Impact Study of Interim Operation for Generator Interconnection

ASGI-2015-002

June 2015
Generator Interconnection

SPP Southwest Power Pool

Revision History

Date	Author	Change Description
6/3/2015	SPP	Impact Study of Interim Operation for Generator Interconnection ASGI-2015-002 Report Issued

Executive Summary

<OMITTED TEXT> (Customer; ASGI-2015-002) has requested an Interim Operation System Impact Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for 2 MW of generation to be interconnected into the Transmission System of South Plains Electric Cooperative, Inc. (South Plains). The South Plains system is interconnected to the Southwestern Public Service (SPS) in Lubbock County, Texas. ASGI-2015-002 has requested this Interim Operation Interconnection Study (IOIS) to determine the impacts of interconnecting to the transmission system before the completion of all studies related to DISIS-2015-001. ASGI-2015-002's ability to request this study is consistent with GIP Section 11A.

This IOIS addresses the effects of interconnecting the generator to the transmission system for the system topology and conditions as expected on June 1, 2015. ASGI-2015-002 is requesting the interconnection of one wind turbine generator and associated facilities on the distribution system of the South Plains Electric Cooperative with a point of impact to the SPP Transmission System at the South Plains Yuma 69kV substation. For the typical IOIS, both a power flow and a transient stability analysis are conducted. The IOIS assumes that only the higher queued projects listed within Table 1 of this study might go into service before the completion of all Network Upgrades identified within Table 2 of this report. If additional generation projects, listed within Table 3, with queue priority equal to or higher than the study project request rights to go into commercial operation before all Network Upgrades identified within Table 2 of this report are completed, this IOIS may need to be restudied to ensure that interconnection service remains for the customer's request.

Power flow analysis from this IOIS has determined that the ASGI-2015-002 request can interconnect 2 MW of generation as an Energy Resource prior to the completion of the required Network Upgrades, listed within Table 2 of this report. Should any other projects, other than those listed within Table 1 of this report, come into service an additional study may be required to determine if any Interim operation service is available.

A transient stability analysis was performed for this IOIS study. Based on the stability results ASGI-2015-002 did not cause any stability problems and remained stable for all faults studied. No generators tripped or went unstable, and voltages recovered to acceptable levels.

Based on the results of this Interim Operation Impact Study, the ASGI-2015-002 Affected System Interconnection Request may interconnect prior to the completion of the DISIS-2015-001 study. However, the final cost allocation associated with ASGI-2015-002 will be determined at the completion of the associated impact and facility studies associated with ASGI-2015-002 through the DISIS and Interconnection Facilities Study processes.

It should be noted that although this IOIS analyzed many of the most probable contingencies, it is not an all-inclusive list that can account for every operational situation. Additionally, the generator may not be able to inject any power onto the Transmission System due to constraints that fall below the threshold of mitigation for a Generator Interconnection request. Because of this, it is likely that the Customers may be required to reduce their generation output to **0 MW** under

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

Nothing in this study should be construed as a guarantee of delivery or transmission service. If the customer wishes to sell power from the facility, a separate request for transmission service must be requested on Southwest Power Pool's OASIS by the Customer.

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Purpose

<OMITTED TEXT> (Interconnection Customer) has requested an Interim Operation System Impact Study (IOIS) under the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT) for interconnection requests into the Transmission System of Southwestern Public Service (SPS).

The purpose of this study is to reevaluate the impacts of interconnecting ASGI-2015-002 request of 2 MW comprised of one wind turbine generator and associated facilities interconnecting at the Yuma 69kV substation in Lubbock County, Texas. The Customer has requested this amount to be studied as an Energy Resource (ER) with Interim Operation Interconnection Service to commence on or around June of 2015.

Both a power flow analysis and a transient stability analysis were conducted for this Interim Operation Interconnection Service. Interim Operation Studies are conducted under GIP Section 11A.

The IOIS considers the Base Case as well as all Generating Facilities (and with respect to (b) below, any identified Network Upgrades associated with such higher queued interconnection) that, on the date the IOIS is commenced:

a) are directly interconnected to the Transmission System;
b) are interconnected to Affected Systems and may have an impact on the Interconnection Request;
c) have a pending higher queued Interconnection Request to interconnect to the Transmission System listed in Table 1; or
d) have no Queue Position but have executed an LGIA or requested that an unexecuted LGIA be filed with FERC.

Any changes to these assumptions, for example, one or more of the previously queued requests not included within this study execute an interconnection agreement and commencing commercial operation, may require a re-study of this IOIS at the expense of the Customer.

Nothing within this System Impact Study constitutes a request for transmission service or confers upon the Interconnection Customer any right to receive transmission service rights. Should the Customer require transmission service, those rights should be requested through SPP's Open Access Same-Time Information System (OASIS).

This IOIS study included prior queued generation interconnection requests. Those listed within Table 1 are the generation interconnection requests that are assumed to have rights to either full or partial interconnection service prior to the requested 6/2015 in-service of ASGI-2015-002 for this IOIS. Also listed in Table 1 are both the amount of MWs of interconnection service expected at the effective time of this study and the total MWs requested of interconnection service, the fuel type, the point of interconnection (POI), and the current status of each particular prior queued request.

Table 1: Generation Requests Included within IOIS

Project	MW	Total MW	Fuel Source	POI	Status
ASGI-2010-010	42.2	42.2		Lovington 115kV	
ASGI-2010-020	30	30		Tap LE-Tatum - LE-Crossroads 69kV	
ASGI-2010-021	15	15		Tap LE-Saunders Tap - LE-Anderson 69kV	
ASGI-2011-001	28.8	28.8		Lovington 115kV	
ASGI-2011-003	10	10		Hendricks 115kV	
ASGI-2011-004	20	20		Pleasant Hill 69kV	
ASGI-2012-002	18.15	18.15		FE-Clovis Interchange 115kV	
ASGI-2013-002	18.4	18.4		FE Tucumcari 115kV	
ASGI-2013-003	18.4	18.4		FE Clovis 115kV	
ASGI-2013-005	1.8	1.8		FE Clovis 115kV	
ASGI-2013-006	2	2		SP-Erskine 115kV	
GEN-2001-033	180	180	Wind	San Juan Tap 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2001-036	80	80	Wind	Norton 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-018	170	170	CT	TUCO Interchange 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2006-026	604	604	Gas	Hobbs 230kV & Hobbs 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2008-022	300	300	Wind	Tap Eddy Co - Tolk (Crossroads) 345kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2010-006	205	205	Gas	Jones 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-045	205	205	NG CT	Jones 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-046	27	27	Diesel CT	Lopez 115kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2011-048	175	175	CT	Mustang 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-001	61.2	61.2	Wind	Cirrus Tap 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-009	15	15	CT	Mustang 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-010	15	15	CT	Mustang 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-034	7	7	CT	Mustang 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-035	7	7	CT	Mustang 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-036	7	7	CT	Mustang 230kV	IA FULLY EXECUTED/COMMERCIAL OPERATION
GEN-2012-037	203	203	CT	TUCO 345kV	IA FULLY EXECUTED/ON SCHEDULE

Table 1: Generation Requests Included within IOIS

Project	MW	Total MW	Fuel Source	POI	Status
SPS Distributed (Hopi)	10	10		Hopi 115kV	In-service
SPS Distributed (Jal)	10	10		S Jal 115kV	In-service
SPS Distributed (Lea Road)	10	10		Lea Road 115kV	In-service
SPS Distributed (Monument)	10	10		Monument 115kV	In-service
SPS Distributed (Ocotillo)	10	10		S_Jal 115kV	In-service
ASGI 2015-002	2	2	Wind	SP Yuma 69kV	

This IOIS was required because the Customer is requesting interconnection prior to the completion of all of their required upgrades listed within the latest iteration of their Definitive Interconnection System Impact Study (DISIS). Table 2 below lists the required upgrade projects for which these requests have cost responsibility. ASGI-2015-002 is included within the DISIS-2015-001 that will be posted July 31, 2015.

Table 2: Upgrade Projects not included but Required for Full Interconnection Service

Upgrade Project	Type	Description	Status
To be determined in DISIS 2015-001			

Any changes to these assumptions, for example, one or more of the previously queued requests not included within this study execute an interconnection agreement and commencing commercial operation, may require a re-study of this IOIS at the expense of the Customer. The higher or equally queued projects that were not included in this study are listed in Table 3. While this list is not all inclusive it is a list of the most probable and affecting prior queued requests that were not included within this IOIS, either because no request for Limited operation has been made or the request is on suspension, etc.

Table 3: Higher or Equally Queued GI Requests not included within IOIS

Project	MW	Total MW	Fuel Source	POI	Status
GEN-2010-046	56	56	Gas	TUCO Interchange 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2011-025	82.3	82.3	Wind	Tap Floyd County - Crosby County 115kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2012-020	478	478	Wind	TUCO 230kV	IA FULLY EXECUTED/ON SCHEDULE
GEN-2013-016	203	203	CT	TUCO 345kV	TRANSITIONED TO IFS QUEUE
GEN-2013-022	25	25	Solar	Norton 115kV	TRANSITIONED TO IFS QUEUE
ASGI-2014-002	49.6	49.6		Tap Tucumcari- Santa Rosa 115kV	

Table 3: Higher or Equally Queued GI Requests not included within IOIS

Project	MW	Total MW	Fuel Source	POI	Status
ASGI2014-005	10	10		Strata 69kV	
ASGI2014-008	10	10		South Loving 69kV	
ASGI-2014-009	10	10		Wood Draw 115kV	
ASGI-2014-010	10	10		Ochoa 115kV	
ASGI-2014-012	10	10		Cooper Ranch 115kV	
GEN-2013-027	150	150	Wind	Tap Tolk – Yoakum 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-012	225	225	Gas	Tap Hobbs Interchange – Andrews 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-033	70	70	Solar	Chaves County 115kV	TRANSITIONED TO IFS QUEUE
GEN-2014-034	70	70	Solar	Chaves County 115kV	TRANSITIONED TO IFS QUEUE
GEN-2014-035	30	30	Solar	Chaves County 115kV	TRANSITIONED TO IFS QUEUE
GEN-2014-047	40	40	Solar	Tap Tolk – Eddy County (Crossroads) 345kV	TRANSITIONED TO IFS QUEUE
GEN-2014-053	80	80	Wind	Carlisle 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-054	120	120	Wind	Carlisle 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-063	120	120	Wind	Hobbs 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-066	30	30	Solar	Norton 115kV	TRANSITIONED TO IFS QUEUE
GEN2014-070	113	113	Solar	Tap Hobbs – Yoakum 230kV	TRANSITIONED TO IFS QUEUE
GEN-2014-046	125.4	125.4	Solar	Chaves County 115kV	DISIS Stage
GEN-2014-074	152	152	Wind	Tap TUCO Interchange - OKU 345kV	DISIS Stage
GEN-2015-009	300	300	Wind	Hobbs 230kV	DISIS Stage
GEN-2015-010	250.7	250.7	Wind	Curry County 115kV	DISIS Stage
GEN-2015-014	150	150	Wind	Lehman 115kV	DISIS Stage
GEN-2015-018	80	80	Wind	Tap Bailey-Curry Co. 115kV	DISIS Stage
GEN-2015-020	100	100	Solar	Oasis 115kV	DISIS Stage
GEN-2015-022	112	112	Solar	Swisher 115kV	DISIS Stage
ASGI-2015-003	30	30		FEC New POI 115kV; Equivalenced to the Tucumcari 115kV	DISIS Stage
ASGI-2015-004	56.4	56.4		Grand River Dam Authority – Coffeyville City 69kV	DISIS Stage

Nothing in this System Impact Study constitutes a request for transmission service or grants the Interconnection Customer any rights to transmission service.

Facilities

Generating Facility

ASGI-2015-002 Interconnection Customer's request to interconnect a total of 2 MW is comprised of one wind turbine generator and associated facilities.

Interconnection Facilities

The POI for ASGI-2015-002 Interconnection Customer is the Yuma 69kV substation in Lubbock County, Kansas. Figure 1 depicts the one-line diagram of the local transmission system including the POI as well as the power flow model representing the requests.

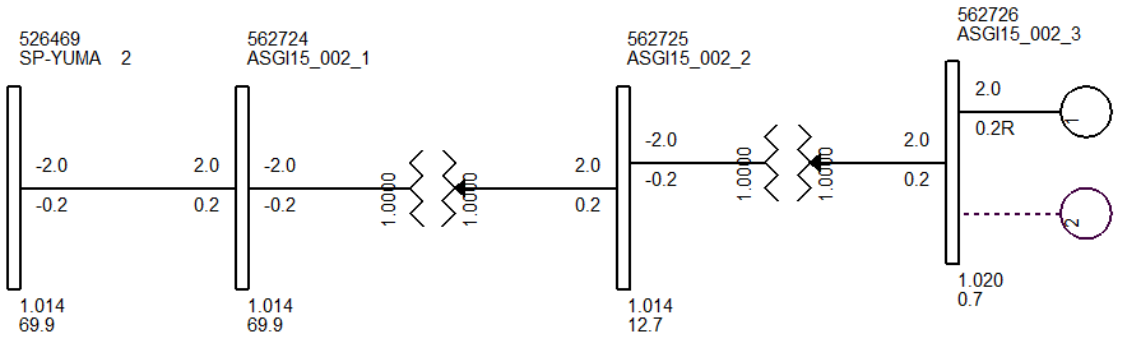

Figure 1: Proposed POI Configuration and Request Power Flow Model

Base Case Network Upgrades

The Network Upgrades included within the cases used for this IOIS study are those facilities that are a part of the SPP Transmission Expansion Plan or the Balanced Portfolio projects that have in-service dates prior to the ASGI-2015-002 IOIS requested in-service date. These facilities have an approved Notification to Construct (NTC), or are in construction stages and expected to be in-service at the effective time of this study. No other upgrades were included for this IOIS. If for some reason, construction on these projects is delayed or discontinued, a restudy may be needed to determine the interconnection service availability of the Customer.

Power Flow Analysis

Power flow analysis is used to determine if the transmission system can accommodate the injection from the request without violating thermal or voltage transmission planning criteria.

Model Preparation

Power flow analysis was performed using modified versions of the 2015 (summer and winter) seasonal models from the 2014 series of transmission service request study models. To incorporate the Interconnection Customer's request, a re-dispatch of existing generation within SPP was performed with respect to the amount of the Customer's injection and the interconnecting Balancing Authority. This method allows the request to be studied as an Energy Resource (ERIS) Interconnection Request. For this IOIS, only the previous queued requests listed in Table 1 were assumed to be in-service.

Study Methodology and Criteria

The ACCC function of PSS/E is used to simulate contingencies, including single and multiple facility (i.e. breaker-to-breaker, etc.) outages, within all of the control areas of SPP and other control areas external to SPP and the resulting data analyzed. This satisfies the "more probable" contingency testing criteria mandated by NERC and the SPP criteria.

The contingency set includes all SPP control area branches and ties 69kV and above, first tier Non-SPP control area branches and ties 115 kV and above, any defined contingencies for these control areas, and generation unit outages for the SPP control areas with SPP reserve share program redispatch.

The monitor elements include all SPP control area branches, ties, and buses 69 kV and above, and all first tier Non-SPP control area branches and ties 69 kV and above. NERC Power Transfer Distribution Flowgates for SPP and first tier Non-SPP control area are monitored. Additional NERC Flowgates are monitored in second tier or greater Non-SPP control areas. Voltage monitoring was performed for SPP control area buses 69 kV and above.

Results

The IOIS ACCC analysis indicates that the Customers can interconnect their generation into the SUNC/MKEC transmission system as requested before all required upgrades listed within the DISIS-2014-002 study can be placed into service. Should any other GI projects, other than those listed within Table 1 of this report, come into service an additional study may be required to determine if any Interim operation service is available.

ACCC results for the IOIS can be found in Table 4 and 5 below. Table 5 has the overloads that are less than 20% TDF and are not for mitigation. Generator Interconnection Energy Resource analysis doesn't mitigate for those issues in which the affecting GI request has less than a 20% OTDF, Table 5 is provided for informational purposes only so that the Customer understands there may be operational conditions when they may be required to reduce their output to maintain system reliability.

Curtailment and System Reliability

In no way does this study guarantee operation for all periods of time. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer may be required to reduce their generation output to **0 MW** under certain system conditions to allow system operators to maintain the reliability of the transmission network.

Table 4: Interconnection Constraints for Mitigation of ASGI-2015-002 IOIS @ 2MW

Season	Dispatch Group	Flow	Monitored Element	RATEA (MVA)	RATEB (MVA)	TDF	TC% LOADING	Max MW Available	Contingency
All			N/A					2	

Table 5: Additional Constraints of ASGI-2015-002 IOIS @ 2MW

Season	Dispatch Group	Flow	Monitored Element	RATEA (MVA)	RATEB (MVA)	TDF	TC% LOADING	Max Available	Contingency
All			N/A					2	

Stability Analysis

Transient stability analysis is used to determine if the transmission system can maintain angular stability and ensure bus voltages stay within planning criteria bandwidth during and after a disturbance while considering the addition of a generator interconnection request.

Model Preparation

Transient stability analysis was performed using modified versions of the 2015 summer peak and the 2015 winter peak seasonal models from the 2014 series of Model Development Working Group (MDWG) dynamic study models. The cases are then loaded with prior queued interconnection requests. The Network Upgrades included within the cases used for this IOIS study are those facilities that are a part of the SPP Transmission Expansion Plan or the Balanced Portfolio projects that have in-service dates prior to the ASGI-2015-002 IOIS requested in-service date of June 1, 2015. Finally the prior queued and study generation are dispatched into the SPP footprint. Initial simulations are then carried out for a no-disturbance run of twenty (20) seconds to verify the numerical stability of the model.

Disturbances

Ten (10) contingencies were identified for use in the transient stability study and are listed in Table 6. These contingencies included three-phase faults and single-phase line faults at locations defined by SPP. Single-phase line faults were simulated by applying fault impedance to the positive sequence network at the fault location to represent the effect of the negative and zero sequence networks on the positive sequence network. The fault impedance was computed to give a positive sequence voltage at the specified fault location of approximately 60% of pre-fault voltage. This method is in agreement with SPP current practice.

Except for transformer faults, the typical sequence of events for a three-phase and a single-phase fault is as follows:

1. apply fault at particular location
2. continue fault for five (5) cycles, clear the fault by tripping the faulted facility
3. after an additional twenty (20) cycles, re-close the previous facility back into the fault
4. continue fault for five (5) additional cycles
5. trip the faulted facility and remove the fault

Transformer faults are typically modeled as three-phase faults, unless otherwise noted. The sequence of events for a transformer fault is as follows:

1. apply fault for five (5) cycles
2. clear the fault by tripping the affected transformer facility (unless otherwise noted there will be no re-closing into a transformer fault)

Table 6: Contingencies Evaluated

Cont. No.	Contingency Name	Description
1	FLT_01_YUMAINT_SPWOLFTP_115kV_3PH	3 phase fault on the Yuma (526475) to South Plains Wolforth tap (526481) 115kV line ckt 1, near Yuma. a. Apply fault at the Yuma 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
2	FLT_02_YUMAINT_WOLFFORTH_115kV_3PH	3 phase fault on the Yuma (526475) to Wolforth (526524) 115kV line ckt 1, near Yuma. a. Apply fault at the Yuma 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT_03_SPWOLFTP_LPDOUDTP_115kV_3PH	3 phase fault on the South Plains Wolforth tap (526481) to Doud (526162) 115kV line ckt 1, near South Plains Wolforth tap. a. Apply fault at the South Plains Wolforth tap 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
4	FLT_04_LPDOUDTP_CARLISLE_115kV_3PH	3 phase fault on the Doud (526162) to Carlisle (526160) 115kV line ckt 1, near Doud. a. Apply fault at the Doud 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 6: Contingencies Evaluated

Cont. No.	Contingency Name	Description
5	FLT_05_CARLISLE_SPERSKINE_115kV_3PH	3 phase fault on the Carlisle (526160) to Erskine (526109) 115kV line ckt 1, near Carlisle. a. Apply fault at the Carlisle 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
6	FLT_06_CARLISLE_MURPHY_115kV_3PH	3 phase fault on the Carlisle (526160) to Murphy (526192) 115kV line ckt 1, near Carlisle. a. Apply fault at the Carlisle 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
7	FLT_07_CARLISLE_CARLISLE_115_69kV_3PH	3 phase fault on the Carlisle 115(526160)/ 69kv (526159)/13.2kV (526158) transformer at the Carlisle 115kV bus. a. Apply fault at the Carlisle 115kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
8	FLT_08_CARLISLE_CARLISLE_115_230kV_3PH	3 phase fault on the Carlisle 230(526161)/ 115kv (526160)/13.2kV (526157) transformer at the Carlisle 115kV bus. a. Apply fault at the Carlisle 115kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
9	FLT_09_WOLFFORTH_TERRYCNTY_115kV_3PH	3 phase fault on the Wolfforth (526524) to Terry City (526736) 115kV line ckt 1, near Wolfforth. a. Apply fault at the Wolfforth 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 6: Contingencies Evaluated

Cont. No.	Contingency Name	Description
10	FLT_10_WOLFFORTH_WOLFFORTH_115_230kV_3PH	3 phase fault on the Wolfforth 230(526525)/ 115kv (526524)/13.2kV (526522) transformer at the Carlisle 115kV bus. a. Apply fault at the Wolfforth 115kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.

Results

The stability analysis was performed and the results are summarized in Table 7. Based on the stability results ASGI-2015-002 did not cause any stability problems and remained stable for all faults studied. No generators tripped or went unstable, and voltages recovered to acceptable levels.

Complete sets of plots for the stability analysis are available on request.

Table 7: Stability Analysis Results

Contingency Number and Name		2015SP
1	FLT_01_YUMAINT_SPWOLFTP_115kV_3PH	Stable
2	FLT_02_YUMAINT_WOLFFORTH_115kV_3PH	Stable
3	FLT_03_SPWOLFTP_LPDOUDTP_115kV_3PH	Stable
4	FLT_04_LPDOUDTP_CARISLE_115kV_3PH	Stable
5	FLT_05_CARLISLE_SPERSKINE_115kV_3PH	Stable
6	FLT_06_CARLISLE_MURPHY_115kV_3PH	Stable
7	FLT_07_CARLISLE_CARLISLE_115_69kV_3PH	Stable
8	FLT_08_CARLISLE_CARLISLE_115_230kV_3PH	Stable
9	FLT_09_WOLFFORTH_TERRYCNTY_115kV_3PH	Stable
10	FLT_10_WOLFFORTH_WOLFFORTH_115_230kV_3PH	Stable

Conclusion

<OMITTED TEXT> (Interconnection Customer, ASGI-2015-002) has requested an Interim Operation System Impact Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for 2 MW of generation to be interconnected into the Transmission System of South Plains Electric Cooperative, Inc. (South Plains). The South Plains system is interconnected to the Southwestern Public Service (SPS) in Lubbock County, Texas. ASGI-2015-002, under GIP Section 11A, has requested this Interim Operation Interconnection Study (IOIS) to determine the impacts of interconnecting to the transmission system before the completion of all studies related to DISIS-2015-001.

Power flow analysis from this IOIS has determined that ASGI-2015-002 request can interconnect their generation as an Energy Resource prior to the completion of the DISIS-2015-001 and associated studies required for the Affected System Request. Should any other projects, other than those listed within Table 1 of this report, come into service an additional study may be required to determine if any Interim operation service is available. Refer to Table 4 for the Interim Operation Interconnection Service available due to interconnection constraints.

A transient stability analysis was performed for this IOIS study. Based on the stability results ASGI-2015-002 did not cause any stability problems and remained stable for all faults studied. No generators tripped or went unstable, and voltages recovered to acceptable levels.

Based on the results of this Interim Operation Impact Study, the ASGI-2015-002 Affected System Interconnection Request may interconnect prior to the completion of the DISIS-2015-001 study. However, the final cost allocation associated with ASGI-2015-002 will be determined at the completion of the associated impact and facility studies associated with ASGI-2015-002 through the DISIS and Interconnection Facilities Study processes.

Any changes to these assumptions, for example, one or more of the previously queued requests not included within this study execute an interconnection agreement and commencing commercial operation, may require a re-study of this IOIS at the expense of the Customer.

Nothing in this System Impact Study constitutes a request for transmission service or confers upon the Interconnection Customer any right to receive transmission service.