

**INTERCONNECTION
FACILITIES STUDY
REPORT**

Southwestern Public Service
Company

Shared Network Upgrade(s)

IFS-2015-002

Published April 2017

By SPP Generator Interconnections Dept.

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
4/24/2017	SPP	Initial draft report issued.	

DRAFT

CONTENTS

Revision History.....	i
Summary.....	1
Introduction	1
Generator Interconnection Request(s).....	2
Credits/Compensation for Amounts Advanced for Network Upgrade(s).....	2
Shared Network Upgrade(s) Facilities Descriptions and Costs.....	3
Conclusion.....	4
Appendices.....	5
A: Transmission Owner’s Shared Network Upgrade(s) Cost Allocation per Generator Interconnection Request.....	6

DRAFT

SUMMARY

INTRODUCTION

The interconnecting Transmission Owner, Southwestern Public Service Company (SPS), performed a detailed Interconnection Facilities Study (IFS) at the request of SPP for Shared Network Upgrade(s) assigned in the SPP Generator Interconnection Impact Study DISIS-2015-002 and its subsequent restudies. The scope of the IFS is defined in the Generator Interconnection Procedures (GIP) under Attachment V of the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT). The latest restudy iteration of DISIS-2015-002 is DISIS-2015-002-2 which posted on November 29th, 2016. Generator Interconnection Request(s) (GIRs) that have cost allocation responsibilities for assigned Network Upgrade(s) will require the assigned Network Upgrade(s) to be in-service for full Interconnection Service. The request for interconnection was placed with SPP in accordance with SPP's OATT, which covers new generator interconnections on SPP's transmission system. Based on DISIS-2015-002-2 Impact Restudy results, the following Shared Network Upgrade(s) are needed:

- Border – Crawfish Draw 345kV Circuit #2
- Carlisle 115/69/13kV Transformer Replacement Circuit #1
- Grapevine – Nichols 230kV Circuit #1
- Grapevine – Wheeler 230kV Circuit #1

The primary objective of the IFS is to identify necessary Transmission Owner Interconnection Facilities, Network Upgrade(s), other direct assigned upgrade(s), and associated upgrade lead times needed to grant the requested Interconnection Service at the specified Point of Interconnection (POI).

GENERATOR INTERCONNECTION REQUEST(S)

The GIR(s) assigned the Shared Network Upgrade(s) are listed in the corresponding **Tables 1**.

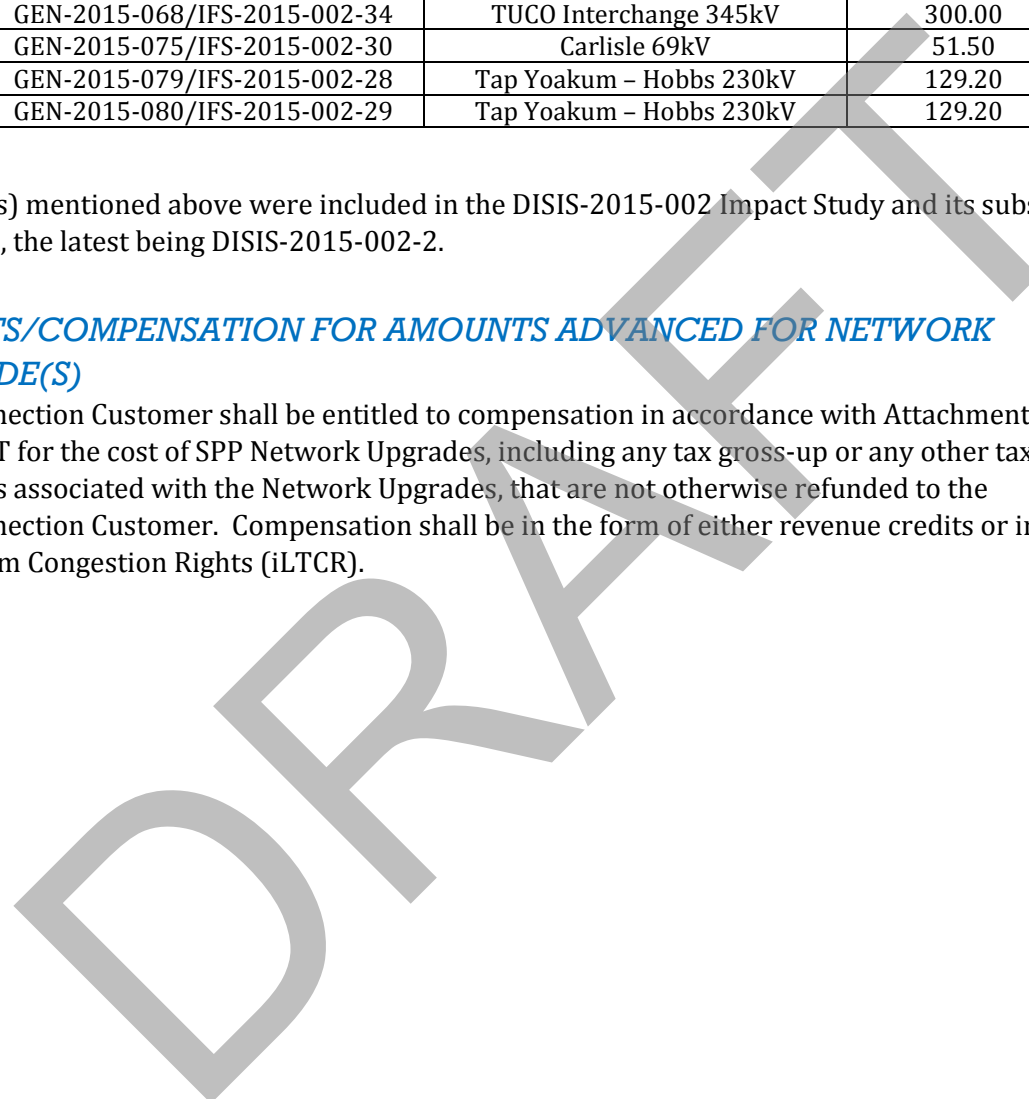
Table 1: Generator Interconnection Requests for Shared Network Upgrade(s)

GI Request Number	Point of Interconnection (POI)	Capacity (MW)
GEN-2015-020/IFS-2015-002-07	Oasis 115kV	100.00
GEN-2015-031/IFS-2015-002-27	Swisher 230kV	150.50
GEN-2015-056/IFS-2015-002-40	Crossroads 345kV	101.20
GEN-2015-058/IFS-2015-002-42	Atoka 115kV	50.00
GEN-2015-068/IFS-2015-002-34	TUCO Interchange 345kV	300.00
GEN-2015-075/IFS-2015-002-30	Carlisle 69kV	51.50
GEN-2015-079/IFS-2015-002-28	Tap Yoakum – Hobbs 230kV	129.20
GEN-2015-080/IFS-2015-002-29	Tap Yoakum – Hobbs 230kV	129.20

The GIR(s) mentioned above were included in the DISIS-2015-002 Impact Study and its subsequent restudies, the latest being DISIS-2015-002-2.

CREDITS/COMPENSATION FOR AMOUNTS ADVANCED FOR NETWORK UPGRADE(S)

Interconnection Customer shall be entitled to compensation in accordance with Attachment Z2 of the SPP OATT for the cost of SPP Network Upgrades, including any tax gross-up or any other tax-related payments associated with the Network Upgrades, that are not otherwise refunded to the Interconnection Customer. Compensation shall be in the form of either revenue credits or incremental Long Term Congestion Rights (iLTCR).



SHARED NETWORK UPGRADE(S) FACILITIES DESCRIPTIONS AND COSTS

Table 2 lists Shared Network Upgrade(s) description, costs, and provides an estimated lead time for completion of construction. The estimated lead time begins when the Generator Interconnection Agreement has been fully executed.

Shared Network Upgrade(s) Cost Allocation by each GIR(s) responsibility is shown in the **Appendix A**.

Table 2: Shared Network Upgrade(s)

TOIF and Non-Shared Network Upgrades Description	Allocated Cost Estimate (\$)	Estimated Lead Time
Border – Crawfish Draw 345kV Circuit #2: Build one-hundred-ninety-six (196) miles of second 345kV circuit from Crawfish Draw (SPS) – Border (OKGE), Crawfish Draw substation upgrades including building one (1) 345kV 3000 continuous ampacity breakers, control panels, line relaying, disconnect switches, structures, foundations, conductors, insulators, and all other associated work and materials.	\$228,167,099	72 Months
Grapevine – Nichols 230kV Circuit #1: Replace terminal equipment to at least 1600 amps	\$457,981	24 Months
Grapevine – Wheeler 230kV Circuit #1: Replace terminal equipment to at least 1600 amps	\$239,715	24 Months
Total	\$228,864,795	

All studies have been conducted assuming that higher-queued Interconnection Request(s) and the associated Network Upgrade(s) will be placed into service. If higher-queued Interconnection Request(s) withdraw from the queue, suspend or terminate service, the Interconnection Customer’s share of costs may be revised. Restudies, conducted at the customer’s expense, will determine the Interconnection Customer’s revised allocation of Shared Network Upgrades.

CONCLUSION

The Network Upgrade(s) listed in this Shared Interconnection Facilities Study are required for full Interconnection Service for the GIRs listed in **Table 1**. Interconnection Service will be delayed until the Shared Network Upgrade(s) listed in **Table 2** are constructed. The Shared Network Upgrades is summarized in the table below.

Description	Allocated Cost Estimate (\$)
Border – Crawfish Draw 345kV Circuit #2	\$228,167,099
Grapevine – Nichols 230kV Circuit #1	\$457,981
Grapevine – Wheeler 230kV Circuit #1	\$239,715
Total	\$228,864,795

A draft Generator Interconnection Agreement will be provided to the Interconnection Customer consistent with the final results of this IFS report. The Transmission Owner and Interconnection Customer will have 60 days to negotiate the terms of the GIA consistent with the SPP OATT.

DRAFT

APPENDICES

DRAFT

A: TRANSMISSION OWNER'S SHARED NETWORK UPGRADE(S) COST ALLOCATION PER GENERATOR INTERCONNECTION REQUEST

See next page for the Transmission Owner's Shared Network Upgrade(s) Cost Allocation per Generator Interconnection Request.

DRAFT

Appendix A. Cost Allocation by Upgrade

(Does Not Include Interconnection Costs or Previously Allocated Network Upgrades)

Crawfish Draw - Border 345kV CKT 2		\$228,167,099	
		Allocated Cost	Allocated %
Build 196 miles of second 345kV from Crawfish Draw - Border and Crawfish Draw Substation terminal equipment			
	GEN-2015-020	\$20,725,221	9.08%
	GEN-2015-031	\$18,908,178	8.29%
	GEN-2015-056	\$21,908,334	9.60%
	GEN-2015-058	\$11,321,454	4.96%
	GEN-2015-068	\$81,526,540	35.73%
	GEN-2015-075	\$12,701,744	5.57%
	GEN-2015-079	\$30,537,815	13.38%
	GEN-2015-080	\$30,537,815	13.38%
	Total Allocated Costs	\$228,167,099	
Grapevine - Nichols 230kV CKT 1		\$457,981	
		Allocated Cost	Allocated %
Replace terminal equipment			
	GEN-2015-020	\$58,637	12.80%
	GEN-2015-031	\$76,524	16.71%
	GEN-2015-056	\$55,630	12.15%
	GEN-2015-058	\$25,489	5.57%
	GEN-2015-068	\$98,017	21.40%
	GEN-2015-075	\$22,226	4.85%
	GEN-2015-079	\$60,729	13.26%
	GEN-2015-080	\$60,729	13.26%
	Total Allocated Costs	\$457,981	
Grapevine - Wheeler 230kV CKT 1		\$239,715	
		Allocated Cost	Allocated %
Replace terminal equipment			
	GEN-2015-020	\$19,257	8.03%
	GEN-2015-031	\$25,134	10.48%
	GEN-2015-055	\$12,469	5.20%
	GEN-2015-056	\$18,235	7.61%
	GEN-2015-058	\$8,343	3.48%
	GEN-2015-068	\$31,692	13.22%
	GEN-2015-071	\$77,663	32.40%
	GEN-2015-075	\$7,245	3.02%
	GEN-2015-079	\$19,838	8.28%
	GEN-2015-080	\$19,838	8.28%
	Total Allocated Costs	\$239,715	

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