 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.8661
2028	Winter	SAGE_BRUSH 3	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.8867
2028	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.8731
2028	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - LIVSTNRIDGE3 - 1	1.05	0.9	0.87196
2028	Winter	MEDANOS 3	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.89863
2028	Winter	CHEVRON_DAGG	115	OXY_PALINDM3 - MEDANOS 3 - 1	1.05	0.9	0.89929
2028	Winter	POTASH_JCT 6	230	CUNNIGHM_N 6 - POTASH_JCT 6 - 1	1.05	0.9	0.89718
2028	Winter	MEDANOS 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89286
2028	Winter	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.83626
2028	Winter	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.85198
2028	Winter	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.85081
2028	Winter	RED_BLUFF 3	115	RED_BLUFF 3 - TARGA HV - 1	1.05	0.9	0.89797
2028	Winter	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89948
2028	Winter	CHEVRON_DAGG	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89838

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Winter	PHANTOM 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89963
2028	Winter	SAND_DUNES 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89854
2028	Winter	RED_BLUFF 3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.8852
2028	Winter	BOPCO_PKRLK3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89909
2028	Winter	TARGA HV	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.88028
2028	Winter	WOLFCAMP_TP3	115	RDRUNNER 3 - TARGA HV - 1	1.05	0.9	0.89705
2028	Winter	ZAMA 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.88699
2028	Winter	SOUTH_LOVNG3	115	NORTH_LOVNG3 - SOUTH_LOVNG3 - 1	1.05	0.9	0.86706
2028	Winter	MALAGABEND 3	115	NORTH_LOVNG3 - SOUTH_LOVNG3 - 1	1.05	0.9	0.88209
2028	Winter	PHANTOM 3	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.8961
2028	Winter	BOPCO_PKRLK3	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.89618
2028	Winter	WOLFCAMP_TP3	115	N_LOVING 7 - CHINA_DRAW 7 - 1	1.05	0.9	0.89667
2028	Winter	PEARLE 3	115	MADDOX 3 - PEARLE 3 - 1	1.05	0.9	0.89798
2028	Winter	SAGE_BRUSH 3	115	CARDINAL 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89936
2028	Winter	SAGE_BRUSH 3	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.88901
2028	Winter	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89472
2028	Winter	CHEVRON_DAGG	115	NA_ENRICH 3 - TARGA_CLARK3 - 1	1.05	0.9	0.89361
2028	Winter	PLSNT_HILL 6	230	HOBBS_INT 3 - HOBBS_PLT2 1 - 1	1.05	0.9	0.88186
2028	Winter	OASIS 6	230	HOBBS_INT 3 - HOBBS_PLT2 1 - 1	1.05	0.9	0.88463
2028	Winter	ROOSEVELT 6	230	HOBBS_INT 3 - HOBBS_PLT2 1 - 1	1.05	0.9	0.89012
2028	Winter	OXY_PALINDM3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.8856
2028	Winter	PCA 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88587
2028	Winter	MEDANOS 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88013
2028	Winter	SAGE_BRUSH 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88413
2028	Winter	POTASH_JCT 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89378
2028	Winter	POTASH_JCT 6	230	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87115
2028	Winter	KIOWA 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89214
2028	Winter	MIDSPRON_TP3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87646
2028	Winter	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87687
2028	Winter	CHEVRON_DAGG	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87574
2028	Winter	INTREPDW_TP3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89358
2028	Winter	IMC_#1_TP 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89364

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Winter	XTO_DI9_TP 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89532
2028	Winter	PECOS 6	230	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89129
2028	Winter	ENRON_TP 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87872
2028	Winter	LYNCH_TP 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89146
2028	Winter	QUAHADA 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88303
2028	Winter	XTO_BIGEDDY3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87748
2028	Winter	LEA_NATIONL3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.87887
2028	Winter	MALJMAR1&2 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.8713
2028	Winter	NORTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.88394
2028	Winter	SENDERO +3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.8896
2028	Winter	SOUTH_LOVNG3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.88159
2028	Winter	BLACKRIVER 3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.88863
2028	Winter	MALAGABEND 3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89018
2028	Winter	AGAVE_PDURO3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.87546
2028	Winter	HOPI_SUB 3	115	NORTH_LOVNG3 - N_LOVING 7 - 1	1.05	0.9	0.89272
2028	Winter	PLSNT_HILL 6	230	GEN527882 1	1.05	0.9	0.8657
2028	Winter	OASIS 6	230	GEN527882 1	1.05	0.9	0.87019
2028	Winter	ROOSEVELT 6	230	GEN527882 1	1.05	0.9	0.87614
2028	Winter	PLSNT_HILL 6	230	GEN527901 1	1.05	0.9	0.88786
2028	Winter	OASIS 6	230	GEN527901 1	1.05	0.9	0.88915
2028	Winter	ROOSEVELT 6	230	GEN527901 1	1.05	0.9	0.89462
2028	Winter	PLSNT_HILL 6	230	SN_JUAN_SS 6 - CHAVES_CNTY6 - 1	1.05	0.9	0.88496
2028	Winter	OASIS 6	230	SN_JUAN_SS 6 - CHAVES_CNTY6 - 1	1.05	0.9	0.8833
2028	Winter	ROOSEVELT 6	230	SN_JUAN_SS 6 - CHAVES_CNTY6 - 1	1.05	0.9	0.89221
2028	Winter	PLSNT_HILL 6	230	SUNDOWN 6 - AMOCO_SS 6 - 1	1.05	0.9	0.88802
2028	Winter	OASIS 6	230	SUNDOWN 6 - AMOCO_SS 6 - 1	1.05	0.9	0.88892
2028	Winter	ROOSEVELT 6	230	SUNDOWN 6 - AMOCO_SS 6 - 1	1.05	0.9	0.89475
2028	Winter	AMOCO_SS 6	230	SUNDOWN 6 - AMOCO_SS 6 - 1	1.05	0.9	0.89091
2028	Winter	PLSNT_HILL 6	230	SAGA_SMEAS 7 - SAGA_NCOL 7 - 1	1.05	0.9	0.89225

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2028	Winter	OASIS 6	230	SAGA_SMEAS 7 - SAGA_NCOL 7 - 1	1.05	0.9	0.89329
2028	Winter	ROOSEVELT 6	230	SAGA_SMEAS 7 - SAGA_NCOL 7 - 1	1.05	0.9	0.89811
2028	Winter	PLSNT_HILL 6	230	RSVLT_CC_E 7 - CROSSROADS 7 - 1	1.05	0.9	0.87639
2028	Winter	OASIS 6	230	RSVLT_CC_E 7 - CROSSROADS 7 - 1	1.05	0.9	0.8809
2028	Winter	ROOSEVELT 6	230	RSVLT_CC_E 7 - CROSSROADS 7 - 1	1.05	0.9	0.88606
2028	Winter	PLSNT_HILL 6	230	CUNNIGHM_S 6 - CUNINGHAM2 1 - 1	1.05	0.9	0.86778
2028	Winter	OASIS 6	230	CUNNIGHM_S 6 - CUNINGHAM2 1 - 1	1.05	0.9	0.87226
2028	Winter	ROOSEVELT 6	230	CUNNIGHM_S 6 - CUNINGHAM2 1 - 1	1.05	0.9	0.87838
2028	Winter	PLSNT_HILL 6	230	HOBBS_INT 3 - HOBBS_PLT1 1 - 1	1.05	0.9	0.88787
2028	Winter	OASIS 6	230	HOBBS_INT 3 - HOBBS_PLT1 1 - 1	1.05	0.9	0.88917
2028	Winter	ROOSEVELT 6	230	HOBBS_INT 3 - HOBBS_PLT1 1 - 1	1.05	0.9	0.89463
2033	Light Load	POTASH_JCT 6	230	BASE CASE	1.05	0.95	0.9452
2033	Light Load	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.94133
2033	Light Load	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.87022
2033	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.88775
2033	Light Load	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.88712
2033	Summer	XTO_BIGEDDY3	115	PCA 3 - XTO_BIGEDDY3 - 1	1.05	0.9	0.8882
2033	Summer	MALJMAR1&2 3	115	PCA 3 - XTO_BIGEDDY3 - 1	1.05	0.9	0.89159
2033	Summer	SAGE_BRUSH 3	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.87646
2033	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89387
2033	Summer	CHEVRON_DAGG	115	SAGE_BRUSH 3 - CARDINAL 3 - 1	1.05	0.9	0.89325
2033	Summer	ZAMA 3	115	RDRUNNER 3 - ZAMA 3 - 1	1.05	0.9	0.89203
2033	Summer	POTASH_JCT 6	230	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88917
2033	Summer	MIDSPRON_TP3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89489
2033	Summer	ENRON_TP 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89832
2033	Summer	XTO_BIGEDDY3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89856
2033	Summer	LEA_NATIONL3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.89842

Year	Season	Facility Name	Facility Voltage (kV)	Contingency Name	Voltage Maximum (pu)	Voltage Minimum (pu)	Bus Voltage (pu)
2033	Summer	MALJMAR1&2 3	115	KIOWA 7 - KIOWA 3 - 1	1.05	0.9	0.88873
2033	Summer	BATTLE_AXE 3	115	PHANTOM 9 - PHANTOM 7 - 1	1.05	0.9	0.88329
2033	Winter	BATTLE_AXE 3	115	BASE CASE	1.05	0.95	0.93005
2033	Winter	TERCIO 3	115	BASE CASE	1.05	0.95	0.94809
2033	Winter	BATTLE_AXE 3	115	SWITCHED_SHUNT-528040	1.05	0.9	0.89569

Table 3-2: Potential Voltage Violations

SHORT CIRCUIT

SPP performed short circuit analysis for the 2028 Summer Peak with the new load additions. The analysis identified the currents as listed in Table 3-3.

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	OASIS 6230.00	7,150
28S	Max Fault	Three Phase	SN_JUAN_SS 6230.00	3,962
28S	Max Fault	Three Phase	SN_JUAN_WND6230.00	3,735
28S	Max Fault	Three Phase	TOLK 7345.00	12,245
28S	Max Fault	Three Phase	RSWL_SLRCOL3115.00	6,362
28S	Max Fault	Three Phase	CHVS_SLRCOL3115.00	6,228
28S	Max Fault	Three Phase	CHAVES_TR1 113.200	12,642
28S	Max Fault	Three Phase	CHAVES_TR2 113.200	14,724
28S	Max Fault	Three Phase	CHAVES_CNTY3115.00	6,432
28S	Max Fault	Three Phase	CHAVES_CNTY6230.00	4,147
28S	Max Fault	Three Phase	URTON 3115.00	5,460
28S	Max Fault	Three Phase	PRICE 3115.00	4,555
28S	Max Fault	Three Phase	PRICE_TAP 3115.00	5,085
28S	Max Fault	Three Phase	CV-PINE 269.000	2,406
28S	Max Fault	Three Phase	ROSWELL_CTY3115.00	5,226
28S	Max Fault	Three Phase	RIACBRSH_TP3115.00	5,200
28S	Max Fault	Three Phase	SW4J795_E 3115.00	5,354
28S	Max Fault	Three Phase	SW4J795_W 3115.00	5,421
28S	Max Fault	Three Phase	BRASHER 3115.00	4,990
28S	Max Fault	Three Phase	CAPITAN 3115.00	4,431
28S	Max Fault	Three Phase	SAMSON 3115.00	5,170
28S	Max Fault	Three Phase	SIERRA 3115.00	4,635
28S	Max Fault	Three Phase	ROSWELL_TR1113.200	3,250
28S	Max Fault	Three Phase	ROSWELL_TR2113.200	3,241
28S	Max Fault	Three Phase	ROSWLL_INT 269.000	4,010
28S	Max Fault	Three Phase	ROSWLL_INT 3115.00	5,426
28S	Max Fault	Three Phase	SW_4702 269.000	3,584
28S	Max Fault	Three Phase	CV-ORCHARD 269.000	2,145
28S	Max Fault	Three Phase	TWEEDY 3115.00	5,055
28S	Max Fault	Three Phase	SAGA_SCOL 7345.00	12,362
28S	Max Fault	Three Phase	RSVLT_CC_E 7345.00	12,110
28S	Max Fault	Three Phase	CROSSROADS 7345.00	14,532

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	CROSSROADTR113.200	3,300
28S	Max Fault	Three Phase	CROSSROADS 9765.00	6,377
28S	Max Fault	Three Phase	SMITH 269.000	3,954
28S	Max Fault	Three Phase	EGCREEK_TR1113.200	4,645
28S	Max Fault	Three Phase	EAGLE_CREEK269.000	3,959
28S	Max Fault	Three Phase	EAGLE_CREEK3115.00	7,698
28S	Max Fault	Three Phase	EGCREEK_TR2113.200	4,645
28S	Max Fault	Three Phase	CHASE 69.000	3,954
28S	Max Fault	Three Phase	NAVAJO_2TP 3115.00	7,324
28S	Max Fault	Three Phase	NAVAJO_2 3115.00	7,234
28S	Max Fault	Three Phase	NAVAJO_3 3115.00	7,280
28S	Max Fault	Three Phase	NAVAJO_1 269.000	3,551
28S	Max Fault	Three Phase	NAVAJO_5TP 3115.00	7,280
28S	Max Fault	Three Phase	NAVAJO_4 3115.00	7,262
28S	Max Fault	Three Phase	NAVAJO_5 3115.00	7,264
28S	Max Fault	Three Phase	ARTESIA_TWN269.000	3,461
28S	Max Fault	Three Phase	ARTSA_CC_TP3115.00	7,047
28S	Max Fault	Three Phase	ARTESIA_CC 3115.00	5,638
28S	Max Fault	Three Phase	ATOKA_TR1 113.200	3,733
28S	Max Fault	Three Phase	ATOKA 269.000	2,394
28S	Max Fault	Three Phase	ATOKA 3115.00	7,556
28S	Max Fault	Three Phase	EDDY_SVC 18.5000	47,766
28S	Max Fault	Three Phase	EDDY_STH 3115.00	12,736
28S	Max Fault	Three Phase	EDDY_TR3 113.200	15,846
28S	Max Fault	Three Phase	EDDY_TR 113.200	33,354
28S	Max Fault	Three Phase	EDDY_TR2 113.200	17,034
28S	Max Fault	Three Phase	EDDY_NTH 3115.00	12,736
28S	Max Fault	Three Phase	EDDY_NORTH 6230.00	10,381
28S	Max Fault	Three Phase	EDDY_CNTY 7345.00	8,737
28S	Max Fault	Three Phase	PERCY 115.00	4,496
28S	Max Fault	Three Phase	CV-8_MILE 267.000	1,836
28S	Max Fault	Three Phase	CV-8_MILE 3115.00	5,631
28S	Max Fault	Three Phase	CV-ABO 267.000	1,624
28S	Max Fault	Three Phase	CV-KEWAN_TP3115.00	2,991
28S	Max Fault	Three Phase	CV-KEWANEE 3115.00	2,844
28S	Max Fault	Three Phase	CV-HENSH_TP3115.00	2,798
28S	Max Fault	Three Phase	CV-DAYTON +3115.00	7,457
28S	Max Fault	Three Phase	CV-TURKYTRK3115.00	3,537
28S	Max Fault	Three Phase	CUNNHM_TR1 113.200	79,025
28S	Max Fault	Three Phase	CUNNINHAM 3115.00	33,957
28S	Max Fault	Three Phase	CUNNIGHM_N 6230.00	19,929
28S	Max Fault	Three Phase	CUNNIGHM_S 6230.00	19,929
28S	Max Fault	Three Phase	CUNINGHAM2 120.000	11,022
28S	Max Fault	Three Phase	CUNINGHAM3 113.800	83,169
28S	Max Fault	Three Phase	HOBBS_INT 6230.00	21,860
28S	Max Fault	Three Phase	HOBBS_INT 7345.00	15,043
28S	Max Fault	Three Phase	POTASH_JCT 3115.00	21,758

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	POTASH_JCT 6230.00	8,296
28S	Max Fault	Three Phase	KIOWA_TR1 113.200	29,710
28S	Max Fault	Three Phase	KIOWA 7345.00	12,596
28S	Max Fault	Three Phase	KIOWA 3115.00	21,659
28S	Max Fault	Three Phase	MAGNUM 3115.00	9,186
28S	Max Fault	Three Phase	CV-DAGGR&IH269.000	1,651
28S	Max Fault	Three Phase	RDRUNNER 7345.00	12,209
28S	Max Fault	Three Phase	CV-AZMESA 3115.00	7,961
28S	Max Fault	Three Phase	CV-WALTCYN 3115.00	4,722
28S	Max Fault	Three Phase	7-RIVER_TR1113.200	18,573
28S	Max Fault	Three Phase	7-RIVER_TR2113.200	2,911
28S	Max Fault	Three Phase	7-RIVERS 269.000	2,426
28S	Max Fault	Three Phase	7-RIVERS 3115.00	8,931
28S	Max Fault	Three Phase	7-RIVERS 6230.00	6,928
28S	Max Fault	Three Phase	CV-LAKEWOOD3115.00	6,786
28S	Max Fault	Three Phase	CV-IRISHHL+3115.00	6,793
28S	Max Fault	Three Phase	OCOTILLO 3115.00	6,610
28S	Max Fault	Three Phase	SISKO_TP 3115.00	7,667
28S	Max Fault	Three Phase	CAVEMAN 3115.00	7,427
28S	Max Fault	Three Phase	CAVEMAN_TP 3115.00	8,910
28S	Max Fault	Three Phase	N_CANAL 3115.00	9,580
28S	Max Fault	Three Phase	FIESTA 3115.00	10,964
28S	Max Fault	Three Phase	CRLSBAD_TR1113.200	4,236
28S	Max Fault	Three Phase	CRLSBAD_TR2113.200	23,600
28S	Max Fault	Three Phase	CARLSBAD 269.000	4,574
28S	Max Fault	Three Phase	CARLSBAD 3115.00	12,868
28S	Max Fault	Three Phase	PECOS_TR1 113.200	20,505
28S	Max Fault	Three Phase	PECOS 3115.00	13,608
28S	Max Fault	Three Phase	PECOS 6230.00	7,346
28S	Max Fault	Three Phase	NORTH_LOVNG3115.00	16,477
28S	Max Fault	Three Phase	N_LOVING 7345.00	10,477
28S	Max Fault	Three Phase	HOPI_SUB 112.470	13,948
28S	Max Fault	Three Phase	HOPI_SUB 3115.00	8,046
28S	Max Fault	Three Phase	LEANATIONAL6230.00	19,427
28S	Max Fault	Three Phase	LEANATNL_TR113.200	51,537
28S	Max Fault	Three Phase	LEA_NATIONL3115.00	10,224
28S	Max Fault	Three Phase	EPTNP-D6 230.00	10,381
28S	Max Fault	Three Phase	PCA_TR1 113.200	6,140
28S	Max Fault	Three Phase	PCA 269.000	8,566
28S	Max Fault	Three Phase	PCA 3115.00	16,279
28S	Max Fault	Three Phase	CV-SKELLY 3115.00	3,537
28S	Max Fault	Three Phase	CV-MALJAMAR3115.00	3,097
28S	Max Fault	Three Phase	CV-MLMAN_TP3115.00	7,111
28S	Max Fault	Three Phase	CV-MILLMAN 3115.00	5,708
28S	Max Fault	Three Phase	CV-LUSK 269.000	2,472
28S	Max Fault	Three Phase	CV-LUSK 3115.00	3,827
28S	Max Fault	Three Phase	CV-LUSK_TP 3115.00	4,736

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	POTASH_TR1 113.200	17,292
28S	Max Fault	Three Phase	POTASH_TR2 113.200	4,262
28S	Max Fault	Three Phase	POTASH_TR3 113.200	4,633
28S	Max Fault	Three Phase	POTASH_JCT 269.000	10,765
28S	Max Fault	Three Phase	DUVAL_#1 269.000	6,533
28S	Max Fault	Three Phase	NMPOTASH 269.000	2,677
28S	Max Fault	Three Phase	KERMAC 269.000	3,139
28S	Max Fault	Three Phase	INTREPDW_TP3115.00	16,878
28S	Max Fault	Three Phase	INTREPIDWST3115.00	13,749
28S	Max Fault	Three Phase	MISSCHEM#2 269.000	7,820
28S	Max Fault	Three Phase	IMC_#2 269.000	4,670
28S	Max Fault	Three Phase	IMC_#1_TP 3115.00	11,155
28S	Max Fault	Three Phase	IMC_#1 3115.00	9,793
28S	Max Fault	Three Phase	UNITEDSALT 269.000	4,463
28S	Max Fault	Three Phase	XTO_DI8_TP 3115.00	9,604
28S	Max Fault	Three Phase	NATPOT_TP 269.000	10,712
28S	Max Fault	Three Phase	S_LOVING_TP269.000	2,879
28S	Max Fault	Three Phase	ENRON_TP 3115.00	10,508
28S	Max Fault	Three Phase	BUCKEYE_TP 3115.00	16,118
28S	Max Fault	Three Phase	CUNNQUAHTP 115.00	18,637
28S	Max Fault	Three Phase	QUAHADA 3115.00	35,550
28S	Max Fault	Three Phase	XTO_BIGEDDY3115.00	16,157
28S	Max Fault	Three Phase	ZIA 3115.00	20,551
28S	Max Fault	Three Phase	DCP_ZIA TP 3115.00	24,756
28S	Max Fault	Three Phase	DCP_ZIA 3115.00	21,784
28S	Max Fault	Three Phase	OXY_PALINDM3115.00	7,086
28S	Max Fault	Three Phase	LIVSTNRIDGE3115.00	8,924
28S	Max Fault	Three Phase	MEDANOS 3115.00	6,526
28S	Max Fault	Three Phase	SAGE_BRUSH 3115.00	7,075
28S	Max Fault	Three Phase	WIPP 3115.00	8,418
28S	Max Fault	Three Phase	SAND_DUNES 3115.00	8,624
28S	Max Fault	Three Phase	RED_BLUFF 3115.00	13,057
28S	Max Fault	Three Phase	CHVRN_DUBRV3115.00	9,612
28S	Max Fault	Three Phase	BOPCO_PKRLK3115.00	23,856
28S	Max Fault	Three Phase	RDRNNER_TR1113.200	25,015
28S	Max Fault	Three Phase	RR_SVC_HV 3115.00	16,820
28S	Max Fault	Three Phase	RDRUNNER 3115.00	16,820
28S	Max Fault	Three Phase	TERCIO 3115.00	4,765
28S	Max Fault	Three Phase	XTO_DI9_TP 3115.00	9,219
28S	Max Fault	Three Phase	XTO_DI9 3115.00	8,289
28S	Max Fault	Three Phase	XTO_DI8 3115.00	8,602
28S	Max Fault	Three Phase	AGAVE_RHILL3115.00	14,736
28S	Max Fault	Three Phase	AGAVE_RHIL23115.00	13,704
28S	Max Fault	Three Phase	ZAMA 3115.00	14,132
28S	Max Fault	Three Phase	CUSTERMTN 3115.00	9,555
28S	Max Fault	Three Phase	PONDEROSA 3115.00	4,506
28S	Max Fault	Three Phase	TEAGUE 3115.00	6,657

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	WHITTEN 3115.00	8,690
28S	Max Fault	Three Phase	CARDINAL 3115.00	8,278
28S	Max Fault	Three Phase	TARGA_CLARK3115.00	8,616
28S	Max Fault	Three Phase	PRINGLE 6230.00	4,185
28S	Max Fault	Three Phase	MOORE_CNTY 6230.00	6,854
28S	Max Fault	Three Phase	MCDWL_CRKTR113.200	15,208
28S	Max Fault	Three Phase	MCDWL_CREEK3115.00	9,814
28S	Max Fault	Three Phase	MCDWL_CREEK6230.00	8,796
28S	Max Fault	Three Phase	EXELL 3115.00	6,248
28S	Max Fault	Three Phase	FOUR WAY 3115.00	6,657
28S	Max Fault	Three Phase	EXELL_TP 3115.00	7,708
28S	Max Fault	Three Phase	FAIN 3115.00	8,406
28S	Max Fault	Three Phase	BLKHAWK_W 3115.00	11,644
28S	Max Fault	Three Phase	RIVERVIEW 3115.00	12,773
28S	Max Fault	Three Phase	CRMWA_#3 3115.00	6,304
28S	Max Fault	Three Phase	CRMWA_#4 3115.00	9,318
28S	Max Fault	Three Phase	CAMX/AGR TP3115.00	13,279
28S	Max Fault	Three Phase	FRITCH 3115.00	6,790
28S	Max Fault	Three Phase	MEREDITH 3115.00	7,494
28S	Max Fault	Three Phase	HUTCH_TR1N 113.200	22,864
28S	Max Fault	Three Phase	HUTCH_TR2S 113.200	23,590
28S	Max Fault	Three Phase	HUTCH_TR3 113.200	5,525
28S	Max Fault	Three Phase	HUTCHISON 269.000	8,940
28S	Max Fault	Three Phase	HUTCH_N 3115.00	14,786
28S	Max Fault	Three Phase	HUTCH_S 3115.00	14,786
28S	Max Fault	Three Phase	HUTCHISON 6230.00	6,726
28S	Max Fault	Three Phase	GRAY_CNTY 3115.00	3,675
28S	Max Fault	Three Phase	KINGSMILL 3115.00	3,343
28S	Max Fault	Three Phase	WHITEDEER 3115.00	3,224
28S	Max Fault	Three Phase	WHITEDEER +3115.00	3,357
28S	Max Fault	Three Phase	BOWERS 3115.00	6,682
28S	Max Fault	Three Phase	GRAPEVN_TR1113.200	14,987
28S	Max Fault	Three Phase	GRAPEVINE 3115.00	7,707
28S	Max Fault	Three Phase	GRAPEVINE 6230.00	5,673
28S	Max Fault	Three Phase	WHEELER_TR1113.200	17,353
28S	Max Fault	Three Phase	WHEELER 3115.00	6,705
28S	Max Fault	Three Phase	WHEELER 6230.00	6,249
28S	Max Fault	Three Phase	STLN-DEMARC6230.00	7,821
28S	Max Fault	Three Phase	LANOCOL134.534.500	5,154
28S	Max Fault	Three Phase	LANOMPT134.534.500	8,418
28S	Max Fault	Three Phase	LLANO_WND_3 115.00	3,413
28S	Max Fault	Three Phase	MIDSTRM_TP 3115.00	3,799
28S	Max Fault	Three Phase	CHAN+TASCOS6230.00	4,242
28S	Max Fault	Three Phase	MARTIN 3115.00	7,239
28S	Max Fault	Three Phase	HIGHLAND_TP3115.00	10,833
28S	Max Fault	Three Phase	PANTEX_S 112.470	38,315
28S	Max Fault	Three Phase	PANTEX_N 3115.00	7,279

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	PANTEX_S 3115.00	7,774
28S	Max Fault	Three Phase	POTTER_CO 6230.00	19,755
28S	Max Fault	Three Phase	POTTER_CO 7345.00	12,798
28S	Max Fault	Three Phase	HARRNGTON1 124.000	67,814
28S	Max Fault	Three Phase	HARRNGTON2 124.000	69,619
28S	Max Fault	Three Phase	HARRNGTON3 124.000	67,946
28S	Max Fault	Three Phase	HARRNG_WST 6230.00	18,851
28S	Max Fault	Three Phase	HARRNG_MID 6230.00	18,851
28S	Max Fault	Three Phase	HARRNG_EST 6230.00	18,851
28S	Max Fault	Three Phase	ROLLHILLS 3115.00	17,740
28S	Max Fault	Three Phase	ROLHILLS_TR113.200	17,359
28S	Max Fault	Three Phase	CHERRY 3115.00	17,028
28S	Max Fault	Three Phase	ROLLHILLS 6230.00	16,488
28S	Max Fault	Three Phase	ASARCO 3115.00	23,471
28S	Max Fault	Three Phase	ASARCO_TP 3115.00	25,148
28S	Max Fault	Three Phase	NICHOLS_1 113.800	82,705
28S	Max Fault	Three Phase	NICHOLS_2 113.800	82,500
28S	Max Fault	Three Phase	NICHOLS_3 122.000	90,558
28S	Max Fault	Three Phase	NICHOLS_TR1113.200	23,976
28S	Max Fault	Three Phase	NICHOLS_TR2113.200	23,996
28S	Max Fault	Three Phase	NICHOLS 3115.00	26,655
28S	Max Fault	Three Phase	NICHOLS 6230.00	18,685
28S	Max Fault	Three Phase	HORNET 115.00	9,958
28S	Max Fault	Three Phase	WHITAKER 3115.00	19,687
28S	Max Fault	Three Phase	HIGHLAND 3115.00	5,840
28S	Max Fault	Three Phase	YARNELL_TP 3115.00	7,704
28S	Max Fault	Three Phase	CONWAY 3115.00	4,901
28S	Max Fault	Three Phase	KIRBY 3115.00	5,351
28S	Max Fault	Three Phase	NRTHWST_TP 269.000	3,178
28S	Max Fault	Three Phase	NRTHWST_TR1113.200	3,924
28S	Max Fault	Three Phase	NORTHWEST 269.000	4,011
28S	Max Fault	Three Phase	NORTHWEST 3115.00	10,508
28S	Max Fault	Three Phase	N_AMARLLSW 269.000	3,131
28S	Max Fault	Three Phase	BUSH 3115.00	6,746
28S	Max Fault	Three Phase	HASTINGS 3115.00	13,280
28S	Max Fault	Three Phase	CENTERPORT 3115.00	19,237
28S	Max Fault	Three Phase	ECHO 3115.00	15,042
28S	Max Fault	Three Phase	EPLANT_TR1 113.200	3,611
28S	Max Fault	Three Phase	EPLANT_TR2 113.200	3,615
28S	Max Fault	Three Phase	EPLANT_TR3 113.200	27,724
28S	Max Fault	Three Phase	EAST_PLANT 269.000	8,600
28S	Max Fault	Three Phase	EAST_PLANT 3115.00	20,327
28S	Max Fault	Three Phase	EAST_PLANT 6230.00	11,476
28S	Max Fault	Three Phase	PIERCE_TP 3115.00	17,229
28S	Max Fault	Three Phase	MANHATTAN 3115.00	15,755
28S	Max Fault	Three Phase	SUNSET 3115.00	10,883
28S	Max Fault	Three Phase	SONCY_TP 3115.00	11,480

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	BUSHLAND 6230.00	9,429
28S	Max Fault	Three Phase	RANDAL_TR2 113.200	17,494
28S	Max Fault	Three Phase	RANDAL_TR1 113.200	22,842
28S	Max Fault	Three Phase	RANDALL 3115.00	18,836
28S	Max Fault	Three Phase	RANDALL 6230.00	12,244
28S	Max Fault	Three Phase	FARMERS 3115.00	14,103
28S	Max Fault	Three Phase	ARROWHEAD 3115.00	12,680
28S	Max Fault	Three Phase	OWENSCORN_E3115.00	13,828
28S	Max Fault	Three Phase	AMA_SO_TR1 113.200	13,767
28S	Max Fault	Three Phase	AMA_SOUTH 3115.00	15,372
28S	Max Fault	Three Phase	AMA_SOUTH 6230.00	11,714
28S	Max Fault	Three Phase	SPRING_DRW 3115.00	6,174
28S	Max Fault	Three Phase	SWISHER_TR1113.200	15,632
28S	Max Fault	Three Phase	SWISHER 3115.00	11,498
28S	Max Fault	Three Phase	SWISHER 6230.00	10,159
28S	Max Fault	Three Phase	NEWHART 6230.00	10,584
28S	Max Fault	Three Phase	TUCO_INT 6230.00	22,397
28S	Max Fault	Three Phase	JERICHO3 115.00	3,964
28S	Max Fault	Three Phase	JERIC2WT 69.000	2,288
28S	Max Fault	Three Phase	JH2TERT 14.400	2,922
28S	Max Fault	Three Phase	MCCLELLAN 3115.00	5,116
28S	Max Fault	Three Phase	MCLEAN 3115.00	2,370
28S	Max Fault	Three Phase	CARSON_SUB 3115.00	6,480
28S	Max Fault	Three Phase	MAJESTC_WND3115.00	6,464
28S	Max Fault	Three Phase	PANTEXWND 134.500	8,108
28S	Max Fault	Three Phase	PANTEXWNDCC134.500	7,567
28S	Max Fault	Three Phase	DEXTER_TP 269.000	1,817
28S	Max Fault	Three Phase	CV-DEXTER 269.000	1,662
28S	Max Fault	Three Phase	DEXTER 269.000	1,531
28S	Max Fault	Three Phase	CV-YO_TP 269.000	1,668
28S	Max Fault	Three Phase	CV-YO 269.000	1,353
28S	Max Fault	Three Phase	CV-HAGERMAN269.000	1,543
28S	Max Fault	Three Phase	CV-LAKARTHR269.000	2,119
28S	Max Fault	Three Phase	CV-CTTNWD +269.000	2,737
28S	Max Fault	Three Phase	COTTONWOOD 269.000	2,477
28S	Max Fault	Three Phase	DFA-69 69.000	54,098
28S	Max Fault	Three Phase	DAA-69-B2 69.000	82,874
28S	Max Fault	Three Phase	DAA-69 69.000	82,874
28S	Max Fault	Three Phase	DAA-69-B1 69.000	82,874
28S	Max Fault	Three Phase	DAA-GEN-1-2 13.800	24,766
28S	Max Fault	Three Phase	DAA-GEN-3-4 13.800	24,711
28S	Max Fault	Three Phase	DAA-6T4-13-113.200	25,891
28S	Max Fault	Three Phase	DAA-6T4-13-213.200	25,834
28S	Max Fault	Three Phase	O.K.U.2-7 345.00	5,123
28S	Max Fault	Three Phase	BORDER 7345.00	7,380
28S	Max Fault	Three Phase	POTTER_CO 9765.00	5,677
28S	Max Fault	Three Phase	TOLK 6230.00	32,934

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	TOLK_TR 113.200	36,195
28S	Max Fault	Three Phase	TOLK_TR2 113.200	40,399
28S	Max Fault	Three Phase	NEEDMORE 6230.00	11,069
28S	Max Fault	Three Phase	TUCO_TR1 113.200	31,537
28S	Max Fault	Three Phase	TUCO_TR2 113.200	23,693
28S	Max Fault	Three Phase	TUCO_INT 7345.00	12,576
28S	Max Fault	Three Phase	ELK_CT1 345.00	12,474
28S	Max Fault	Three Phase	AMOCO_SS 6230.00	9,676
28S	Max Fault	Three Phase	YOAKUM_TR1 113.200	16,880
28S	Max Fault	Three Phase	YOAKUM_TR2 113.200	16,858
28S	Max Fault	Three Phase	YOAKUM 3115.00	18,759
28S	Max Fault	Three Phase	YOAKUM 6230.00	18,226
28S	Max Fault	Three Phase	YOAKUM 7345.00	9,702
28S	Max Fault	Three Phase	YOAKUM_TR3 113.200	37,418
28S	Max Fault	Three Phase	BRU_SUB 6230.00	14,105
28S	Max Fault	Three Phase	INKBASN_TR 113.200	14,796
28S	Max Fault	Three Phase	INK_BASIN 3115.00	12,930
28S	Max Fault	Three Phase	INK_BASIN 6230.00	11,161
28S	Max Fault	Three Phase	MUSTANG 6230.00	15,357
28S	Max Fault	Three Phase	SAGA_SDCOL 7345.00	12,362
28S	Max Fault	Three Phase	MILO_WIND 134.500	18,706
28S	Max Fault	Three Phase	RSVLT_CC_W 7345.00	10,287
28S	Max Fault	Three Phase	HOBBS_TR2 113.200	18,615
28S	Max Fault	Three Phase	HOBBS_TR1 113.200	27,021
28S	Max Fault	Three Phase	HOBBS_INT 3115.00	36,678
28S	Max Fault	Three Phase	HOBBS_TR3 113.200	41,815
28S	Max Fault	Three Phase	HOBBS_PLT1 118.000	75,100
28S	Max Fault	Three Phase	HOBBS_PLT2 118.000	75,035
28S	Max Fault	Three Phase	HOBBS_PLT3 118.000	5,340
28S	Max Fault	Three Phase	PHANTOM TR4113.200	19,994
28S	Max Fault	Three Phase	PHANTOM TR1113.200	45,392
28S	Max Fault	Three Phase	PHANTOM TR2113.200	45,392
28S	Max Fault	Three Phase	PHANTOM 3115.00	24,811
28S	Max Fault	Three Phase	PHANTOM 9765.00	7,475
28S	Max Fault	Three Phase	PHANTOM 7345.00	15,479
28S	Max Fault	Three Phase	RDRUNNR_SVC115.000	27,868
28S	Max Fault	Three Phase	PHANTOM TR3 13.200	45,392
28S	Max Fault	Three Phase	BATTLE_AXE 3115.00	3,351
28S	Max Fault	Three Phase	N_LOVING TR113.200	34,448
28S	Max Fault	Three Phase	SOUTH_LOVNG3115.00	11,716
28S	Max Fault	Three Phase	BLACKRIVER 3115.00	13,060
28S	Max Fault	Three Phase	MALAGABEND 3115.00	9,216
28S	Max Fault	Three Phase	AGAVE_PDURO3115.00	9,556
28S	Max Fault	Three Phase	AZTEC 3115.00	10,395
28S	Max Fault	Three Phase	CHINA_DRAW 113.200	33,812
28S	Max Fault	Three Phase	CHINA_DRAW 3115.00	15,480
28S	Max Fault	Three Phase	CHINA_DRAW 7345.00	11,034

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	CD_SVC_HV 3115.00	15,480
28S	Max Fault	Three Phase	WOOD_DRAW 3115.00	11,058
28S	Max Fault	Three Phase	OCHOA 3115.00	13,782
28S	Max Fault	Three Phase	CHVRN_EDDYS324.940	41,739
28S	Max Fault	Three Phase	LE-WEST_SUB3115.00	9,303
28S	Max Fault	Three Phase	MADDOX 3115.00	31,789
28S	Max Fault	Three Phase	BENSING 3115.00	8,181
28S	Max Fault	Three Phase	MILLEN_TPW 3115.00	12,164
28S	Max Fault	Three Phase	DASCO 3115.00	6,049
28S	Max Fault	Three Phase	WARD 3115.00	6,124
28S	Max Fault	Three Phase	ZIAHILS13 3 115.00	2,732
28S	Max Fault	Three Phase	S_JAL 112.470	11,218
28S	Max Fault	Three Phase	S_JAL 3115.00	6,894
28S	Max Fault	Three Phase	DOLLARHIDE 3115.00	5,220
28S	Max Fault	Three Phase	ANDREWS_TR2113.200	13,282
28S	Max Fault	Three Phase	ANDREWS_TR1113.200	69,055
28S	Max Fault	Three Phase	ANDREWS 3115.00	10,267
28S	Max Fault	Three Phase	ANDREWS 6230.00	6,340
28S	Max Fault	Three Phase	CV-CONEBUTE3115.00	3,438
28S	Max Fault	Three Phase	SENDERO +3115.00	12,786
28S	Max Fault	Three Phase	CB_WTRFLDTP269.000	2,539
28S	Max Fault	Three Phase	NAVAMAL_TP 269.000	1,981
28S	Max Fault	Three Phase	CHDRAW_SVC 115.000	27,445
28S	Max Fault	Three Phase	CHVN_SOLAR 124.940	41,739
28S	Max Fault	Three Phase	CB_WTRFIELD269.000	1,820
28S	Max Fault	Three Phase	WHITES_CTY 269.000	1,282
28S	Max Fault	Three Phase	NAVAJOMALGA269.000	1,736
28S	Max Fault	Three Phase	DRINKARD 3115.00	7,893
28S	Max Fault	Three Phase	NA_ENRICH 3115.00	10,222
28S	Max Fault	Three Phase	LEA_ROAD 3115.00	6,049
28S	Max Fault	Three Phase	DRINKARD_TP3115.00	7,772
28S	Max Fault	Three Phase	DOLLARHIDE 112.470	11,527
28S	Max Fault	Three Phase	DAY-69 69.000	55,869
28S	Max Fault	Three Phase	DAA-CT1-13.813.800	24,766
28S	Max Fault	Three Phase	DAA-CT2-13.813.800	24,766
28S	Max Fault	Three Phase	DAA-CT3-13.813.800	24,711
28S	Max Fault	Three Phase	DAA-6T3-13.213.200	8,947
28S	Max Fault	Three Phase	DAA-CT4-13.813.800	24,711
28S	Max Fault	Three Phase	DAA-6T6-13.213.200	8,421
28S	Max Fault	Three Phase	DAA-6T9-13.213.200	7,170
28S	Max Fault	Three Phase	POTTER_TR3 113.200	34,536
28S	Max Fault	Three Phase	CHVN_SOLGSU124.900	17,295
28S	Max Fault	Three Phase	LEA_ROAD 112.470	5,494
28S	Max Fault	Three Phase	OIL_CENTER 3115.00	6,297
28S	Max Fault	Three Phase	DBM-345 345.00	17,276
28S	Max Fault	Three Phase	DAH-345 345.00	23,494
28S	Max Fault	Three Phase	IHL-345 345.00	24,881

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	DBK-345 345.00	14,643
28S	Max Fault	Three Phase	DBK-GEN-BT 345.00	14,643
28S	Max Fault	Three Phase	HIGG 3115.00	10,420
28S	Max Fault	Three Phase	CUNINGHAM1 113.800	29,492
28S	Max Fault	Three Phase	CUNINGHAM4 113.800	74,814
28S	Max Fault	Three Phase	ENRON 3115.00	12,623
28S	Max Fault	Three Phase	ASGI10-010 113.800	24,667
28S	Max Fault	Three Phase	LE-NRTH_INT3115.00	9,236
28S	Max Fault	Three Phase	WC_TER 113.800	9,295
28S	Max Fault	Three Phase	WC_SEC 134.500	5,468
28S	Max Fault	Three Phase	MADDOXG23 3115.00	31,789
28S	Max Fault	Three Phase	MADDOX_1 113.800	89,491
28S	Max Fault	Three Phase	MADDOX_2 113.800	34,405
28S	Max Fault	Three Phase	MADDOX_3 112.500	13,411
28S	Max Fault	Three Phase	BUCKEYE 3115.00	13,196
28S	Max Fault	Three Phase	LYNCH_TP 3115.00	13,577
28S	Max Fault	Three Phase	PEARLE 3115.00	13,005
28S	Max Fault	Three Phase	MILLEN 3115.00	12,164
28S	Max Fault	Three Phase	SANGER_SW 3115.00	17,181
28S	Max Fault	Three Phase	SW_4J44 3115.00	11,643
28S	Max Fault	Three Phase	MONUMENT 112.470	9,342
28S	Max Fault	Three Phase	MONUMENT 3115.00	16,797
28S	Max Fault	Three Phase	W_HOBBS 3115.00	12,264
28S	Max Fault	Three Phase	MONUMNT_TP 3115.00	10,892
28S	Max Fault	Three Phase	OXY_NHU_RCF3115.00	16,116
28S	Max Fault	Three Phase	OXYPERMIAN 3115.00	16,368
28S	Max Fault	Three Phase	BYRD_TP 3115.00	8,332
28S	Max Fault	Three Phase	LE-TXACO_TP3115.00	12,075
28S	Max Fault	Three Phase	OGS 345 345.00	12,366
28S	Max Fault	Three Phase	RUSSELL 3115.00	9,248
28S	Max Fault	Three Phase	HIGGEAST 3115.00	10,225
28S	Max Fault	Three Phase	JOHNSON_DRW3115.00	11,074
28S	Max Fault	Three Phase	LE-WAITS 3115.00	8,973
28S	Max Fault	Three Phase	WC_POLE 134.500	4,585
28S	Max Fault	Three Phase	LE-SANANDRS3115.00	10,015
28S	Max Fault	Three Phase	MILLEN_TPE 3115.00	12,164
28S	Max Fault	Three Phase	W_BENDER 3115.00	15,713
28S	Max Fault	Three Phase	OXY_S_HOBBS3115.00	10,968
28S	Max Fault	Three Phase	EUNICE 3115.00	6,019
28S	Max Fault	Three Phase	COOPER_RNCH3115.00	6,838
28S	Max Fault	Three Phase	BYRD 3115.00	7,668
28S	Max Fault	Three Phase	LE-LOVINTON269.000	7,264
28S	Max Fault	Three Phase	LE-TEXACO 3115.00	10,251
28S	Max Fault	Three Phase	DBT-345-J475345.00	17,276
28S	Max Fault	Three Phase	DBT-345-J555345.00	17,276
28S	Max Fault	Three Phase	DBK-34-BUS1 34.500	26,863
28S	Max Fault	Three Phase	DBK-34-BUS2 34.500	26,863

Season	Model	Fault	Bus	Current (Amps)
28S	Max Fault	Three Phase	DBK-9T1-13 13.800	35,011
28S	Max Fault	Three Phase	DBK-9T2-13 13.800	35,011
28S	Max Fault	Three Phase	ZACHARY-345 345.00	12,708
28S	Max Fault	Three Phase	MALJMAR1&2 3115.00	4,942
28S	Max Fault	Three Phase	LE-SANANDRS269.000	8,120
28S	Max Fault	Three Phase	OGS T1T 99.000	49,469
28S	Max Fault	Three Phase	S_HOBBS 3115.00	10,809
28S	Max Fault	Three Phase	DENVER_N 3115.00	21,783
28S	Max Fault	Three Phase	SEMINOLE 3115.00	14,308
28S	Max Fault	Three Phase	AM_FRAC 3115.00	9,827
28S	Max Fault	Three Phase	GAINES_TR1 113.200	5,494
28S	Max Fault	Three Phase	GAINES_TR2 113.200	3,227
28S	Max Fault	Three Phase	GAINES 269.000	5,586
28S	Max Fault	Three Phase	GAINES 3115.00	9,580
28S	Max Fault	Three Phase	OXY_WSTSEM 3115.00	6,941
28S	Max Fault	Three Phase	OXY_WSEM_TP3115.00	9,382
28S	Max Fault	Three Phase	LEGACY 3115.00	7,795
28S	Max Fault	Three Phase	MAPCO 3115.00	10,814
28S	Max Fault	Three Phase	TAYLOR 3115.00	15,082
28S	Max Fault	Three Phase	CORONADO 3115.00	14,082
28S	Max Fault	Three Phase	NE_HOBBS 3115.00	12,401
28S	Max Fault	Three Phase	N_HOBBS 3115.00	10,441
28S	Max Fault	Three Phase	E_SANGER 3115.00	13,126
28S	Max Fault	Three Phase	LE-ANCELL 269.000	4,886
28S	Max Fault	Three Phase	LE-ERF_TR 112.470	10,297
28S	Max Fault	Three Phase	LE-ERF 269.000	6,028
28S	Max Fault	Three Phase	LE-ERF 3115.00	11,074
28S	Max Fault	Three Phase	LE-GAINES 269.000	3,205
28S	Max Fault	Three Phase	LE-ROZ 269.000	5,084

Table 3-3: Short Circuit Results

STABILITY

SPP performed a Fast Fault Screening (FFS) using the 2033 Summer Peak for the base case and change case models. The change case models include the Cluster C delivery point changes. SPP determined significant differences in the critical clearing times between the base and change cases. Therefore, a limited transient stability assessment was required.

SPP completed a limited transient stability assessment of the load additions for Cluster C. SPP staff started with the TPL-001 contingency list submitted by SPS and added additional contingencies based on new 345 kV and 765 kV facilities being added by the ITP portfolios. SPP updated the models after identifying issues caused by the capacitor bank controllers at the CAPROCK substation, which utilize the SWCAPT dynamic models. SPP ran the contingencies against the updated case set and determined that there are no transient stability issues that need to be addressed in the Cluster C models.

TRANSMISSION SOLUTIONS

The addition of the load at these delivery points caused potential thermal and voltage violations on the SPS transmission system around the delivery points. SPP coordinated with SPS to determine several different solutions that SPP combined into the two solutions below.

Solution #1: Total cost ~$56.2M

- Rebuild Maddox – Pearle 115 kV Line
- Rebuild Lynch Tap – Pearle 115 kV Line
- Rebuild Cunningham – Quahada 115 kV Line
- New Sage Brush – Custer Mountain 115 kV Line
- Add new 20 MVAR cap bank at Battle Axe 115 kV Substation
- New Kiowa 345/115 kV Transformer
- New Lynch Tap – Medanos 115 kV Line
- New Roadrunner 345/115 kV Transformer #3
- New Phantom – Crossroads – Potter 765 kV Line

Solution #2 Total cost ~$35.5M

- Rebuild Maddox – Pearle 115 kV Line
- Rebuild Lynch Tap – Pearle 115 kV Line
- Rebuild Cunningham – Quahada 115 kV Line
- New Sage Brush – Custer Mountain 115 kV Line
- New 20 MVAR Capacitor Bank at Battle Axe 115 kV Substation
- New Lea National 345 kV Substation
- New Lea National 345/115 kV Transformer
- Rebuild Lea National – Enron Tap 115 kV Line
- New Lynch Tap – Medanos 115 kV Line
- New Roadrunner 345/115 kV Transformer #3
- New Phantom – Crossroads – Potter 765 kV Line

SPP chose Solution #2 to resolve all issues identified in Tables 3-1 and 3-2 using the most cost-effective manner.

New Upgrade Description*	Mileage	MVA (Rate B)	Date Needed**	Host Transmission Owner	Estimated Cost***
Rebuild Maddox – Pearle 115 kV Line	15.33	210	6/1/2025	SPS	ITP Project
Rebuild Lynch Tap – Pearle 115 kV Line	5.52	168	6/1/2025	SPS	ITP Project
Rebuild Cunningham – Quahada 115 kV Line	19.269	188	6/1/2025	SPS	$19,108,162
New Sage Brush – Custer Mountain 115 kV Line	14		4/1/2025	SPS	$15,166,368
New 20 MVAR Capacitor Bank at Battle Axe 115 kV Substation			4/1/2025	SPS	$1,091,240
New Lea National 345 kV Substation			6/1/2025	SPS	ITP Project
New Lea National 345/115 kV Transformer			6/1/2025	SPS	ITP Project
Rebuild Lea National – Enron Tap 115 kV Line	0.17	180	4/1/2032	SPS	$168,581
New Lynch Tap – Medanos 115 kV Line	17.04		12/1/2028	TBD	ITP Project
New Roadrunner 345/115 kV Transformer #3			11/1/2026	SPS	ITP Project
New Phantom – Crossroads – Potter 765 kV Line	293.04		12/1/2025	TBD	ITP Project
TOTAL NEW UPGRADE COST					**$35,534,351**

Table 3-4: Recommended Transmission Upgrades (Solution #2)

*All requests with a Network Upgrade(s) identified in the DPNS will be subject to further evaluation in the soonest available Integrated Transmission Planning Assessment that is able to include the load changes, if it is determined that the Network Upgrade(s) will be able to meet the study timeframe requirements pursuant to the standardized project timelines in SPP Business Practices, based on the SPP determined Network Upgrade(s) need date. If it is determined that a Network Upgrade(s) identified from a DPNS is unable to be further evaluated pursuant to the Integrated Transmission Planning Assessment, the DPNS report will be posted on the SPP website once SPP is notified by the Transmission Customer to update the applicable Network Integration Transmission Service Agreement to reflect the changes in delivery points and the Network Upgrade(s).

Pursuant to Attachment AQ of the Tariff, the Transmission provider is responsible for assessing the impacts on the Transmission System caused by modifying an existing delivery point or establishing the new delivery point through the Delivery Point Network Study ("DPNS"). The DPNS may

determine the need for a Network Upgrade(s) necessary for the modification of an existing delivery point or the establishment of a new delivery point. A Network Upgrade(s) that the Transmission Customer or Host Transmission Owner desires that exceeds the needed Network Upgrade(s) identified in the DPNS will need to be studied through the Transmission Provider's Sponsored Upgrade study process to evaluate the impacts of the desired changes on the Transmission System.

**If the project need date specified in this study cannot be met, the Transmission Owner will be required to submit mitigations pursuant to the SPP Project Tracking process. All upgrades or mitigations must be in place prior to the dates shown in Table 3-4.

***Note that the estimated new upgrade cost provided in this report is an SPP Conceptual Cost Estimate only; this is preliminary, and a more refined Study Cost Estimate will be developed after issuance of this report through a Standardized Cost Estimate Reporting Template (SCERT).

SECTION 4: CONCLUSION

The AC analysis revealed potential thermal and voltage violations associated with the Cluster C load additions. The study shows that the following upgrades are required to reliably serve the load additions:

- Rebuild Maddox – Pearle 115 kV Line
- Rebuild Lynch Tap – Pearle 115 kV Line
- Rebuild Cunningham – Quahada 115 kV Line
- New Sage Brush – Custer Mountain 115 kV Line
- New 20 MVAR Capacitor Bank at Battle Axe 115 kV Substation
- New Lea National 345 kV Substation
- New Lea National 345/115 kV Transformer
- Rebuild Lea National – Enron Tap 115 kV Line
- New Lynch Tap – Medanos 115 kV Line
- New Roadrunner 345/115 kV Transformer #3
- New Phantom – Crossroads – Potter 765 kV Line

SPP recommends the transmission upgrades in Table 3-4 to mitigate the potential thermal and voltage violations.

APPENDIX A

Delivery Point Name	2025 Light Load (MW/ MVAR)	2025 Summer (MW/ MVAR)	2025 Winter (MW/ MVAR)	2028 Light Load (MW/ MVAR)	2028 Summer (MW/ MVAR)	2028 Winter (MW/ MVAR)	2033 Light Load (MW/ MVAR)	2033 Summer (MW/ MVAR)	2033 Winter (MW/ MVAR)
Ponderosa	81/26.62	81/26.62	75/24.65	84/27.61	84/27.61	75/24.65	84/11.969	84/11.969	75/10.687
Sage Brush	40/13.15	40/13.15	41/13.48	45/14.79	45/14.79	48/15.78	80/11.399	80/11.399	80/11.399
Sand Dunes	28/9.2	28/9.2	26/8.55	30/9.86	45/14.79	27/8.87	40/5.7	40/5.7	36/5.13
South Loving	40/13.15	40/13.15	41/13.48	45/14.79	45/14.79	45/14.79	45/6.412	45/6.412	44/6.27
Zama	0/0	0/0	2/0.66	35/11.5	35/11.5	37/12.16	50/16.43	50/16.43	50/16.43
Dexter	1.4/0.46	1.4/0.46	1.1/0.36	1.4/0.46	1.4/0.46	1.3/0.43	1/0.33	1/0.33	0.9/0.3
Percy	4.5/1.48	4.5/1.48	4.1/1.35	5/1.64	5/1.64	4.4/1.45	5.5/0.784	5.5/0.784	4.5/0.641
Artesia Town	1.77/0.58	1.77/0.58	1.1/0.36	0/0	0/0	0/0	0/0	0/0	0/0
Chase	4/1.31	4/1.31	6/1.97	8/2.63	8/2.63	7.1/2.33	8/1.14	8/1.14	7.1/1.012
Smith	1.77/0.58	1.77/0.58	1.1/0.36	0/0	0/0	0/0	0/0	0/0	0/0
Carlsbad Water	2.4/0.79	2.4/0.79	2.1/0.69	0/0	0/0	0/0	0/0	0/0	0/0
White City	1.6/0.53	1.6/0.53	0.8/0.26	0/0	0/0	0/0	0/0	0/0	0/0
Targa Roadrunner	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18	3.6/1.18
Roadrunner	68/22.35	68/22.35	72/23.67	90/29.58	90/29.58	90.5/29.75	45/14.791	45/14.791	45/14.791
Coronado	0/0	0/0	0/0	17/5.59	17/5.59	16.5/5.42	17/2.422	17/2.422	15/2.137
East Sanger	20.4/6.71	20.4/6.71	19.2/6.31	13/4.27	13/4.27	19.7/6.48	14/4.6	14/4.6	20.7/6.8
NE Hobbs	19.5/6.41	19.5/6.41	17.5/5.75	12.25/4.03	12.25/4.03	11.2/3.68	13.5/4.44	13.5/4.44	12.3/4.04
Dasco	0/0	0/0	0/0	12/3.94	12/3.94	14/4.46	16/2.28	16/2.28	27.25/8.96
Lea Road	14/4.6	14/4.6	13.5/4.44	0/0	0/0	0/0	0/0	0/0	0/0
Aztec	0/0	0/0	0/0	13/4.27	13/4.27	15/4.93	28/3.99	28/3.99	27/3.847
Phantom	10/3.29	10/3.29	14/4.6	32/10.52	32/10.52	36/11.83	18/2.565	18/2.565	18/2.565
Highland Park	27.3/8.97	27.3/8.97	24.6/8.09	0/0	0/0	0/0	0/0	0/0	0/0
Hornet	0/0	0/0	0/0	35.25/11.59	35.25/11.59	31.8/10.45	35/4.987	35/4.987	31.5/4.489
Medanos	40/13.15	40/13.15	41/13.48	58/19.06	58/19.06	60/19.72	66/9.404	66/9.404	66/9.404
Tercio	0/0	0/0	7/2.3	30/9.86	30/9.86	34/11.18	35/4.987	35/4.987	35/4.987
Battle Axe	82/26.95	82/26.95	80/26.29	82/26.95	82/26.95	80/26.29	82/11.684	82/11.684	80/11.399
China Draw	45/14.79	45/14.79	44/14.46	45/14.79	45/14.79	44/14.46	45/14.79	45/14.79	44/6.27
Drinkard	20/6.57	20/6.57	19/6.24	20/6.57	20/6.57	19/6.24	16/2.28	16/2.28	14/1.995
Hopi	44.8/14.73	44.8/14.73	42.5/13.97	45.8/15.05	45.8/15.05	42.5/13.97	45/6.412	45/6.412	42.5/6.056
Livingston Ridge	22.5/7.4	22.5/7.4	22/7.23	22.8/7.49	22.8/7.49	22.2/7.3	22.5/3.206	22.5/3.206	21/2.992
Lynch	30/9.86	30/9.86	32/10.52	40.5/13.31	40.5/13.31	39/12.82	35/4.987	35/4.987	34/4.845
Magnum	10/3.29	10/3.29	11/3.62	16/5.26	16/5.26	17/5.59	16/2.28	16/2.28	15/2.137
Malaga 1	15/4.93	15/4.93	16/5.26	22.4/7.36	22.4/7.36	21/6.9	50/7.125	50/7.125	49/6.982
Malaga 2	30/9.86	30/9.86	40/13.15	40.4/13.28	40.4/13.28	40/13.15	41.4/13.61	41.4/13.61	40/13.15
North Loving	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2
Ochoa	30/9.86	30/9.86	28/9.2	0/0	0/0	0/0	0/0	0/0	0/0
PCA	12/3.94	12/3.94	12.5/4.11	15/4.93	15/4.93	14.5/4.77	15/2.137	15/2.137	14.5/2.066
Pearle	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/9.2	28/3.99	28/3.99	28/3.99