Generation Deactivation Notification Update

Transmission Expansion Advisory Committee
October 17, 2019
<table>
<thead>
<tr>
<th>Unit(s)</th>
<th>Transmission Zone</th>
<th>Requested Deactivation Date</th>
<th>PJM Reliability Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frackville Wheelabrator 1</td>
<td>PPL</td>
<td>3/01/2020</td>
<td>Reliability analysis complete. No violation identified</td>
</tr>
<tr>
<td>(45.1 MW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buchanan 1 and 2 (80 MW)</td>
<td>AEP</td>
<td>06/01/2023</td>
<td>Reliability analysis complete. New baselines resolve identified impacts. Units can retire as scheduled</td>
</tr>
<tr>
<td>Osage (50 MW)</td>
<td>APS</td>
<td>01/01/2020</td>
<td>Reliability analysis Underway.</td>
</tr>
</tbody>
</table>
Problem Statement: N-1-1 thermal
AEP FERC 715 violation

Garden Creek – Whetstone 69 kV line is overloaded for the following scenarios.

- Single contingency loss of Richland - Broadford 138 kV line followed by single contingency loss of the Garden Creek - Shack Mills 138 kV line.
- Single contingency loss of Richlands - Broadford 138 kV line followed by single contingency loss of the Whitewood – Hales Branch 138 kV line.

Recommended Solution:
- Rebuild the Garden Creek - Whetstone 69 kV line (4.65 mile) (b3139).
- Existing Scope Rating: 44 MVA SN / 44 MVA SE
- New Scope Rating: 102 MVA SN / 142 MVA SE

Required IS Date: 06/01/2023
Projected IS Date: 06/01/2023
Estimated Project Cost: $14M
Problem Statement: N-1-1 thermal
AEP FERC 715 violation

Whetstone - Knox Creek - Coal Creek 69kV line is overloaded for the following scenarios:

- Single contingency loss of Richlands - Broadford 138 kV line followed by single contingency loss of the Whitewood – Hales Branch 138 kV line.


Recommended Solution:

- Rebuild the Whetstone - Knox Creek 69 kV line (3.1 mile) (b3140).
- Rebuild the Knox Creek –Coal Creek 69 kV line (2.9 mile) (b3141).

- Existing Scope Rating: 44 MVA SN / 44 MVA SE
- New Scope Rating: 102 MVA SN / 142 MVA SE

Required IS Date: 06/01/2023
Projected IS Date: 06/01/2023

Estimated Project Cost: $9M – b3140
$9M – b3141
Second Read
Problem Statement: Missing Scope

• The need for B3064 (DLCO) was confirmed for FE reinstatement - Expand Elrama 138 kV substation to loop in the existing USS Steel Clariton - Piney Fork 138 kV line.

• FE identified the missing scope of the projects driven by DLCO’s B3064.

Recommended Solution:

• B3064.2, B3064.3 (APS) - Upgrade line relaying at Piney Fork and Bethel Park for Piney Fork – Elrama 138 kV line and Bethel Park – Elrama 138 kV line.

• Required IS Date: 06/01/2021
• Projected IS Date: 06/01/2021

• Estimated Project Cost: $0.6M
• First Read TEAC date: 09/12/19
Problem Statement: Generation Deliverability

- Mitchell – Elarma 138 kV line is overloaded for the for the tower contingency of tripping two Route 51 – Elarma 138 kV lines.

Recommended Solution:

- B3015.8 (APS) – Re-establish work of B3015.6 (canceled 2/2019) - upgrade terminal equipment at Mitchell for Mitchell – Elarma 138 kV line.

Existing Scope Rating: SN 498 MVA / SE 600 MVA
New Scope Rating: SN 790 MVA / SE 838 MVA

- Required IS Date: 06/01/2021
- Projected IS Date: 06/01/2021

- Estimated Project Cost: $2M
- First Read TEAC date: 09/12/19
• V1 - 10/14/2019 - Original slides posted
• V2 - 10/16/2019 - Slide 2: Correct location of Buchanan units updated, Slide 4 and 5: baseline #s added
• V3 - 10/29/2019 -Slide 4 and 5: New Scope rating (SE) updated