PJM Generator Interconnection Request
Queue #V3-009
Desoto-Tanners Creek 345 kV
Facilities Study

March 2016

V3-009 Desoto – Tanners Creek 345 kV Facilities Study Report

A. Facilities Study Summary

1. Project Description

EDP Renewables north America LLC (EDPR) proposes to install PJM Project #V3-009, a 200 MW generating facility comprised of 111 – 1.8 MW wind turbine generators connecting to the American Electric Power (AEP) Desoto – Tanners Creek 345 kV circuit at the substation constructed for the U2-090 IPP (Losantville Station).

2. Amendments/Changes to the Impact Study Report

- The impact study was a combined report for V3-007, V3-008, and V3-009. The facilities studies have been requested as separate reports.
- Studies documented in the Impact Study Report pre-date implementation of a Light Load criteria in the RTEP process
- Studies have been re-tooled to reflect withdrawals or reductions of projects in earlier queues.

3. Interconnection Customer Schedule

EDPR has proposed the following schedule for their collector station:

- Receive back feed from AEP: May 17, 2019
- Commercial Operation Date: October 31, 2019

4. Scope of Customer's Work

- Complete generation collector station including step up transformers.
- 345 kV connection from generation station to switching station.
- Dual fiber optic tie between stations.
- Station communications lines.

5. Description of Transmission Owner Facilities Included in the Facilities Study

Direct Connection Work

- Install one 345 kV breaker to Losantville station to accommodate the connection for V3-009. (Network Upgrade n4780)
- Install 345 kV metering to the new line exit for the V3-009 connection. (Network Upgrade n4781)

Network Upgrade Work

- None required.

6. Total Cost of Transmission Owner Facilities Included in the Facilities Study:

Direct Connection facilities	$1,183,400
Network Upgrade facilities	$0
Total Cost	$1,183,400

7. Summary of Schedule Milestones for Completion of Transmission Owner Work Included in Facilities Study:

May 17, 2019 Interconnection Station ready for service

B. Transmission Owner Facilities Study Results

1. Transmission Lines – New

None.

2. Transmission Lines – Upgrades

None.

3. Substation Facilities – New

Losantville 345 kV Station
Add one 345 kV breaker to create a new line connection for the V3-009 IPP project. Add 345 kV metering for the new line exit within the Losantville station footprint.

4. Substation Facilities – Upgrades
None

5. Metering & Communications

Physical Requirements
- Install (1) - Steel -3PH Metering steel structure per CT/PT/SA application.
- Install (1) - Foundation -Metering steel structure foundation.
- Install Control Cable- run thru new installed trench.

Metering Equipment
Use standards SS-497001, DM 51.01 to add PT and CT & primary and backup SEL734
- Install (3) - Free standing CTs and PTs between wavetrap and the bus.
- Install (3) - 84kV MCOV Station Class Arrester.

The metering requirements are published in: "AEP Metering and Telemetering Requirements for AEP Transmission Customers" (document SS-490011).

Communication requirements are published in the "AEP SCADA RTU Requirements at Transmission Interconnection Facilities" (document SS-500000).

6. Environmental, Real Estate and Permitting Issues

Since the interconnection location is proposed at an existing station, no additional permitting issues are expected.

7. Summary of Results of Study

Cost Estimates for AEP

	Network Upgrade Number	Engineering	Material	Construction	Misc.	Total
Losantville	n4779	$27,400	$414,900	$123,100	$276,300	$841,700
Metering	n4780	$21,800	$135,300	$63,200	$121,400	$341,700
Total		**$49,200**	**$550,200**	**$186,300**	**$397,700**	**$1,183,400**

Schedule

January 9, 2018	Station design begins
March 6, 2018	Material ordered
August 7, 2018	Station construction begins
April 9, 2019	Outage begins
May 17, 2019	Outage ends

Assumptions

System conditions allow scheduled outages to occur.
ISA executed by March 1, 2016.

8. Information Required for Interconnection Service Agreement

Direct Interconnection Cost Breakdown

Direct Material -	$550,200
Direct Labor -	$235,500
Indirect Material -	$45,500
Indirect Labor -	$352,200
Total	$1,183,400

Network Upgrade Cost Breakdown

None.

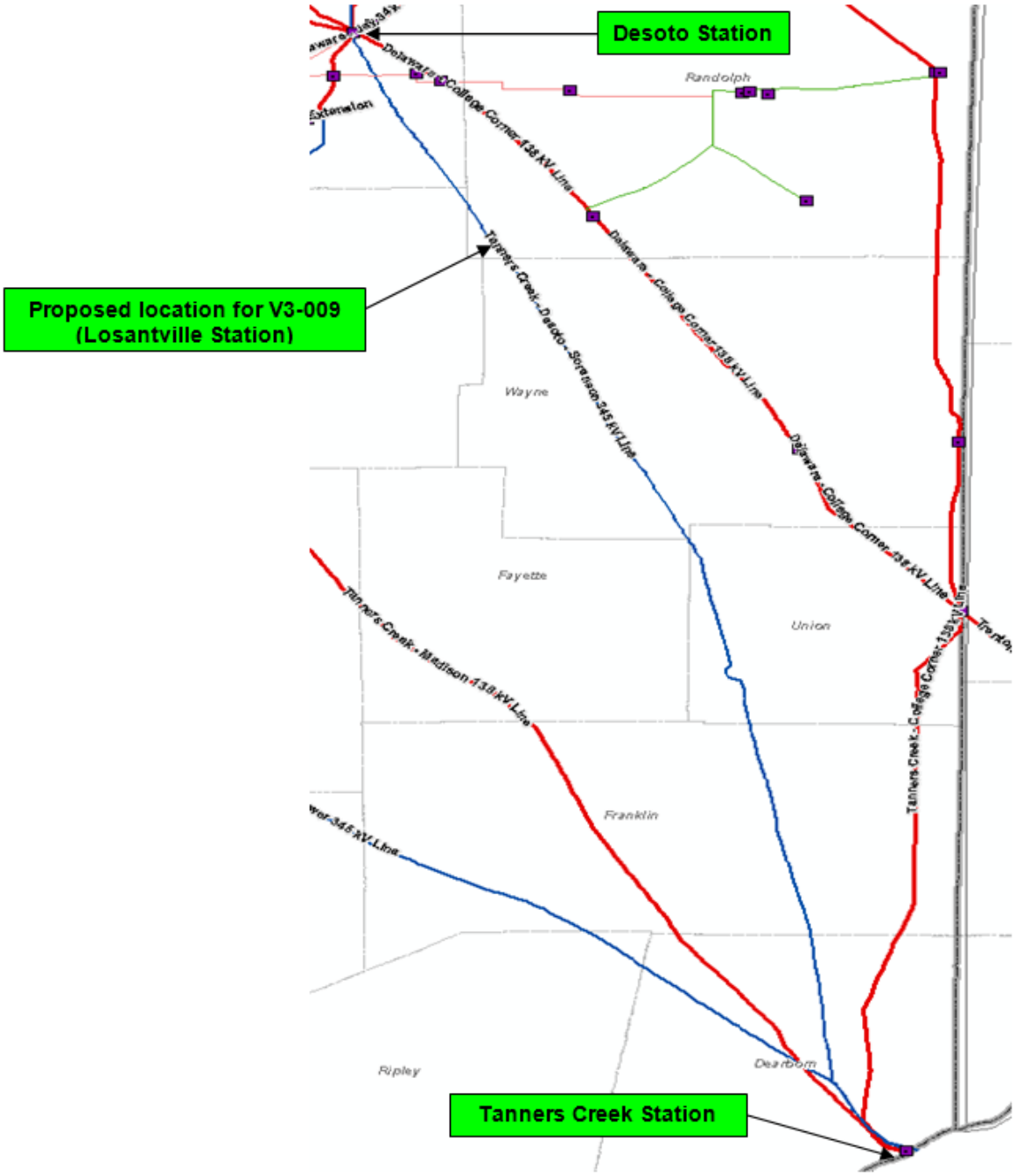

Figure 1

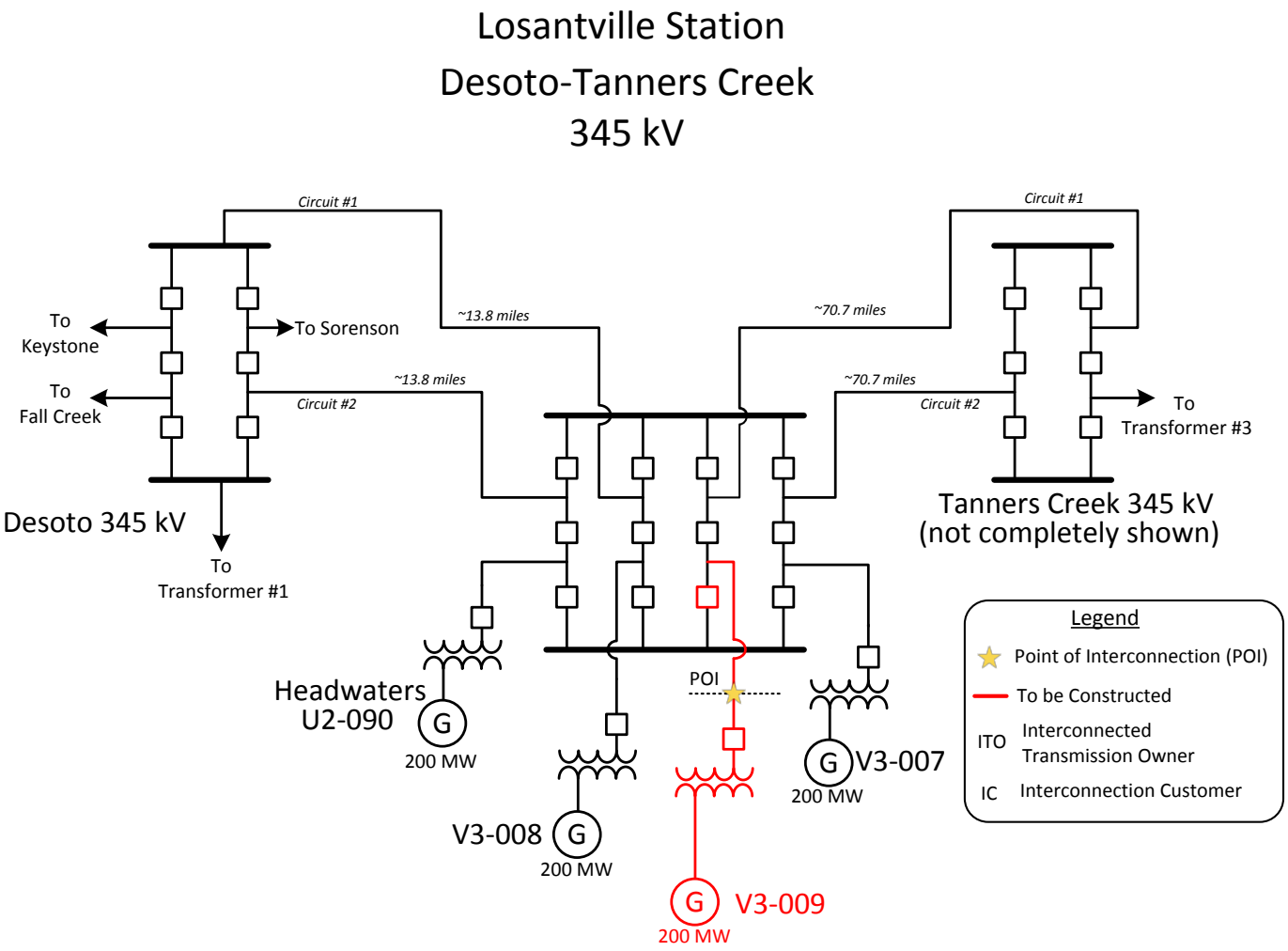

Figure 2