



# **INTERCONNECTION FACILITIES STUDY REPORT**

American Electric Power – West  
Shared Network Upgrade(s)

IFS-2015-001

Published February 2018

By SPP Generator Interconnections Dept.

## REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION	COMMENTS
2/10/2017	SPP	Initial draft report issued.	
2/13/2018	SPP	Initial draft revision 1 report issued.	Updated for DISIS-2015-001-3 upgrades and cost allocation

# CONTENTS

---

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

# SUMMARY

## INTRODUCTION

The interconnecting Transmission Owner, American Electric Power - West (AEPW), 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-2015-001 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-2015-001 is DISIS-2015-001-3 which posted on September 1<sup>st</sup>, 2017. 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-2015-001-3 Impact Restudy results, the following Shared Network Upgrade(s) are needed:

- Build and Install Oklaunion +50Mvars Capacitor Bank(s)

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 Oklaunion 100Mvars Capacitor Bank(s)*

GI Request Number	Point of Interconnection (POI)	Capacity (MW)
ASGI-2015-002	SP-Yuma 69kV	2.0
GEN-2015-004/IFS-2015-001-13	Border 345kV	52.90
GEN-2015-014/IFS-2015-001-20	Tap Cochran – Lehman 115kV	150.00
GEN-2015-022/IFS-2015-001-19	Swisher 115kV	112.00

The GIR(s) mentioned above were included in the DISIS-2015-001 Impact Study and its subsequent restudies, the latest being DISIS-2015-001-3.

## 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)*

<b>TOIF and Non-Shared Network Upgrades Description</b>	<b>Allocated Cost Estimate (\$)</b>	<b>Estimated Lead Time</b>
<b>AEP-PSO Oklaunion Substation Reactive Power:</b> Install Oklaunion 50Mvars Capacitor Bank(s). AEP Public Service of Oklaunion (PSO) to install one (1) steps of 50Mvars of capacitor bank(s) at Oklaunion Substation on the Oklaunion 345kV bus. Oklaunion 345kV bus would require expanding from three (3) breaker ring to five (5) 345kV breaker ring, installing capacitors, associated switches, foundations, protective and control relaying equipment, and all associated and miscellaneous materials.	\$6,100,000	24 Months
<b>Total</b>	<b>\$6,100,000</b>	

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.

<b>Description</b>	<b>Allocated Cost Estimate (\$)</b>
<b>AEP-PSO Oklaunion Substation Reactive Power:</b> Install Oklaunion 50Mvars Capacitor Bank(s).	\$6,100,000
<b>Total</b>	<b>\$6,100,000</b>

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.

# APPENDICES

---

## **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.

# Appendix A. Cost Allocation by Upgrade

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

---

<b>Oklaunion 345kV Reactive Power</b>		<b>\$6,100,000</b>	
		<b>Allocated Cost</b>	<b>Allocated %</b>
Install (1)-500Mvar Capacitor Bank(s) at Oklaunion.			
	ASGI-2015-002	\$30,607	0.50%
	GEN-2015-004	\$2,690,324	44.10%
	GEN-2015-014	\$2,063,083	33.82%
	GEN-2015-022	\$1,315,986	21.57%
	<b>Total Allocated Costs</b>	<b>\$6,100,000</b>	

---

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