Generation Interconnection

System Impact Study Report

for

Queue Project AF1-080

DEER CREEK-FISHER BODY-MULLIN 138 KV

20 MW Capacity / 20 MW Energy

August, 2020

Table of Contents

1 Introduction

This System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 205, as well as the System Impact Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is AEP.

2 Preface

The intent of the System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation will be deferred until the System Impact Study is performed.

The System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

3 General

The Interconnection Customer (IC), has proposed an uprate (Storage generating facility) to an existing Solar generating facility (U3-002) located in Madison County, Indiana. This projects requests an increase to the install capability of 20 uprate MW with 20 of uprate MW of this output being recognized by PJM as Capacity. The installed facilities will have a total capability of 220 MW with 46 MW of this output being recognized by PJM as Capacity.

The proposed in-service date for this project is September 15, 2021. This study does not imply a TO commitment to this in-service date.

The objective of this System Impact Study is to determine budgetary cost estimates and approximate construction timelines for identified transmission facilities required to connect the proposed generating facilities to the ITO transmission system. These reinforcements include the Attachment Facilities, Local Upgrades, and Network Upgrades required for maintaining the reliability of the ITO transmission system.

Queue Number	**AF1-080**
Project Name	DEER CREEK-FISHER BODY-MULLIN 138 KV
State	Indiana
County	Madison
Transmission Owner	AEP
MFO	220
MWE	20
MWC	20
Fuel	Storage
Basecase Study Year	2023

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AF1-080 will interconnect with the AEP transmission system via a direct connection to the Strawton 138 kV substation as an uprate to the PJM project U3-002.

Note: It is assumed that the 138 kV revenue metering system, generation lead and Protection & Control Equipment installed for U3-002 will be adequate for the additional generation requested in AF1-080. During later phases AEP/PJM will determine whether there may (or may not) be a need to review and revise relay settings for the increased generation of AF1-080.

5 Cost Summary

This project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	$0
Direct Connection Network Upgrade	$0
Non Direct Connection Network Upgrades	$45,000
Allocation for New System Upgrades*	$0
Contribution to Previously Identified Upgrades*	$0
Total Costs	**$45,000**

*As your project progresses through the study process and other projects modify their request or withdraw, then your cost allocation could change.

The estimates provided in this report are preliminary in nature, as they were determined without the benefit of detailed engineering studies. Final estimates will require an on-site review and coordination to determine final construction requirements. In addition, Stability analysis will be completed during the Facilities Study stage. It is possible that a need for additional upgrades could be identified by these studies.

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Note 1: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. The allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

6 Transmission Owner Scope of Work

6.1 Attachment Facilities

The total preliminary cost estimate for the Attachment work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
	$0
Total Attachment Facility Costs	**$0**

6.2 Direct Connection Cost Estimate

The total preliminary cost estimate for the Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
	$0
Total Direct Connection Facility Costs	**$0**

6.3 Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Review Protection and Control Settings at the Strawton 138 kV substation for the increased generation of AF1-080.	$45,000
Total Non-Direct Connection Facility Costs	**$45,000**

7 Incremental Capacity Transfer Rights (ICTRs)

None

8 Schedule

It is anticipated that the time between receipt of executed Agreements and Commercial Operation may range from 12 to 18 months if no line work is required. If line work is required, construction time would generally be between 24 to 36 months after signing Agreement execution.

9 Interconnection Customer Requirements

It is understood that the Interconnection Customer is responsible for all costs associated with this interconnection. The costs above are reimbursable to the Interconnected Transmission Owner. The cost of the Interconnection Customer's generating plant and the costs for the line connecting the generating plant to the Interconnected Transmission Owner's Transmission circuit are not included in this report; these are assumed to be the Interconnection Customer's responsibility.

The Generation Interconnection Agreement does not in or by itself establish a requirement for the Interconnected Transmission Owner to provide power for consumption at the developer's facilities. A separate agreement may be reached with the local utility that provides service in the area to ensure that infrastructure is in place to meet this demand and proper metering equipment is installed. It is the responsibility of the developer to contact the local service provider to determine if a local service agreement is required.

Requirement from the PJM Open Access Transmission Tariff:

1. An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.
2. The Interconnection Customer may be required to install and/or pay for metering as necessary to properly track real time output of the facility as well as installing metering which shall be used for billing purposes. See Section 8 of Appendix 2 to the Interconnection Service Agreement as well as Section 4 of PJM Manual 14D for additional information.

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

10.2 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

http://www.pjm.com/planning/design-engineering/to-tech-standards/

11 Summer Peak Analysis

The Queue Project AF1-080 was evaluated as a 20.1 MW (Capacity 20.0 MW) injection as an uprate to U3-002 at the Strawton 138 kV substation in the AEP area. Project AF1-080 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-080 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

None

11.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

None

11.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
4373914 2	246763	05PIPECK	138.0	AEP	243303	05GRNTTA	138.0	AEP	1	AEP_P4_#8775_05STRWTN 138_A	breaker	205.0	120.45	128.89	AC	17.98
4373914 3	246763	05PIPECK	138.0	AEP	243303	05GRNTTA	138.0	AEP	1	AEP_P4_#8781_05HOGAN 138_B	breaker	205.0	119.76	124.62	AC	10.2
4373914 4	246763	05PIPECK	138.0	AEP	243303	05GRNTTA	138.0	AEP	1	AEP_P4_#6959_05HOGAN 138_A	breaker	205.0	114.2	119.07	AC	10.2
4373913 7	936560	AD2-071 TAP	138.0	AEP	246763	05PIPECK	138.0	AEP	1	AEP_P4_#8775_05STRWTN 138_A	breaker	205.0	123.04	131.48	AC	17.98
4373913 8	936560	AD2-071 TAP	138.0	AEP	246763	05PIPECK	138.0	AEP	1	AEP_P4_#8781_05HOGAN 138_B	breaker	205.0	122.33	127.2	AC	10.2
4373913 9	936560	AD2-071 TAP	138.0	AEP	246763	05PIPECK	138.0	AEP	1	AEP_P4_#6959_05HOGAN 138_A	breaker	205.0	116.77	121.64	AC	10.2

11.4 Steady-State Voltage Requirements

To be determined

11.5 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed

with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
43739628	246763	05PIPECK	138.0	AEP	243303	05GRNTTA	138.0	AEP	1	AEP_P1-2_#6957	operation	205.0	114.09	118.9	AC	10.11
43739616	936560	AD2-071 TAP	138.0	AEP	246763	05PIPECK	138.0	AEP	1	AEP_P1-2_#6957	operation	205.0	116.66	121.48	AC	10.11

11.6 System Reinforcements

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-080	Upgrade Number
43739144,43739143,43739142	1	**05PIPECK 138.0 kV - 05GRNTTA 138.0 kV Ckt 1**	**N6329 : A Sag Study will be required on the 8.2 miles of ACSR ~ 556.5 ~ 26/7 ~ DOVE - Conductor Section 1 to determine any mitigations required for the overload. The cost of this upgrade is expected to be 32,800 (No remediations required, just sag study) and $ 12.3M (complete Line Reconductor/rebuild).** **Project Type : FAC** **Cost : $20,000** **Time Estimate : 6-12 Months** **This line is first overloaded in a prior queue cycle.**	$20,000	$0	N6329
43739137,43739138,43739139	2	**AD2-071 TAP 138.0 kV - 05PIPECK 138.0 kV Ckt 1**	**N6330 : A Sag Study will be required on the 1.9 miles of ACSR ~ 556.5 ~ 26/7 ~ DOVE - Conductor Section 1 to determine any mitigations required for the overload. The cost for this upgrade is expected to be between $20,000 (no remediations required, just sag study) and $2.85 million (complete line reconductor/rebuild required).** **Project Type : FAC** **Cost : $32,800** **Time Estimate : 6-12 Months** **This line is first overloaded in a prior queue cycle.**	$32,800	$0	N6330
			TOTAL COST	**$52,800**	**$0**	

Note : For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

11.7 Flow Gate Details

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

11.7.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
4373914 2	24676 3	05PIPEC K	AEP	24330 3	05GRNTT A	AEP	1	AEP_P4_#8775_05STRWT N 138_A	breake r	205.0	120.45	128.89	AC	17.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
246991	05WLD G1 C	2.0188	50/50	2.0188
247255	05WLD G2 C	2.1194	50/50	2.1194
247958	05WLD G2 E	156.4121	50/50	156.4121
936561	AD2-071 C	61.5542	50/50	61.5542
936562	AD2-071 E	30.3178	50/50	30.3178
944121	AF1-080	17.9784	50/50	17.9784
LGEE	LGEE	0.0245	Confirmed LTF	0.0245
NEWTON	NEWTON	0.0021	Confirmed LTF	0.0021
FARMERCITY	FARMERCITY	0.0015	Confirmed LTF	0.0015
CBM-W2	CBM-W2	0.0737	Confirmed LTF	0.0737
NY	NY	0.0044	Confirmed LTF	0.0044
PRAIRIE	PRAIRIE	0.0181	Confirmed LTF	0.0181
TVA	TVA	0.0084	Confirmed LTF	0.0084
O-066	O-066	0.0470	Confirmed LTF	0.0470
COFFEEN	COFFEEN	0.0028	Confirmed LTF	0.0028
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
CBM-S1	CBM-S1	0.1022	Confirmed LTF	0.1022
TILTON	TILTON	0.0076	Confirmed LTF	0.0076
G-007	G-007	0.0073	Confirmed LTF	0.0073
CATAWBA	CATAWBA	0.0003	Confirmed LTF	0.0003

11.7.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
43739137	936560	AD2-071 TAP	AEP	246763	05PIPECK	AEP	1	AEP_P4_#8775_05STRWTN 138_A	breaker	205.0	123.04	131.48	AC	17.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
246991	05WLD G1 C	2.0188	50/50	2.0188
247255	05WLD G2 C	2.1194	50/50	2.1194
247958	05WLD G2 E	156.4121	50/50	156.4121
936561	AD2-071 C	61.5542	50/50	61.5542
936562	AD2-071 E	30.3178	50/50	30.3178
944121	AF1-080	17.9784	50/50	17.9784
LGEE	LGEE	0.0245	Confirmed LTF	0.0245
NEWTON	NEWTON	0.0021	Confirmed LTF	0.0021
FARMERCITY	FARMERCITY	0.0015	Confirmed LTF	0.0015
CBM-W2	CBM-W2	0.0737	Confirmed LTF	0.0737
NY	NY	0.0044	Confirmed LTF	0.0044
PRAIRIE	PRAIRIE	0.0181	Confirmed LTF	0.0181
TVA	TVA	0.0084	Confirmed LTF	0.0084
O-066	O-066	0.0470	Confirmed LTF	0.0470
COFFEEN	COFFEEN	0.0028	Confirmed LTF	0.0028
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
CBM-S1	CBM-S1	0.1022	Confirmed LTF	0.1022
TILTON	TILTON	0.0076	Confirmed LTF	0.0076
G-007	G-007	0.0073	Confirmed LTF	0.0073
CATAWBA	CATAWBA	0.0003	Confirmed LTF	0.0003

11.8 Queue Dependencies

The Queue Projects below are listed in one or more indices for the overloads identified in your report. These projects contribute to the loading of the overloaded facilities identified in your report. The percent overload of a facility and cost allocation you may have towards a particular reinforcement could vary depending on the action of these earlier projects. The status of each project at the time of the analysis is presented in the table. This list may change as earlier projects withdraw or modify their requests.

Queue Number	Project Name	Status
AD2-071	Strawton-Pipe Creek 138 kV	Active
AF1-080	Deer Creek-Fisher Body-Mullin 138 kV	Active

11.9 Contingency Descriptions

Contingency Name	Contingency Definition
AEP_P4_#6959_05HOGAN 138_A	CONTINGENCY 'AEP_P4_#6959_05HOGAN 138_A' OPEN BRANCH FROM BUS 247420 TO BUS 243311 CKT 1 / 247420 05CROSS ST Z 138 243311 05HOGAN 138 1 OPEN BRANCH FROM BUS 247420 TO BUS 243333 CKT 1 / 247420 05CROSS ST Z 138 243333 05MADISO 138 1 OPEN BRANCH FROM BUS 243275 TO BUS 243311 CKT 1 / 243275 05DELAWR 138 243311 05HOGAN 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246913 CKT 1 / 243311 05HOGAN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246046 CKT 1 / 243311 05HOGAN 138 246046 05HOGAN 34.5 1 OPEN BRANCH FROM BUS 243311 TO BUS 246047 CKT 1 / 243311 05HOGAN 138 246047 05HOGAN L 12.0 1 END
AEP_P1-2_#6957	CONTINGENCY 'AEP_P1-2_#6957' OPEN BRANCH FROM BUS 247116 TO BUS 246913 CKT 1 / 247116 05ALADDIN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 247116 TO BUS 246988 CKT 1 / 247116 05ALADDIN 138 246988 05STRWTN 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246913 CKT 1 / 243311 05HOGAN 138 246913 05JONES 138 1 END
AEP_P4_#8781_05HOGAN 138_B	CONTINGENCY 'AEP_P4_#8781_05HOGAN 138_B' OPEN BRANCH FROM BUS 247116 TO BUS 246913 CKT 1 / 247116 05ALADDIN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 247116 TO BUS 246988 CKT 1 / 247116 05ALADDIN 138 246988 05STRWTN 138 1 OPEN BRANCH FROM BUS 247420 TO BUS 243311 CKT 1 / 247420 05CROSS ST Z 138 243311 05HOGAN 138 1 OPEN BRANCH FROM BUS 243275 TO BUS 243311 CKT 1 / 243275 05DELAWR 138 243311 05HOGAN 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246913 CKT 1 / 243311 05HOGAN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246046 CKT 1 / 243311 05HOGAN 138 246046 05HOGAN 34.5 1 OPEN BRANCH FROM BUS 243311 TO BUS 246047 CKT 1 / 243311 05HOGAN 138 246047 05HOGAN L 12.0 1 END

Contingency Name	Contingency Definition
AEP_P4_#8775_05STRWTN 138_A	CONTINGENCY 'AEP_P4_#8775_05STRWTN 138_A' OPEN BRANCH FROM BUS 247116 TO BUS 246913 CKT 1 / 247116 05ALADDIN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 247116 TO BUS 246988 CKT 1 / 247116 05ALADDIN 138 246988 05STRWTN 138 1 OPEN BRANCH FROM BUS 243311 TO BUS 246913 CKT 1 / 243311 05HOGAN 138 246913 05JONES 138 1 OPEN BRANCH FROM BUS 243920 TO BUS 246988 CKT 1 / 243920 05MAKAHOY 138 246988 05STRWTN 138 1 END

12 Light Load Analysis

The Queue Project AF1-080 was evaluated as a 20.1 MW injection as an uprate to U3-002 at the Strawton 138 kV substation in the AEP area. Project AF1-080 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-080 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

12.1 Generation Deliverability

(Single or N-1 contingencies)

None

12.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies)

None

12.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None

12.4 Steady-State Voltage Requirements

To be determined

12.5 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

None

12.6 System Reinforcements

ID	Idx	Facility	Upgrade Description	Cost	Cost Allocated to AF1-080	Upgrade Number
			TOTAL COST	**$0**	**$0**	

Note : For customers with System Reinforcements listed: If your present cost allocation to a System Reinforcement indicates $0, then please be aware that as changes to the interconnection process occur, such as prior queued projects withdrawing from the queue, reducing in size, etc, the cost responsibilities can change and a cost allocation may be assigned to your project. In addition, although your present cost allocation to a System Reinforcement is presently $0, your project may need this system reinforcement completed to be deliverable to the PJM system. If your project comes into service prior to completion of the system reinforcement, an interim deliverability study for your project will be required.

13 Short Circuit Analysis

The following Breakers are overdutied

None.

14 Stability and Reactive Power

To be determined in the Facilities Study Phase.

15 Affected Systems

15.1 TVA

TVA Impacts to be determined during later study phases (as applicable).

15.2 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

15.3 MISO

MISO Impacts to be determined during later study phases (as applicable).

15.4 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

16 Attachment 1: One Line Diagram and Site Location