Generation Deactivation Notification Update

Transmission Expansion Advisory Committee
September 12, 2019
Generation Deactivations for 2018-2019
## Deactivation Status

<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 (45.1 MW)</td>
<td>PPL</td>
<td>3/01/2020</td>
<td>Reliability analysis underway</td>
</tr>
<tr>
<td>Buchanan 1 and 2 (80 MW)</td>
<td>AEP</td>
<td>06/01/2023</td>
<td>Reliability analysis underway</td>
</tr>
<tr>
<td>Occoquan 1 (3.2 MW)</td>
<td>Dominion</td>
<td>11/07/2019</td>
<td>Reliability analysis complete. No violations identified.</td>
</tr>
</tbody>
</table>
Baseline Justifications Due to FirstEnergy Reinstatements of Davis Besse 1, Perry 1, and Sammis 5-7
FirstEnergy Deactivation Timeline

03/28/2018: First Energy announces deactivation of Davis Besse 1, Perry 1, and Beaver Valley 1-2

08/29/2018 First Energy announces deactivation of Eastlake 6, Sammis 5-7, Sammis Diesel, and Mansfield 1-3

07/29/2019 First Energy announces reinstatement of Davis Besse 1, Perry 1, and Sammis 5-7
03/28/2018: First Energy announces deactivation of **Davis Besse 1, Perry 1, and Beaver Valley 1-2**

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FirstEnergy Reinstatement Impact

- "Pending resolution" baseline upgrades are not needed by deactivations, but may be required upon completion of baseline re-tools or may be relied on by applicable queue projects:
  - AD2-168 → AE1-083 can gain benefits from baselines upgrades identified prior to 8/29/2018.
  - AE1-084 → AF1-074 can gain benefits from all baseline upgrades identified prior to 7/29/19.
- ISA must be signed to lock "pending resolution" baseline upgrades into base case.
- "Pending resolution" baseline upgrades may not be needed as proposed. If a lesser upgrade mitigates queue projects’ violation up to AF1-074 or baseline needs, then a lesser upgrade will be identified to replace the existing upgrade.
• Status
  – No AD2 projects benefit from any identified baseline upgrades
  – AE1 and AE2 projects were identified as gaining benefit from baselines upgrades
  – AF1 analysis pending

• Schedule
  – AE2 System Impact Study results anticipated February 2020
  – AF1 Feasibility Study results anticipated January 2020
The impacts and required upgrades were presented on 06/07/2018 and 11/08/2018 for the following deactivations units respectively.

**FE nuclear deactivation**
- 05/31/2020: Davis Besse 1 (896 MW)
- 05/31/2021: Perry 1 (1247 MW) and Beaver Valley 1 (909 MW)
- 10/31/2021: Beaver Valley 2 (902 MW)

**FE Coal deactivation**
- 06/01/2021: Bruce Mansfield (2490 MW), Sammis Diesel (13 MW), Eastlake 6 (24 MW)
- 06/01/2022: Sammis 5, 6, and 7 (1491 MW)

- The scope change for B3012 was presented on 05/16/2019 for a constructing a new Elarma – Route 51 138 kV #3 line.
The impacts and required upgrades were re-evaluated due to the reinstatement for the following units.

- Davis Besse 1 (896 MW)
- Perry 1 (1247 MW)
- Sammis 5, 6, 7 (1491 MW)

The following topology baseline projects remain required for the identified violations - $183 million.

- B3011.1 through B3011.5 (APS)
  - Construct new Route 51 substation, and connect 10 138 kV lines into this new substation.
  - Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #1 138 kV line.
  - Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #2 138 kV line.
  - Route 51 - Yukon 138 kV Line Ckt 3 - Upgrade Terminal Equipment.
  - Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #4 138 kV line.)
• B3015.1 through B3015.7 (DLCO)
  – Construct new Elrama 138 kV substation and connect 7 138 kV lines to new substation.
  – Reconductor Elrama to Wilson 138 kV line.
  – Reconductor Dravosburg to West Mifflin 138 kV line.
  – Run new conductor on existing tower to establish the new Dravosburg-Elrama (Z-75) circuit.
  – Reconductor Elrama to Mitchell 138 kV line (AP and DLCO).
  – Route 51 - Yukon 138 kV Line Ckt 3 - Upgrade Terminal Equipment.
  – Reconductor Wilson to West Mifflin 138 kV line.

• B3012.1, B3012.2 (APS and DLCO) – Construct two new ties from a new FE substation to a new Duquesne substation by using a common structure.

• B3006 (APS) - Replace four Yukon 500/138 kV transformers with three transformers with higher rating and reconfigure 500 kV bus

• B3064 (DLCO) - Expand Elrama 138 kV substation to loop in the existing USS Steel Clariton - Piney Fork 138 kV line.
The remaining baseline projects remain required for the identified violations - $30 million.

- B3007.1, B3007.2 (APS and PENELEC) - Reconduct the Blairsville East to Social Hall 138 kV line and upgrade terminal equipment.
- B3008 (PENELEC) - Upgrade Blairsville East 138/115 kV transformer terminals.
- B3009 (PENELEC) - Upgrade Blairsville East 115 kV terminal equipment.
- B3084 (DLCO) - Reconduct the Oakland - Panther Hollow 138 kV line.
- B3085 (AEP) - Reconduct Kammer - George Washington 138 kV line (~0.08 miles). Replace the wave trap at Kammer 138 kV.
The following 2 baseline projects remain due to work progression - $160K.

- B3016 (PENELEC) - Upgrade terminal equipment at Corry East 115 kV to increase rating of Four Mile to Corry East 115 kV line. Replace bus conductor.

- B3024 (PENELEC) - Upgrade terminal equipment at Corry East 115 kV to increase rating of Warren to Corry East 115 kV line. Replace bus conductor.
Newly Identified baseline projects

**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.

*Estimated Project Cost: $0.6M*
*Required IS Date: 06/01/2021*
*Projected IS Date: 06/01/2021*


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

*Estimated Project Cost: $2M*
*Required IS Date: 06/01/2021*
*Projected IS Date: 06/01/2021*
• Baseline projects highlighted in green or red on slide 6-7 remain required.
• Newly identified projects are highlighted in yellow on slide 6-7
• Baseline projects highlighted in white on slide 6-7 are pending.
• All pending baseline projects are on hold.
• Final decision on canceling baseline projects will occur after completion of all required RTEP analysis and execution of ISAs for affected generation queue projects.
• Key Schedule
  - 2024 RTEP retool will be performed in the beginning of October 2020.
  - AF1 Feasibility Study results anticipated January 2020.
Second Read
Bruce Mansfield – 1491 MW

- The projected deactivation date has changed from 06/01/2021 to 11/07/2019.
- All impacts and associated baseline projects were presented on 11/08/2018.
- FE recently informed of the necessary substation work associated with deactivating the unit – B3124 for separating metering, station power, and communication.

- **Estimated Cost:** $0.4M
- **Projected IS Date:** 12/31/2020
- **Original TEAC Date:** 07/11/2019
Bay Shore 2, 3, and 4 – 495 MW

- The actual deactivation date was 09/01/2012.
- All impacts and associated baseline projects were initially presented on 09/08/2010.
- FE recently informed of the necessary substation work associated with deactivating the unit – B3127.
  - Install new switchyard power supply to separate from existing generating station power service.
  - Separate all communications circuits.
  - Separate metering circuits from switchyard and generation station.

- Estimated Cost: $1.5M
- Projected IS Date: 12/31/2021
- Original TEAC Date: 7/11/2019
R. Paul Smith 3 and 4 – 115 MW

- The actual deactivation date was 09/01/2012.
- All impacts and associated baseline projects were initially presented on 09/08/2010.
- FE recently informed of the necessary substation work associated with deactivating the unit – B3128 for relocating 34.5 kV lines from generating station roof.

- **Estimated Cost**: $0.4M
- **Projected IS Date**: 12/31/2020
- **Original TEAC Date**: 07/11/2019
Conesville 4 – 780 MW

- The projected deactivation date is 09/01/2020.
- All impacts and associated baseline projects were presented on 03/07/2019.
- AEP recently informed of the necessary substation work associated with deactivating the unit – B3129:
  - Remove line leads to generating units
  - Separate and reconfigure protection schemes.
  - Transfer plant AC service to existing station service feeds in the switchyard.

- **Estimated Cost:** $1.5M
- **Projected IS Date:** 12/31/2020
- **Original TEAC Date:** 07/11/2020
- V1 - 09/06/2019 - Original slides posted
- V2 - 09/11/2019 – Summary slide #16 added
- V3 – 09/30/2029 – Slides from 5 to 15 for Baseline Justifications Due to FirstEnergy Reinstatements of Davis Besse 1, Perry 1, and Sammis 5-7 replaced for the better clarifications.