Eugene to Meadow Lake 345kV

New Transmission Line

August 15, 2016

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Note: Supporting files (PSS/E IDEV, Case, and Contingency Files) were submitted electronically on July 29, 2016.

1. Executive Summary

- The proposing entities are Public Service Electric and Gas Company (PSE&G) and Vectren Utility Holdings, Inc. (Vectren).
- This proposal is submitted in response to PJM's 2016 RTEP Proposal Window 2.
- The violation was identified in the N-1 thermal and generation deliverability analyses.
- No additional violations are caused by the solution presented in this proposal. There are no nearby violations not addressed by this proposal.
- The proposed project is located within the AEP zone.
- PSE&G-Vectren seeks Designated Entity Status to construct, own, operate, and maintain the proposed project.
- The following proposes a solution to the thermal overload violation including Flowgates 101 and 102 and a generation deliverability violation including Flowgates 64, 128, 130, 131, and 134.
- This project should be considered only as a whole.
- The proposed project cost is approximately (without Risk & Contingency).
- The project duration is approximately 4 years.
- In addition to direct benefits above, the Eugene to Meadow Lake 345kV transmission line proposal will provide additional capacity for the system and more outlets for wind generation.

2. Company Evaluation

2.1. Contact Information

2.1.1. Primary Contact

2.1.2. Secondary Contact

2.1.3. Headquarters

PSEG
80 Park Plaza
Newark, New Jersey 07102
(973) 430-7000

2.2. Pre-Qualification

2.3. Company Information

3. Constructability Information

3.1. Scope of Project

The proposal includes the installation of an approximately 59-mile 345kV overhead transmission line from the existing Eugene station to the existing Meadow Lake station.

3.2. Cross-Border Issues

The following proposal is not a solution to Cross-Border issues.

3.3. Proposal Elements

3.3.1. General Description

The proposal includes the installation of an approximately 59-mile 345kV overhead transmission line from the existing Eugene station to the existing Meadow Lake station.

3.3.2. Geographic Description

3.3.3. Route Description

3.3.3.1. Environmental Impacts

3.3.3.2. Right-of-way and Land Acquisition Plan and Approach

3.3.3.3. Permitting Plan and Approach

3.3.3.4. Potential Public Opposition

3.3.4. Physical Characteristics

- Line and shield conductor type and size:

- Overhead or underground/submarine: Overhead
- Single or double circuit towers: Single Circuit

3.3.5. Map and Supporting Diagram

3.3.6. Interconnection Location

3.3.7. Outage Requirements

Outages will be required for construction at the existing Eugene and Meadow Lake stations. PSE&G-Vectren will coordinate with the incumbent transmission owners to determine the length and timing of the outages. PSE&G-Vectren anticipates that there will be coordination with the MISO transmission operators for work adjacent to line crossings.

3.3.8. Cost

3.3.9. Construction Responsibility

PSE&G-Vectren will construct the Eugene to Meadow Lake 345kV transmission line. Modifications to the existing Eugene and Meadow Lake stations are assumed to be constructed by the incumbent transmission owners. PSE&G and Vectren seek Designated Entity Status to construct, own, operate, and maintain the proposed project.

4. Analytical Assessment

4.1. Analysis

4.2. Equipment Parameters and Assumptions

4.3. PSS/E IDEV Files

PSS/E IDEV files were submitted electronically on July 29, 2016.

4.4. Supporting Information

The Dequine - Meadow Lake 345kV circuit 2 and Eugene -Dequine 345kV circuit 1 are overloaded in n-1 Thermal and Generator Deliverability Tests. The Dequine to Meadows circuit 2 was overloaded for the loss of the Dequine to Meadows Lake circuit 1 under Generator Deliverability Testing. The Dequine to Eugene circuit was overloaded for loss of one of the Dequine to Sullivan 345kV, Greentown to Jefferson 345kV, Dequine to Meadows 345kV, Jefferson to Rockport 765kV, Greentown to Jefferson 765kV, and Pontiac Midpoit to Brokaw 345kV.

The proposed solution, for these thermal overloads under several tests, consists of building a 345kV circuit from Eugene to Meadow Lake.

This project will alleviate the thermal overload associated with the contingencies: 'AEP_P1-2_#6472', 'AEP_P1-2_#8905', 'AEP_P1-2_#362', 'AEP_P1-2_#363', 'AEP_P1-2_#8905', and 'COMED_P1-2_345-L8001___-S'.

4.5. Proposal Template Spreadsheet

The final RTEP Proposal Template spreadsheet (in Excel format) is provided electronically as a separate file.

4.6. Market Efficiency

This section is not applicable to this proposal.

5. Cost

5.1. Cost Estimate

5.1.1. Total Cost

5.1.2. Yearly Cash Flow

5.1.3. Escalation Rates

5.2. Detailed Breakdown of Cost

5.2.1. Planned Return on Equity

5.2.2. Estimated Monthly AFUDC

5.2.3. Annual O&M Cost

5.3. Cost Commitment

5.3.2. Estimated ATRR Calculations with Assumptions

6. Schedule

7. Operations/Maintenance

7.1. Overview

7.1.1. Previous Experience

7.1.3. Maintenance Contracts

8. Assumptions