



Final Review and Recommendation 2021 RTEP Proposal Window 1 - Cluster No. 6

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2021 RTEP Proposal Window No. 1 - Cluster No. 6

As part of its 2021 RTEP process cycle of studies, PJM identified clustered groups of flowgates that were put forward for proposals as part of 2021 RTEP Window No. 1. Specifically, Cluster No. 6 - discussed in this Final Review and Recommendation report - includes those flowgates listed in **Table 1**.

Table 1. 2021 RTEP Proposal Window No. 1 - Cluster No. 6 List of Flowgates

| Flowgate | kV Level | Driver |
|----------------|------------|---------|
| DOM-T3, DOM-T4 | 500/230 kV | Thermal |

Proposals Submitted to PJM

PJM conducted 2021 RTEP Proposal Window No. 1 for 60 days beginning July 2, 2021 and closing August 31, 2021. During the window, one entity submitted three proposals through PJM's Competitive Planner Tool. The proposals are summarized in **Table 2**. Publicly available redacted versions of the proposals can be found on PJM's web site:

<https://www.pjm.com/planning/competitive-planning-process/redacted-proposals.aspx>.

Table 2. 2021 RTEP Proposal Window No. 1, Cluster No. 6 List of Proposals

| Proposal ID# | Project Type | Project Description | Total Construction Cost M\$ | Cost Capping Provisions (Y/N) |
|--------------|--------------|---|-----------------------------|-------------------------------|
| 57 | Upgrade | Install a 2nd 500kV-230kV 840MVA transformer bank at Possum Point 500kV Yard, a 0.8 mile long 230kV line extension between Possum Point 500kV and Possum Point 230kV substation, and a new 230kV breaker at Possum 230kV Yard to terminate the extension. Note: Possum Point 500kV Substation and Possum Point 230kV Substation are separated by approximately 0.85 miles. | 24.54 | N |
| 319 | Upgrade | Replace OX 500-230kV 280MVA Transformer Banks #1 and #2 with new 500-230kV 440 MVA transformer banks and associated lowside equipment. The addition of the replaced 500-230kV transformers at OX creates a generation deliverability flowgate that will be addressed as part of this Proposal. Flowgate of Line 2036 (Glebe to Radnor Heights) requires the | 63.77 | N |

| | | | | |
|-------------------|----------------|--|--------------|----------|
| | | <p>installation of a new breaker-and-half row at Ox Substation to allow for Line #237 (Braddock-Possum Point) to be cut and terminated at OX substation.</p> <p>Additionally, Ox Breaker (201342) is overdutied based on the previous work in this Proposal and will need to be upgraded to a 63kA breaker.</p> | | |
| <p>637</p> | <p>Upgrade</p> | <p>Expand the existing Occoquan substation footprint via the installation of a 500 kV GIS ring bus, one (1) 1100 MVA 500-230 kV transformer and a 230 kV breaker-and-a-half bus configuration. 500 kV Line #571 (Ox – Possum Point) to be cut and looped into the proposed 500kV GIS ring bus. 230kV Line terminations 2001(Occoquan to Possum), 2013 (Occoquan to Ox) and Line 2042 (Ogden Martin to Ox) will be rearranged to terminate in the rebuilt Occoquan station. Line 215(Hayfield to Possum Point) will need to be rearranged to fly over Occoquan.</p> <p>The addition of the new 500-230kV transformer at Occoquan creates two generation deliverability flowgates that need to be addressed as part of this Proposal. Flowgate of Line 2036 (Glebe to Radnor Heights) requires the installation of a new breaker-and-half row at Ox Substation to allow for Line 237 (Braddock-Possum Point) to be cut and terminated at OX substation. Flowgate of Line 2013 (Ox to Occoquan) requires the uprate of the line to a summer rating of 1046 MVA by fully reconductoring the line and upgrading applicable line equipment (CTs and switches)</p> <p>Additionally, Ox Breaker (201342) is overdutied based on the previous work in this Proposal and will need to be upgraded to a 63kA breaker.</p> | <p>75.39</p> | <p>N</p> |

Final Review and Recommendation

PJM completed a final review of the proposals listed in **Table 2** above based on data and information provided by the project sponsors as part of their submitted proposals. This review and screening included the following preliminary analytical quality assessment:

- *Initial Performance Review* – PJM evaluated whether or not the project proposal solved the required reliability criteria violation drivers posted as part of the open solicitation process.
- *Initial Planning Level Cost Review* – PJM reviewed the estimated project cost submitted by the project sponsor and any relevant cost containment mechanisms submitted as well.
- *Initial Feasibility Review* – PJM reviewed the overall proposed implementation plan to determine if the project, as proposed, can feasibly be constructed.
- *Additional Benefits Review* – PJM reviewed information provided by the proposing entity to determine if the project, as proposed, provides additional benefits such as the elimination of other needs on the system

Initial performance reviews yielded the following results:

1. Proposal No. 57 as submitted solves the reliability violations for Cluster 6.
2. Proposal No. 319 and proposal No. 637 submitted also appear to solve the reliability violations posted to the 2021 RTEP Window No. 1. However both required additional scope (included in the proposal) to address new violations.
3. No creation of additional reliability criteria violations.

PJM presented a First Read and Second Read of the Initial Performance Review and Recommended Solution at the November 2, 2021, and November 30, 2021, TEAC meetings, respectively. No stakeholder comments in opposition to the selected solution were received at those meetings nor afterward via Planning Community.

Recommended Solution

Proposal No. 57 solves the identified reliability criteria violations for cluster no. 6 and does not cause any new reliability criteria violations. In addition, of the three submitted proposals, proposal no. 57 is the most cost effective among the three proposals. Proposal No. 319 and No. 637 introduce a new flowgate of 230kV Line #2036 (Glebe to Radnor Heights) as part the analysis results. 230kV Line #2036 is a 4.93 mile long UG line that runs past Arlington National Cemetery and the Pentagon. The existing ductbank is not sufficient to achieve a rating significantly higher than the existing 354MVA rating of Line #2036. The rebuild of the duct bank would be extremely expensive, difficult to permit and construct. Proposal No. 57 results in the lowest loading on Line #2036 in the 2026 RTEP of the three proposals. Proposal No. 637 introduces an additional flowgate on 230 kV Line #2013 (Occoquan to Ox) that requires a reconductor of the 1.44 mile line while both Proposal No. 637 and No. 319 cause an overduty breaker at Ox.

Based on this information, Proposal No. 57 is the more efficient and cost effective solution in Cluster No. 6 with a projected in service date of 6/1/2026.