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January 10, 2024

Honorable Debbie-Anne Reese, Acting Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E., Room 1A  
Washington, D.C. 20426

*Re: PJM Interconnection, L.L.C., Docket No. ER24-843-000  
Revisions to Incorporate Cost Responsibility Assignments for Regional Transmission  
Expansion Plan Baseline Upgrades; **30-Day Comment Period Requested***

Dear Secretary Bose:

In accordance with PJM Open Access Transmission Tariff (“Tariff”), Schedule 12<sup>1</sup> and Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. (“Operating Agreement”), Schedule 6, section 1.6, and pursuant to section 205 of the Federal Power Act,<sup>2</sup> PJM Interconnection, L.L.C. (“PJM”) hereby submits amendments to Tariff, Schedule 12-Appendices A and C to incorporate cost responsibility assignments for 215 baseline upgrades in the recent update to the Regional Transmission Expansion Plan (“RTEP”) approved by the PJM Board of Managers (“PJM Board”) on December 11, 2023.<sup>3</sup> PJM requests that the revised Tariff sections become effective on April 9, 2024, which is 90 days after the date of this filing.

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<sup>1</sup> All capitalized terms that are not otherwise defined herein have the meaning as defined in the Tariff, Operating Agreement, and Reliability Assurance Agreement among Load Serving Entities in the PJM Region.

<sup>2</sup> 16 U.S.C. § 824d.

<sup>3</sup> In February 2023, PJM opened 2022 RTEP Window 3 in order to develop robust, holistic and expandable solutions that address 2027/28 baseline violations associated with local constraints; regional constraints; reactive power needs; and the cumulative impact of generation changes and deactivations. See PJM RTEP - 2022 RTEP Proposal Window #3, Problem Statement and Requirements, <https://www.pjm.com/-/media/planning/rtep-dev/expansion-plan-process/ferc-order-1000/rtep-proposal-windows/2022-rtep-window-3/2022-rtep-window-3-without-study-files-v7.ashx> (“2022 Window 3 Problem Statement”). In the 2022 Window 3 Problem Statement, PJM identified a list of criteria violations and the impacted facilities, and sought solutions to address such criteria violations (collectively, the “Window 3 Needs”). PJM received 72 proposals from 10 entities, and ultimately recommended to the PJM Board a comprehensive set of solutions to address the Window 3 Needs that includes components of proposals submitted by seven incumbent transmission owners and non-incumbent transmission developers, which are referred to herein as the “Window 3 Projects.” See PJM Interconnection, L.L.C., Constructability & Financial Analysis Report, 2022 RTEP

## I. DESCRIPTION OF FILING

### A. Tariff, Schedule 12 Requirements to Designate Cost Responsibility Assignments

Pursuant to Tariff, Schedule 12, PJM is required to designate in Tariff, Schedule 12-Appendix A, cost responsibility assignments for all transmission enhancements and expansions included in the RTEP after February 1, 2013.<sup>4</sup> Similarly, Tariff, Schedule 12 requires that within 30 days of the PJM Board's approval of each RTEP, or addition to the RTEP, PJM shall designate in Tariff, Schedule 12-Appendix A, and in a report filed with the Federal Energy Regulatory Commission ("Commission"), the Responsible Customers<sup>5</sup> that will be subject to charges related to transmission enhancements and expansions included in the RTEP.<sup>6</sup>

Additionally, Schedule 12-Appendix C is used to assign cost responsibility for State Agreement Public Policy Projects that are included in PJM's RTEP, in accordance with the Operating Agreement, Schedule 6, section 1.5.9 (*i.e.*, the State Agreement Approach process),

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Window 3 (Nov. 17, 2023), <https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-2022-rtep-window-3-constructability--financial-analysis-report.ashx>; PJM Interconnection, L.L.C., Reliability Analysis Report, 2022 RTEP Window 3 (Dec. 8, 2023), <https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-2022-rtep-window-3-reliability-analysis-report.ashx>. On December 11, 2023, the PJM Board approved the Window 3 Projects, which include baseline upgrades with an estimated overall RTEP net increase of approximately \$5,085.85 million, including the following: (i) PJM reliability criteria expansions and enhancements totaling approximately \$5,142.98 million; (ii) scope and cost changes to existing RTEP baseline projects resulting in a net decrease of approximately \$32.17 million; (iii) cancellation of existing approved RTEP baseline projects resulting in a net decrease of approximately \$24.96 million; and (iv) two RTEP baseline projects that are for tracking purposes only and not cost allocated. See PJM Interconnection, L.L.C., Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board (Dec. 2023), <https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-pjm-teac-board-whitepaper-december-2023.ashx>.

<sup>4</sup> *PJM Interconnection, L.L.C.*, 142 FERC ¶ 61,214, at PP 411, 448 (2013) (accepting revisions to Tariff, Schedule 12 modifying the cost allocation methodologies for transmission projects included in the RTEP, effective February 1, 2013).

<sup>5</sup> Responsible Customers include "the customers using Point-to-Point Transmission Service and/or Network Integration Transmission Service and Merchant Transmission Facility owners that will be subject to each such Transmission Enhancement Charge." See Tariff, Schedule 12(b)(viii).

<sup>6</sup> *Id.*; see also Operating Agreement, Schedule 6, section 1.6.

which are not Supplemental Projects, and Tariff, Schedule 12(b)(xii)(B).<sup>7</sup> As relevant here, Schedule 12-Appendix C, section (1) includes the cost allocation methodology for transmission projects contemplated by the State Agreement Approach Agreement between PJM and the New Jersey Board of Public Utilities (“NJBPU”), designated as Rate Schedule FERC No. 49 (the “SAA Agreement”) and the specific cost responsibility assignment by baseline identification number, including the description of the specific baseline project.<sup>8</sup>

Tariff, Schedule 12 further provides that customers designated to be responsible for assignments of costs that PJM files with the Commission shall have 30 days from the date of such filing to submit comments regarding the proposed cost responsibility assignments.<sup>9</sup>

Accordingly, PJM hereby submits amendments to Tariff, Schedule 12-Appendix A and Schedule 12-Appendix C to include the new cost responsibility assignments for RTEP upgrades approved by the PJM Board on December 11, 2023. The revised Tariff sections containing new language, including new cost responsibility assignments, are reflected in redline and clean format in Attachments B and C, respectively, to this filing.<sup>10</sup>

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<sup>7</sup> *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,178 (2022) (“SAA Project Cost Allocation Order”).

<sup>8</sup> The SAA Agreement was initially filed by PJM on January 27, 2022, and accepted by Commission order dated April 14, 2022, effective April 15, 2022. See *PJM Interconnection, L.L.C.*, New Jersey State Agreement Approach Agreement, Docket No. ER22-902-000 (Jan. 27, 2022) (“SAA Agreement Filing”); *PJM Interconnection, L.L.C.*, 179 FERC ¶ 61,024 (2022), *reh’g denied*, 179 FERC ¶ 62,131 (2022). On January 5, 2023, PJM submitted an executed Amended and Restated State Agreement Approach Agreement (“Amended SAA Agreement”) between PJM and the NJBPU to: (i) update the SAA Agreement to include project-specific information about the SAA Project selected by NJBPU and (ii) clarify the cost allocation methodology that will apply to the SAA Project. See *PJM Interconnection, L.L.C.*, Amended and Restated New Jersey State Agreement Approach Agreement, Rate Schedule FERC No. 49, Docket No. ER23-775-000 (Jan. 5, 2023). See also *infra* Section I.A.6.

<sup>9</sup> See Tariff, Schedule 12(b)(viii).

<sup>10</sup> The revised Tariff sections do not include any proposed rates or charges for recovery of any system upgrade costs. In accordance with Tariff, Schedule 12, recovery of the costs of such facilities that the RTEP requires Transmission Owners to construct, own and/or finance is governed by the Transmission Owners’ established rates.

## 1. Assignment of Cost Responsibility for Regional Facilities

The PJM amends Schedule 12-Appendix A to include the cost responsibility for 76 new transmission enhancements or expansions needed for reliability that will operate at or above 500 kV (“Regional Facilities”) included in the most recent update to the RTEP approved by the PJM Board on December 11, 2023.<sup>11</sup>

The cost responsibility assignment for the Regional Facilities is based on the hybrid cost allocation methodology approved by Commission order issued on March 22, 2013.<sup>12</sup> Pursuant to this hybrid methodology, 50 percent of the costs of the Regional Facilities are allocated on a region-wide postage stamp basis while the other 50 percent is allocated to specifically-identified beneficiaries.<sup>13</sup>

The region-wide, postage stamp allocations for each Transmission Owner zone are based on its annual load-ratio share using the applicable zonal loads at the time of each Transmission Owner’s annual peak load from the 12-month period ending October 31 of the year preceding the year for which the annual cost responsibility allocation is determined.<sup>14</sup> Similarly, the cost responsibility assignments for a new Regional Facility to the owners of merchant transmission

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<sup>11</sup> The Regional Facilities included in the RTEP upgrades are b3800.1; b3800.2; b3800.3; b3800.4; b3800.5; b3800.6; b3800.7; b3800.8; b3800.27; b3800.28; b3800.29; b3800.31; b3800.32; b3800.33; b3800.34; b3800.35; b3800.36; b3800.37; b3800.38; b3800.39; b3800.40; b3800.41; b3800.42; b3800.43; b3800.44; b3800.45; b3800.46; b3800.47; b3800.48; b3800.49; b3800.50; b3800.51; b3800.100; b3800.101; b3800.102; b3800.103; b3800.104; b3800.105; b3800.106; b3800.107; b3800.108; b3800.113; b3800.115; b3800.116; b3800.117; b3800.118; b3800.119; b3800.120; b3800.121; b3800.122; b3800.123; b3800.124; b3800.200; b3800.212; b3800.213; b3800.214; b3800.225; b3800.240; b3800.241; b3800.243; b3800.306; b3800.307; b3800.310; b3800.311; b3800.312; b3800.313; b3800.314; b3800.315; b3800.336; b3800.344; b3800.346; b3800.350; b3800.353; b3800.354; b3800.356; and b3800.357.

<sup>12</sup> *PJM Interconnection, L.L.C.*, 142 FERC ¶ 61,214, at PP 411, 448.

<sup>13</sup> Schedule 12 provides different methodologies to identify and allocate costs to specific beneficiaries depending on whether the project is designed to address one or more reliability or operational adequacy and performance issues (“Reliability Projects”) or to relieve one or more economic constraints (*i.e.*, “Economic Projects”). Tariff, Schedule 12(b)(i)(A)(2).

<sup>14</sup> See Tariff, Schedule 12(b)(i)(A).

facilities with Firm Transmission Withdrawal Rights are based on the merchant transmission facilities' annual peak load (not to exceed actual Firm Transmission Withdrawal Rights set forth in their respective Interconnection Service Agreements) from the 12-month period ending October 31 of the year preceding the year for which the annual cost responsibility allocation is determined. The annual peak loads used to determine the new annual cost responsibility assignments for the Regional Facilities included in this filing are the 2022 peak loads.<sup>15</sup>

The Regional Facilities are reliability projects; therefore, the second 50 percent of the costs of the Regional Facilities are allocated using the “solution-based” distribution factor, or DFAX, methodology set forth in Tariff, Schedule 12(b)(iii). The solution-based DFAX methodology evaluates the projected relative use on the new facility by the load of each transmission zone or merchant transmission facility and allocates costs based on such usage. More specifically, to determine cost responsibility under the DFAX methodology, based on a computer model of the electric network and using power flow modeling software, PJM calculates distribution factors, represented as decimal values or percentages, which express the portions of a transfer of energy from a defined source to a defined sink that will flow across a particular transmission facility or group of transmission facilities. These distribution factors represent a measure of the relative use of the specific transmission facility by the load of each transmission zone or merchant transmission facility, as determined by a power flow analysis.<sup>16</sup>

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<sup>15</sup> See *PJM Interconnection, L.L.C.*, 2022 Annual RTEP Cost Allocation Update, Docket No. ER22-702-000 (Dec. 21, 2021) (“2022 Update Filing”). See also *PJM Interconnection, L.L.C.*, 178 FERC ¶ 61,113, *reh'g denied*, 179 FERC ¶ 62,043 (2022) (accepting 2022 Update Filing).

<sup>16</sup> See Tariff, Schedule 12(b)(iii).

**2. Cost Responsibility Assignments for Upgrades Included in the RTEP that are Lower Voltage Facilities Needed for Reliability and With Estimated Costs Greater than \$5 Million**

Consistent with Tariff, Schedule 12, PJM submits amendments to the Tariff, Schedule 12-Appendix A to include the cost responsibility assignments for transmission enhancements or expansions that are not Regional Facilities (“Lower Voltage Facilities”).<sup>17</sup> On December 11, 2023, the PJM Board approved 111 enhancements or expansions, which are included in this filing, that are Lower Voltage Facilities required to address reliability needs for which PJM applied the solution-based DFAX analysis described in Tariff, Schedule 12(b)(iii).<sup>18</sup>

**3. Cost Responsibility Assignments that Address Spare Parts, Replacement Equipment and Circuit Breakers Independently Included in the RTEP**

Tariff, Schedule 12(b)(iv)(C), provides that cost responsibility for circuit breakers and associated equipment independently included in the RTEP and not a part of the design specifications of a transmission element of a Required Transmission Enhancement shall be assigned to the zone of the owner of the circuit breakers and associated equipment, if the owner of the circuit breakers and associated equipment is a Transmission Owner listed in Tariff,

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<sup>17</sup> See Tariff, Schedule 12(b)(ii)(A) (“If the Lower Voltage Facility is a Reliability Project, [PJM] shall use the DFAX analysis described in subsection (b)(iii) . . . of this Schedule 12 as applicable;”). As defined in Tariff, Schedule 12(b)(ii), Lower Voltage Facilities include transmission enhancements and expansions that are not Regional Facilities or Necessary Lower Voltage Facilities.

<sup>18</sup> The Lower Voltage Facilities are b3800.10; b3800.11; b3800.12; b3800.13; b3800.14; b3800.15; b3800.16; b3800.17; b3800.18; b3800.19; b3800.20; b3800.21; b3800.22; b3800.23; b3800.24; b3800.25; b3800.30; b3800.109; b3800.110; b3800.111; b3800.112; b3800.114; b3800.125; b3800.126; b3800.127; b3800.201; b3800.202; b3800.203; b3800.204; b3800.205; b3800.206; b3800.207; b3800.208; b3800.209; b3800.210; b3800.211; b3800.215; b3800.216; b3800.217; b3800.218; b3800.226; b3800.227; b3800.228; b3800.229; b3800.230; b3800.231; b3800.232; b3800.233; b3800.234; b3800.238; b3800.239; b3800.242; b3800.244; b3800.245; b3800.300; b3800.301; b3800.302; b3800.303; b3800.304; b3800.305; b3800.308; b3800.309; b3800.316; b3800.317; b3800.318; b3800.319; b3800.320; b3800.321; b3800.322; b3800.323; b3800.324; b3800.325; b3800.326; b3800.327; b3800.328; b3800.329; b3800.330; b3800.331; b3800.332; b3800.333; b3800.337; b3800.338; b3800.339; b3800.340; b3800.341; b3800.342; b3800.343; b3800.345; b3800.347; b3800.348; b3800.349; b3800.351; b3800.352; b3800.355; b3800.358; b3800.359; b3800.360; b3800.361; b3800.362; b3800.363; b3800.364; b3800.365; b3800.366; b3800.367; b3800.368; b3800.369; b3800.370; b3800.371; b3800.372; b3800.373; and b3800.374.

Attachment J.

PJM proposes revisions to Tariff, Schedule 12-Appendix A to include cost responsibility assignment for 25 circuit breakers and associated equipment independently included in the RTEP that are not part of the design specifications of a transmission element of a Required Transmission Enhancement.<sup>19</sup> Therefore, consistent with Tariff, Schedule 12(b)(iv)(C), cost responsibility for such enhancements shall be allocated 100 percent to the zone of the Transmission Owner of the circuit breaker and associated equipment.

**4. Cost Responsibility Assignments for Incremental Multi-Driver Project**

PJM develops Multi-Driver Projects in the RTEP process through two approaches: (i) Incremental Method and (ii) Proportional Method.<sup>20</sup> As relevant here, under the Incremental Method, PJM adds drivers to expand incrementally upon a single-driver solution already included in the RTEP. Specifically, PJM identifies a single-driver solution, and, based on further analysis, will determine whether to expand or enhance the single-driver solution incrementally to address a combination of drivers. If the Multi-Driver Project is a more efficient or cost effective solution for the combined drivers, PJM will replace the single-driver solution with the incremental solution.<sup>21</sup> A Multi-Driver Project may contain an enhancement or expansion that addresses a state Public Policy Requirement component if it meets the requirements set forth in the Operating Agreement, Schedule 6, section 1.5.9(a) (*i.e.*, the State Agreement Approach) and its cost

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<sup>19</sup> The enhancements and expansions allocated pursuant to Tariff, Schedule 12(b)(iv) include the following: b3800.219; b3800.220; b3800.221; b3800.222; b3800.223; b3800.224; b3800.235; b3800.236; b3800.237; b3800.334; b3800.335; b3800.401; b3800.402; b3800.403; b3800.404; b3800.405; b3800.406; b3800.407; b3800.408; b3800.409; b3800.410; b3800.411; b3800.412; b3800.413; and b3800.414.

<sup>20</sup> See Operating Agreement, Schedule 6, section 1.5.10(h). A Multi-Driver Project is “a transmission enhancement or expansion that addresses more than one of the following: reliability violations, economic constraints or State Agreement Approach initiatives.” Operating Agreement, Definitions M-N.

<sup>21</sup> See Operating Agreement, Schedule 6, section 1.5.10(h).

allocations are established consistent with the Tariff, Schedule 12(b)(xii)(B).<sup>22</sup>

Tariff, Schedule 12(b)(xiv)(B) provides for the methodology for allocating cost responsibility for Incremental Multi-Driver Projects.<sup>23</sup> Specifically, for Incremental Multi-Driver Projects, the initial apportionment of benefits identifies the costs of the single driver of the project before it was upgraded to accommodate one or more additional drivers, and only the incremental costs of the expansion or modification of the single driver project resulting in the Incremental Multi-Driver Project will be assigned to the beneficiaries of the additional driver or drivers.<sup>24</sup>

PJM proposes revisions to Tariff, Schedule 12-Appendices A and C to include cost responsibility assignments for one (1) Incremental Multi-Driver Project.<sup>25</sup> Specifically, the PJM Board initially approved project b3737.47 as a component of the State Agreement Public Policy Project selected by the NJBPU pursuant to the State Agreement Approach process.<sup>26</sup> Consistent

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<sup>22</sup> Operating Agreement, Schedule 6, section 1.5.10(b). Tariff, Schedule 12(b)(xii)(B) sets forth rules governing the allocation of costs for State Agreement Public Policy Projects, which are enhancements or expansions proposed pursuant to the State Agreement Approach process, which are not Supplemental Projects.

<sup>23</sup> An Incremental Multi-Driver Project is a more efficient or cost effective solution that expands or enhances a proposed single driver solution to include one or more additional component(s) to address a combination of reliability, economic and/or public policy drivers. *See* Operating Agreement, Schedule 6, section 1.5.10(h). A Proportional Multi-Driver Project is a more efficient or cost effective solution that combines separate solutions that address reliability, economics and/or public policy needs into a single transmission enhancement or expansion into one Multi-Driver Project. *See id.*

<sup>24</sup> *See* Tariff, Schedule 12(b)(xiv)(B) (“[PJM] shall assign cost responsibility for Incremental Multi-Driver Projects ... using the same methodology described in section (b)(xiv)(A)(1) above treating the estimated cost of modifying the original project as if it were the estimated cost of a separate project included in a Proportional Multi-Driver Project”). Tariff, Schedule 12(b)(xiv)(A)(1) provides that cost responsibility for Proportional Multi-Driver Projects shall be assigned in proportion to the relative percentage benefit that each driver (*e.g.*, reliability, economic and/or public policy requirements) of the Multi-Driver Project addresses. The contribution of each driver is identified in terms of 100 percent for all such drivers at the time each Proportional Multi-Driver Project is submitted to the PJM Board for approval and inclusion in the RTEP. The percentage contribution of each driver is then based on the ratio of the estimated cost of each project that the Multi-Driver Project replaces to the total of the estimated costs of all projects combined into the Multi-Driver Project.

<sup>25</sup> The Incremental Multi-Driver Project is b3737.47.

<sup>26</sup> *See PJM Interconnection, L.L.C., Revisions to Incorporate Cost Responsibility Assignments for Regional Transmission Expansion Plan Baseline Upgrades*, Docket No. ER23-779-000 (Jan. 5, 2023) (“January 2023 Filing”); *PJM Interconnection, L.L.C., 183 FERC ¶ 61,005 (2023) (accepting January 2023 Filing)*. *See also PJM Interconnection, L.L.C., Amended and Restated New Jersey State Agreement Approach Agreement, Rate Schedule*

with Tariff, Schedule 12(b)(xii)(B), the Commission accepted the cost allocation methodology applicable to the NJBPU State Agreement Public Policy Project by order dated December 2, 2022.<sup>27</sup> Subsequently, during PJM’s evaluation of proposed solutions submitted as part of 2022 Window # 3,<sup>28</sup> PJM identified a more efficient or cost effective solution that would also address reliability violations for which PJM sought solutions through 2022 Window # 3. PJM therefore replaced the single-driver b3737.47 State Agreement Public Policy Project with the Incremental Multi-Driver Project solution b3737.47, which solves both the NJBPU public policy need pursuant to the State Agreement Approach process as well as the reliability needs identified as part of 2022 Window # 3.

Consistent with Tariff, Schedule 12(b)(xiv)(B), PJM proposes revisions to Tariff, Schedule 12-Appendices A and C to include cost responsibility assignments for the Incremental Multi-Driver Project.<sup>29</sup>

### **B. Cost Responsibility Assignment Summary**

For informational purposes, PJM also includes, as Attachment A to this filing, a Cost Responsibility Assignment Summary for the enhancements or expansions approved by the PJM Board on December 11, 2023. In addition to specifying the cost responsibility assignments for the enhancements or expansions, the summary sheets provide the criteria violation and test, a

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FERC No. 49, Docket No. ER23-775-000 (Jan. 5, 2023); *PJM Interconnection, L.L.C.*, Delegated Letter Order (Mar. 6, 2023).

<sup>27</sup> *PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,178 (2022) (“SAA Project Cost Allocation Order”).

<sup>28</sup> *See supra* n.3.

<sup>29</sup> The Designated Entity for b3737.47 is Transource, LLC. PJM proposes to include b3737.47 in both Schedule 12 – Appendix A and Schedule 12 – Appendix C since the Incremental Multi-Driver Project includes both State Agreement Approach public policy and reliability drivers. The costs for the Incremental Multi-Driver Project is assigned to each driver as follows: Public Policy driver (73.27%) and Reliability driver (26.73%).

description of the upgrade, in-service date, estimated upgrade costs, and the entity designated with construction responsibility for each enhancement or expansion.

## **II. COMMENT PERIOD**

Tariff, Schedule 12(b)(viii) provides that customers designated to be responsible for assignments of cost responsibility shall have 30 days from the date of such filing to seek review regarding the proposed cost responsibility assignments. Consistent with this provision, PJM requests that the comment date for this filing be set as February 9, 2024, 30 days from the date of this filing. To accommodate such a comment date, PJM requests an effective date of April 9, 2024 (90 days from the date of this filing) for all revised Tariff sections submitted in this docket.<sup>30</sup>

## **IV. DOCUMENTS ENCLOSED**

PJM encloses the following:

1. This transmittal letter;
2. Attachment A – Cost Responsibility Assignment Summary Sheets;
3. Attachment B – Revised Tariff, Schedule 12-Appendix A and Tariff, Schedule 12-Appendix C (in redlined form); and
4. Attachment C – Revised Tariff, Schedule 12-Appendix A and Tariff, Schedule 12-Appendix C (in clean form).

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<sup>30</sup> See, e.g., *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER23-364-000 (Nov. 10, 2022) (granting extension of time for filing protests or comments to accommodate Tariff, Schedule 12); *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER22-2653-000 (Aug. 16, 2022) (same); *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER22-1397-000 (Mar. 23, 2022) (same); *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER22-788-000 (Jan. 13, 2022) (same); *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER22-135-000 (Oct. 20, 2021) (same); *PJM Interconnection, L.L.C.*, Errata Notice of Extending Comment Period, Docket No. ER21-2774-000 (Sept. 2, 2021) (same).

## V. CORRESPONDENCE AND COMMUNICATIONS

Correspondence and communications with respect to this filing should be sent to the following persons:

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## VI. SERVICE

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,<sup>31</sup> PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: <https://www.pjm.com/library/filing-order> with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region<sup>32</sup> alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the FERC's eLibrary website located at the following link: <http://www.ferc.gov/docs-filing/elibrary.asp> in accordance with the Commission's regulations and Order No. 714.

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<sup>31</sup> See 18 C.F.R. §§ 35.2(e) and 385.2010(f)(3) (2022).

<sup>32</sup> PJM already maintains, updates and regularly uses e-mail lists for all PJM Members and affected state commissions.

## VII. CONCLUSION

For the reasons set forth above, PJM respectfully requests that the Commission issue an order accepting the revised Tariff sections to be effective on April 9, 2024.

Respectfully submitted,

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# **Attachment A**

Cost Responsibility Assignment Summary Sheets

## **Baseline Upgrade b3737.47**

- Overview of Reliability Problem
  - Criteria Violation: Overload of Peach Bottom – Conastone 500 kV line, Peach Bottom – Furnace Run 500 kV line, Furnace Run – Conastone 230 kV No. 1 and No. 2 Lines and Furnace Run 500/230 kV No. 1 and No. 2 Transformers, 2022 Window 3 violations
  - Contingency: Multiple contingencies
  - Criteria Test: Winter Generator Deliverability and 2022 Window 3 tests
- Overview of Multi-Driver Solution
  - Description of Upgrade: Build a new North Delta 500 kV substation with four bay breaker and half configuration. The substation will include 12 500 kV breakers and one 500/230 kV transformers, will allow the termination of six 500 kV lines.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 104.10 M
  - Construction Responsibility: Transource
- Cost Allocation
  - The cost for this incremental multi-driver baseline upgrade is assigned to each driver as follows: Public Policy driver (73.27%) and Reliability driver (26.73%):
  - Cost allocation for Public Policy driver with State Agreement Approach (SAA) is:

Transmission Zone	2022 Peak Load (MW)	2023 SAA Allocation (%)
AEC	2,614	13.55%
JCPL	6,123	31.74%
PSEG	10,147	52.60%
RE	407	2.11%

- Cost allocation for Reliability driver: 50% of the cost is allocated by load ratio as below and 50% of the cost is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the PECO zone and therefore no distribution factor is provided, and cost is 100% allocated to PECO.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

## **Baseline Upgrade b3800.1**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a New Otter Creek 500 kV (Collinsville) switching station with two bay three breaker configuration.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 32.76 M
  - Construction Responsibility: PPL
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.71%
DPL	3,765	-1.27%	1.97%	0.36%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.68%
PEPCO	6,213	2.14%	98.03%	10.59%
PPL	7,415	-0.39%	1.97%	0.22%

## **Baseline Upgrade b3800.2**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Break the existing Three Mile Island - Peach Bottom 500 kV line and terminate into the adjacent Otter Creek 500 kV switchyard.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 7.03 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.71%
DPL	3,765	-1.27%	1.97%	0.36%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.68%
PEPCO	6,213	2.14%	98.03%	10.59%
PPL	7,415	-0.39%	1.97%	0.22%

### **Baseline Upgrade b3800.3**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: New Otter Creek (Collinsville) to Doubs 500 kV line (Otter Creek 500 kV - MD Border). Rebuild and expand existing approximately 12 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 kV and 230 kV lines.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 83.30 M
  - Construction Responsibility: PPL
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.71%
DPL	3,765	-1.27%	1.97%	0.36%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.68%
PEPCO	6,213	2.14%	98.03%	10.59%
PPL	7,415	-0.39%	1.97%	0.22%

## **Baseline Upgrade b3800.4**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: New Otter Creek to Doubs 500 kV line (MD Border - PSEG Demarcation Point). Rebuild and expand existing approximately 6 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 kV and 230 kV lines.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 11.11 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.79%
DPL	3,765	-1.27%	1.97%	0.41%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.77%
PEPCO	6,213	2.14%	98.03%	10.59%

## **Baseline Upgrade b3800.5**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace terminal equipment at Peach Bottom on Peach Bottom - TMI 500 kV line
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.00
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	-1.13%	56.12%	6.40%
BGE	6,307	4.00%	43.88%	20.32%
DPL	3,765	3.22%	43.88%	9.76%
JCPL	5,945	-1.29%	56.12%	17.57%
NEPTUNE	685	-1.11%	56.12%	1.73%
PECO	8,568	0.92%	43.88%	6.33%
PEPCO	6,213	1.49%	43.88%	7.48%
PSEG	9,685	-1.32%	56.12%	29.15%
RE	419	-1.32%	56.12%	1.26%

## **Baseline Upgrade b3800.6**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace terminal equipment at TMI on Peach Bottom - TMI 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.00
  - Construction Responsibility: ME
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.22%	96.89%	7.41%
BGE	6,307	-3.88%	96.89%	15.50%
DPL	3,765	-1.03%	96.89%	2.46%
Dominion	28,705	-2.48%	96.89%	45.08%
JCPL	5,945	2.76%	3.11%	0.80%
ME	3,077	2.27%	3.11%	0.34%
NEPTUNE	685	2.56%	3.11%	0.09%
PECO	8,568	-1.97%	96.89%	10.72%
PEPCO	6,213	-4.00%	96.89%	15.72%
PPL	7,415	1.17%	3.11%	0.43%
PSEG	9,685	2.93%	3.11%	1.39%
RE	419	2.93%	3.11%	0.06%

## **Baseline Upgrade b3800.7**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct 38 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (BGE zone portion).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 213.20 M
  - Construction Responsibility: PSEG
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.79%
DPL	3,765	-1.27%	1.97%	0.41%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.77%
PEPCO	6,213	2.14%	98.03%	10.59%

## **Baseline Upgrade b3800.8**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconfigure Doubs 500 kV station and upgrade terminal equipment to new line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 57.50 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.79%
DPL	3,765	-1.27%	1.97%	0.41%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.77%
PEPCO	6,213	2.14%	98.03%	10.59%

## **Baseline Upgrade b3800.9**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the existing Hunterstown - Carroll 115/138 kV Corridor as double circuit using 230 kV construction standards. New circuit will be operated at 230 kV. Existing circuit to remain at 115/138 kV.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.00
  - Construction Responsibility: APS
  
- Cost Allocation
  - This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.10 ~ b3800.18

### **Baseline Upgrade b3800.10**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Germantown - Lincoln 115 kV line for 230 kV double circuit construction.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 30.10 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to ME.

### **Baseline Upgrade b3800.11**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Hunterstown - Lincoln 115 kV line for 230 kV double circuit construction.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 11.48 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to ME.

## **Baseline Upgrade b3800.12**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Germantown - Carroll 138 kV line for 230 kV double circuit construction (MAIT Section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 12.16 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - Only ME transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to ME.

### **Baseline Upgrade b3800.13**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Germantown - Carroll 138 kV line to 230 kV double circuit construction (APS - PE Section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 47.31 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	0.32%	82.49%	82.49%
ME	3,077	-1.25%	17.51%	17.51%

**Baseline Upgrade b3800.14**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct new 230 kV Hunterstown - Carroll line (MAIT Section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 17.37 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	1.47%	99.86%	99.86%
ME	3,077	-2.78%	0.14%	0.14%

**Baseline Upgrade b3800.15**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct new 230 kV Hunterstown - Carroll line (APS - PE Section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.71 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	1.47%	99.86%	99.86%
ME	3,077	-2.78%	0.14%	0.14%

**Baseline Upgrade b3800.16**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Expand Carroll 230 kV substation to ring bus.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 7.62 M
  - Construction Responsibility: APS
  
- Cost Allocation

The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.47%	99.86%	99.86%
ME	3,077	-2.78%	0.14%	0.14%

**Baseline Upgrade b3800.17**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Network upgrade at Carroll 230 KV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.43 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	1.47%	99.86%	99.86%
ME	3,077	-2.78%	0.14%	0.14%

**Baseline Upgrade b3800.18**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Add a new 230 kV breaker at the Hunterstown 230 kV substation for the new Hunterstown - Carroll 230 kV termination.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.31 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.47%	99.86%	99.86%
ME	3,077	-2.78%	0.14%	0.14%

### **Baseline Upgrade b3800.19**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor Lincoln - Orrtanna 115 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.98 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to ME

## **Baseline Upgrade b3800.20**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Fayetteville - Grand Point 138 kV line – Replace line trap at Grand Point 138 kV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.40 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

### **Baseline Upgrade b3800.21**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reid - Ringgold 138 kV line – Replace line trap, substation conductor, breaker, relaying and CTs at Ringgold station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.80 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

## **Baseline Upgrade b3800.22**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install DTT relaying at Straban 115 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.67 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the ME zone and therefore no distribution factor table is provided. The cost for this baseline upgrade is allocated 100% to ME.

### **Baseline Upgrade b3800.23**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise Relay Settings at Lincoln 115 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.31 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the ME zone and therefore no distribution factor table is provided. The cost for this baseline upgrade is allocated 100% to ME

## **Baseline Upgrade b3800.24**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise Relay Settings at Germantown 115 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.47 M
  - Construction Responsibility: ME
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the ME zone and therefore no distribution factor table is provided. The cost for this baseline upgrade is allocated 100% to ME

## **Baseline Upgrade b3800.25**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Taneytown 138 kV substation terminal upgrade.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.53 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the APS zone and therefore no distribution factor table is provided. The cost for this baseline upgrade is allocated 100% to APS

### **Baseline Upgrade b3800.26**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build High Ridge 500 kV substation - Three bay breaker and half configuration.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.00
  - Construction Responsibility: BGE
  
- Cost Allocation
  - This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.27 ~ b3800.33

**Baseline Upgrade b3800.27**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Waugh Chapel side.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 33.67 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	-3.75%	59.23%	70.66%
PEPCO	6,213	-1.58%	59.23%	29.34%

**Baseline Upgrade b3800.28**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Brighton side.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 33.67 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.31%	2.59%	0.68%
BGE	6,307	-7.53%	97.41%	97.41%
Dominion	28,705	1.22%	2.59%	1.91%

**Baseline Upgrade b3800.29**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: High Ridge termination for the North Delta - High Ridge 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 33.67 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	0.49%	99.97%	2.58%
DPL	3,765	-1.74%	0.03%	0.02%
Dominion	28,705	2.47%	99.97%	59.28%
PEPCO	6,213	5.49%	99.97%	28.48%
PSEG	9,685	1.14%	99.97%	9.24%
RE	419	1.14%	99.97%	0.40%

### **Baseline Upgrade b3800.30**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: High Ridge - Install two 500/230 kV transformers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 22.11 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	5.88%	100.00%	62.75%
PEPCO	6,213	3.55%	100.00%	37.25%

**Baseline Upgrade b3800.31**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build new North Delta - High Ridge 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.36 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
DPL	3,765	1.74%	0.03%	0.01%
Dominion	28,705	-2.47%	99.97%	60.85%
PECO	8,568	0.46%	0.03%	0.01%
PEPCO	6,213	-5.49%	99.97%	29.24%
PSEG	9,685	-1.14%	99.97%	9.48%
RE	419	-1.14%	99.97%	0.41%

**Baseline Upgrade b3800.32**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build new North Delta - High Ridge 500 kV line. (Approximately 59 miles).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 407.11 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	-0.49%	99.97%	2.58%
DPL	3,765	1.74%	0.03%	0.02%
Dominion	28,705	-2.47%	99.97%	59.28%
PEPCO	6,213	-5.49%	99.97%	28.48%
PSEG	9,685	-1.14%	99.97%	9.24%
RE	419	-1.14%	99.97%	0.40%

### **Baseline Upgrade b3800.33**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace terminal equipment limitations at Brighton 500 kV - on the existing Brighton - Waugh Chapel 500 kV (5053) line or the new Brighton - High Ridge 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.13 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.31%	2.59%	0.68%
BGE	6,307	-7.53%	97.41%	86.77%
Dominion	28,705	1.22%	2.59%	1.91%
PEPCO	6,213	-0.94%	97.41%	10.64%

**Baseline Upgrade b3800.34**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 5012 (existing Peach Bottom - Conastone) (new Graceton - Conastone) 500 kV line on single circuit structures within existing right-of-way (ROW) and cut into North Delta 500 kV and Graceton 500 kV stations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 70.00 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	3.95%	74.83%	12.36%
DPL	3,765	-3.00%	25.17%	25.17%
Dominion	28,705	1.73%	74.83%	24.57%
JCPL	5,945	2.68%	74.83%	7.90%
NEPTUNE	685	2.60%	74.83%	0.88%
PENELEC	2,830	1.14%	74.83%	1.60%
PEPCO	6,213	4.00%	74.83%	12.32%
PSEG	9,685	3.03%	74.83%	14.57%
RE	419	3.03%	74.83%	0.63%

## **Baseline Upgrade b3800.35**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton PECO) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 29.86 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	-9.80%	99.96%	49.42%
DPL	3,765	3.04%	0.04%	0.01%
Dominion	28,705	-1.36%	99.96%	31.22%
JCPL	5,945	2.32%	0.04%	0.01%
PECO	8,568	-0.55%	99.96%	3.75%
PEPCO	6,213	-3.13%	99.96%	15.57%
PSEG	9,685	2.06%	0.04%	0.02%

## **Baseline Upgrade b3800.36**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton BGE) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.44 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	-9.80%	99.96%	51.35%
DPL	3,765	3.04%	0.04%	0.01%
Dominion	28,705	-1.36%	99.96%	32.44%
JCPL	5,945	2.32%	0.04%	0.01%
PEPCO	6,213	-3.13%	99.96%	16.17%
PSEG	9,685	2.06%	0.04%	0.02%

**Baseline Upgrade b3800.37**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace terminal equipment limitations at Conastone 500 kV - on the existing Peach Bottom – Conastone, future Graceton – Conastone, 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.93 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	3.95%	74.83%	12.36%
DPL	3,765	-3.00%	25.17%	25.17%
Dominion	28,705	1.73%	74.83%	24.57%
JCPL	5,945	2.68%	74.83%	7.90%
NEPTUNE	685	2.60%	74.83%	0.88%
PENELEC	2,830	1.14%	74.83%	1.60%
PEPCO	6,213	4.00%	74.83%	12.32%
PSEG	9,685	3.03%	74.83%	14.57%
RE	419	3.03%	74.83%	0.63%

**Baseline Upgrade b3800.38**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Chalk Point - Cheltenham 500 kV line (5073 line) - Replace relay at Chalk Point 500 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.34 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	-4.99%	40.98%	39.75%
Dominion	28,705	2.02%	59.02%	59.03%
PEPCO	6,213	-0.16%	40.98%	1.22%

**Baseline Upgrade b3800.39**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Red Lion - Hope Creek 500 kV line - Replace terminal equipment at Red Lion substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.00 M
  - Construction Responsibility: DPL
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	11.03%	0.08%	0.02%
BGE	6,307	-3.07%	99.92%	22.89%
DPL	3,765	-2.12%	99.92%	9.46%
Dominion	28,705	-1.43%	99.92%	48.61%
JCPL	5,945	5.39%	0.08%	0.03%
PEPCO	6,213	-2.58%	99.92%	18.96%
PSEG	9,685	4.25%	0.08%	0.03%

## **Baseline Upgrade b3800.40**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Brighton 500 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.13 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	1.67%	99.97%	9.65%
DPL	3,765	-1.12%	0.03%	0.02%
Dominion	28,705	2.39%	99.97%	63.04%
PEPCO	6,213	4.79%	99.97%	27.29%

**Baseline Upgrade b3800.41**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Conastone 500 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 7.16 M
  - Construction Responsibility: BGE
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	1.67%	99.97%	9.65%
DPL	3,765	-1.12%	0.03%	0.02%
Dominion	28,705	2.39%	99.97%	63.04%
PEPCO	6,213	4.79%	99.97%	27.29%

## **Baseline Upgrade b3800.42**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Peach Bottom North 500 kV bus upgrade - Replace 11 instances of strain bus conductor used for breaker drops or CT drops, seven 500 kV disconnect switches, seven Free Standing CTs, one 500 kV breaker, two breaker relays or meters.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.70 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
BGE	6,307	6.58%	99.70%	62.82%
DPL	3,765	1.27%	99.70%	7.25%
JCPL	5,945	-2.14%	0.30%	0.09%
NEPTUNE	685	-2.22%	0.30%	0.01%
PECO	8,568	-0.19%	0.30%	0.01%
PEPCO	6,213	3.15%	99.70%	29.63%
PSEG	9,685	-2.56%	0.30%	0.18%
RE	419	-2.56%	0.30%	0.01%

**Baseline Upgrade b3800.43**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct 31.5 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (APS section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 176.80 M
  - Construction Responsibility: PSEG
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.73%	98.03%	13.16%
BGE	6,307	-1.47%	1.97%	0.79%
DPL	3,765	-1.27%	1.97%	0.41%
Dominion	28,705	3.25%	98.03%	74.28%
PECO	8,568	-1.05%	1.97%	0.77%
PEPCO	6,213	2.14%	98.03%	10.59%

## **Baseline Upgrade b3800.44**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta termination for the North Delta - High Ridge 500 kV line (PECO work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.40 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
DPL	3,765	-1.74%	0.03%	0.01%
Dominion	28,705	2.47%	99.97%	60.85%
PECO	8,568	-0.46%	0.03%	0.01%
PEPCO	6,213	5.49%	99.97%	29.24%
PSEG	9,685	1.14%	99.97%	9.48%
RE	419	1.14%	99.97%	0.41%

**Baseline Upgrade b3800.45**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.20 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	9.29%	74.94%	17.65%
BGE	6,307	-5.02%	25.06%	4.43%
DPL	3,765	7.72%	74.94%	22.25%
Dominion	28,705	-2.46%	25.06%	9.87%
JCPL	5,945	-3.80%	25.06%	3.16%
NEPTUNE	685	-3.80%	25.06%	0.36%
PECO	8,568	-2.48%	25.06%	2.98%
PENELEC	2,830	-1.11%	25.06%	0.44%
PEPCO	6,213	-4.37%	25.06%	3.80%
PPL	7,415	1.05%	74.94%	5.99%
PSEG	9,685	3.76%	74.94%	27.86%
RE	419	3.76%	74.94%	1.21%

**Baseline Upgrade b3800.46**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta 500 kV termination for the new Peach Bottom-North Delta 500 kV line (PECO work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.60 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	-1.63%	100.00%	11.03%
BGE	6,307	-2.18%	100.00%	37.40%
DPL	3,765	-2.23%	100.00%	22.91%
PEPCO	6,213	-1.69%	100.00%	28.66%

**Baseline Upgrade b3800.47**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build new Peach Bottom South - North Delta 500 kV line – cut in to Peach Bottom tie No.1 and extending line to North Delta (Approximately 1.25 miles new ROW).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.50 M
  - Construction Responsibility: PECO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	-1.63%	100.00%	11.03%
BGE	6,307	-2.18%	100.00%	37.40%
DPL	3,765	-2.23%	100.00%	22.91%
PEPCO	6,213	-1.69%	100.00%	28.66%

**Baseline Upgrade b3800.48**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta termination for the North Delta - High Ridge 500 kV line (Transource work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.96 M
  - Construction Responsibility: Transource
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
DPL	3,765	-1.74%	0.03%	0.01%
Dominion	28,705	2.47%	99.97%	60.85%
PECO	8,568	-0.46%	0.03%	0.01%
PEPCO	6,213	5.49%	99.97%	29.24%
PSEG	9,685	1.14%	99.97%	9.48%
RE	419	1.14%	99.97%	0.41%

**Baseline Upgrade b3800.49**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta 500 kV termination for the Calpine generator.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.05 M
  - Construction Responsibility: Transource
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX. No transmission zone has greater than 1% distribution factor. The cost by solution-based DFAX is allocated 100% to PECO.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

**Baseline Upgrade b3800.50**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (Transource work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.49 M
  - Construction Responsibility: Transource
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	-9.29%	74.94%	17.65%
BGE	6,307	-5.02%	25.06%	4.43%
DPL	3,765	7.72%	74.94%	22.25%
Dominion	28,705	-2.46%	25.06%	9.87%
JCPL	5,945	-3.80%	25.06%	3.16%
NEPTUNE	685	-3.80%	25.06%	0.36%
PECO	8,568	-2.48%	25.06%	2.98%
PENELEC	2,830	-1.11%	25.06%	0.44%
PEPCO	6,213	-4.37%	25.06%	3.80%
PPL	7,415	1.05%	74.94%	5.99%
PSEG	9,685	3.76%	74.94%	27.86%
RE	419	3.76%	74.94%	1.21%

**Baseline Upgrade b3800.51**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: North Delta 500 kV termination for the new Peach Bottom-North Delta 500 kV line (Transource work).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.29 M
  - Construction Responsibility: Transource
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEC	2,481	-1.63%	100.00%	11.03%
BGE	6,307	-2.18%	100.00%	37.40%
DPL	3,765	-2.23%	100.00%	22.91%
PEPCO	6,213	-1.69%	100.00%	28.66%

**Baseline Upgrade b3800.100**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Establish a new 500 kV breaker position for the low-side of the existing 765/500 kV transformer at Cloverdale Station. The new position will be between two new 500 kV circuit breakers located in a new breaker string, electrically converting the 500 kV yard to "double-bus double-breaker" configuration.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 11.59 M
  - Construction Responsibility: AEP
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio as below and 50% of the cost is allocated by solution-based DFAX. No transmission zone has greater than 1% distribution factor. The cost by solution-based DFAX is allocated 100% to AEP

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

**Baseline Upgrade b3800.101**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: 502 Junction substation two 500 kV circuit breaker expansion.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 30.60 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.42%	100.00%	25.59%
BGE	6,307	2.56%	100.00%	9.79%
Dominion	28,705	2.99%	100.00%	51.94%
PEPCO	6,213	3.37%	100.00%	12.68%

**Baseline Upgrade b3800.102**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: New 500 kV line from existing 502 Junction substation to Woodside 500 KV substation (bypass Black Oak) (NEET Portion).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 315.64 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.42%	100.00%	25.59%
BGE	6,307	2.56%	100.00%	9.79%
Dominion	28,705	2.99%	100.00%	51.94%
PEPCO	6,213	3.37%	100.00%	12.68%

**Baseline Upgrade b3800.103**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 16 miles of the Gore - Stonewall 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 151.72 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.42%	100.00%	25.59%
BGE	6,307	2.56%	100.00%	9.79%
Dominion	28,705	2.99%	100.00%	51.94%
PEPCO	6,213	3.37%	100.00%	12.68%

**Baseline Upgrade b3800.104**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 15 miles of the Stonewall - Millville 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 136.93 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.90%	100.00%	9.18%
BGE	6,307	-2.26%	100.00%	7.21%
Dominion	28,705	-4.99%	100.00%	72.52%
PEPCO	6,213	-3.52%	100.00%	11.09%

**Baseline Upgrade b3800.105**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 6 miles of the Millville - Doubs 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 52.35 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.90%	100.00%	9.18%
BGE	6,307	-2.26%	100.00%	7.21%
Dominion	28,705	-4.99%	100.00%	72.52%
PEPCO	6,213	-3.52%	100.00%	11.09%

**Baseline Upgrade b3800.106**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Woodside 500 kV substation, except terminations, transformer, Cap Banks and Static Synchronous Compensator (STATCOM).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 43.96 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio as below and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX. Only APS transmission zone has greater than 1% distribution factor. The cost by solution-based DFAX is allocated 100% to APS.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

**Baseline Upgrade b3800.107**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line Termination work at Woodside 500 kV substation for 502 Junction to Woodside 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.42%	100.00%	25.59%
BGE	6,307	2.56%	100.00%	9.79%
Dominion	28,705	2.99%	100.00%	51.94%
PEPCO	6,213	3.37%	100.00%	12.68%

**Baseline Upgrade b3800.108**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line termination work at Woodside 500 kV substation for Woodside to Aspen 500 kV line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.90%	100.00%	9.18%
BGE	6,307	2.26%	100.00%	7.21%
Dominion	28,705	4.99%	100.00%	72.52%
PEPCO	6,213	3.52%	100.00%	11.09%

### **Baseline Upgrade b3800.109**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Termination work for two 500/138 kV transformers at Woodside 500 kV substation
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.35 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - Only APS transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

### **Baseline Upgrade b3800.110**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Two 500/138 kV transformers at Woodside 500 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 33.68 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - Only APS transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

### **Baseline Upgrade b3800.111**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct the Woodside - Stonewall 138 kV No. 1 line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.28 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - Only APS transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

## **Baseline Upgrade b3800.112**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Construct the Woodside - Stonewall 138 kV No. 2 line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.31 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - Only APS transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

**Baseline Upgrade b3800.113**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Two 150 MVAR Cap banks and one +500/-300 MVAR STATCOM at Woodside 500 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 44.22 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost is allocated by load ratio as below and 50% of the cost is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the APS zone and therefore no distribution factor is provided, 100% allocated to APS.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

### **Baseline Upgrade b3800.114**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Stonewall 138 kV substation two 138 kV breaker expansion.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 8.30 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - Only APS transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to APS

**Baseline Upgrade b3800.115**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation. (NEET Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.25%	100.00%	27.49%
BGE	6,307	2.31%	100.00%	9.83%
Dominion	28,705	2.77%	100.00%	53.78%
PEPCO	6,213	2.12%	100.00%	8.90%

**Baseline Upgrade b3800.116**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation. (FE Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.06 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	4.25%	100.00%	27.49%
BGE	6,307	2.31%	100.00%	9.83%
Dominion	28,705	2.77%	100.00%	53.78%
PEPCO	6,213	2.12%	100.00%	8.90%

**Baseline Upgrade b3800.117**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line work for terminating Doubs to Bismark line for Bismark side at Woodside 500 kV substation. (NEET Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-4.46%	100.00%	21.09%
BGE	6,307	-2.10%	100.00%	6.55%
Dominion	28,705	-4.57%	100.00%	64.94%
PEPCO	6,213	-2.41%	100.00%	7.42%

**Baseline Upgrade b3800.118**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Line work for terminating Doubs to Bismark line into Woodside 500 kV substation. (DOM Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.10 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-4.46%	100.00%	21.09%
BGE	6,307	-2.10%	100.00%	6.55%
Dominion	28,705	-4.57%	100.00%	64.94%
PEPCO	6,213	-2.41%	100.00%	7.42%

**Baseline Upgrade b3800.119**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: New 500 kV transmission line from Woodside substation to Aspen substation (in DOM zone). (NEET Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 71.72 M
  - Construction Responsibility: NEET
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.90%	100.00%	9.18%
BGE	6,307	2.26%	100.00%	7.21%
Dominion	28,705	4.99%	100.00%	72.52%
PEPCO	6,213	3.52%	100.00%	11.09%

**Baseline Upgrade b3800.120**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Aspen substation work to terminate the new NextEra 500 kV line. Include Aspen 500 kV substation portion build.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 30.49 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.90%	100.00%	9.18%
BGE	6,307	2.26%	100.00%	7.21%
Dominion	28,705	4.99%	100.00%	72.52%
PEPCO	6,213	3.52%	100.00%	11.09%

**Baseline Upgrade b3800.121**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Kammer to 502 Junction 500 kV line: Conduct LIDAR Sag Study to assess SE rating and needed upgrades.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.10 M
  - Construction Responsibility: AEP
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
AEP	22,702	-1.25%	99.98%	21.66%
APS	9,568	4.14%	0.02%	0.01%
BGE	6,307	-1.49%	99.98%	7.14%
DEOK	5,204	3.08%	0.02%	0.01%
Dominion	28,705	-2.85%	99.98%	62.25%
PEPCO	6,213	-1.89%	99.98%	8.93%

**Baseline Upgrade b3800.122**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 500 kV line No. 514 from Doubs - Goose Creek 500 kV line. The Doubs - Goose Creek 500 kV line will be rebuilt and the Doubs - Dickerson 230 kV will be relocated and underbuilt on the same structure.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 103.27 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-3.74%	0.10%	0.08%
Dominion	28,705	5.79%	99.90%	99.90%
PEPCO	6,213	-1.18%	0.10%	0.02%

**Baseline Upgrade b3800.123**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Doubs substation work - Re-terminate the rebuilt Doubs - Goose Creek 500 kV line in its existing bay, terminate the new Doubs - Aspen 500 kV line in the open bay at Doubs, Replace three 500 kV breakers, Replace 500 kV terminal equipment including disconnect switches, CTs and substation conductor & Replace relaying. (APS Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 31.70 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX %Flow	DFAX Allocation
APS	9,568	-3.74%	0.10%
Dominion	28,705	5.79%	99.90%
PEPCO	6,213	-1.18%	0.10%

**Baseline Upgrade b3800.124**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: New Doubs to Aspen 500 kV line (APS Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 68.80 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-3.74%	0.10%	0.08%
Dominion	28,705	5.79%	99.90%	99.90%
PEPCO	6,213	-1.18%	0.10%	0.02%

### **Baseline Upgrade b3800.125**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Doubs - Dickerson 230 kV line. This will be underbuilt on the new Doubs - Goose Creek 500 kV line. (APS Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.04 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.74%	0.00%	0.00%
PEPCO	6,213	3.90%	100.00%	100.00%

**Baseline Upgrade b3800.126**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Doubs - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line. (APS Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 11.35 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.98%	0.00%	0.00%
PEPCO	6,213	3.96%	100.00%	100.00%

**Baseline Upgrade b3800.127**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild the Dickerson - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line. (APS Portion)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.80 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.80%	0.00%	0.00%
PEPCO	6,213	3.95%	100.00%	100.00%

**Baseline Upgrade b3800.200**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Aspen - Golden on 500/230 kV double circuit structures with substation upgrades at Aspen and Golden. New conductor to have a minimum summer normal rating of 4357MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 176.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.32%	0.00%	0.00%
Dominion	28,705	-6.03%	100.00%	100.00%

### **Baseline Upgrade b3800.201**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install two 500/230 kV transformers at Golden substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 70.00 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

## **Baseline Upgrade b3800.202**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 500/230 kV transformer at Aspen substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 42.00 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
Dominion	28,705	2.12%	100.00%	86.28%
PEPCO	6,213	1.56%	100.00%	13.72%

### **Baseline Upgrade b3800.203**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install a second 500/230 kV 1440 MVA transformer at Mars substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 42.19 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.204**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor 0.5 mile section of 230 kV line No. 2150 Golden - Paragon Park Circuit 1 to achieve a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.44 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.205**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor 0.5 mile section of 230 kV line No. 2081 Golden - Paragon Park Circuit 2 to achieve a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.44 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.206**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Paragon Park substation line conductors to 4000A continuous current rating for 230 kV lines No. 2081 and No. 2150.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.09 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.207**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor 230 kV line No. 2207 Paragon Park - BECO to achieve a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.36 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.208**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Paragon Park substation conductor and line leads to 4000A continuous current rating for 230 kV line No. 2207.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.10 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.209**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade BECO substation equipment to 4000A continuous current rating for 230 kV line No. 2207.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.86 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.210**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 230 kV line from Mars - Lockridge on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Mars and Lockridge substations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 57.95 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.211**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 230 kV line from Lockridge - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Lockridge substations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 56.93 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

**Baseline Upgrade b3800.212**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Mars - Golden on 500/230 kV double circuit structures with substation upgrades at Golden and Mars. New conductor has minimum summer normal rating of 4357 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 228.04 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.28%	99.96%	99.96%
Dominion	28,705	-0.41%	0.04%	0.04%

**Baseline Upgrade b3800.213**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Cut 500 kV line No. 558 Brambleton - Goose Creek into Aspen substation. Upgrade 500 kV terminal equipment at Aspen and Goose Creek to 5000A continuous rating current. At Goose Creek, replace circuit breakers 59582 and 55882, and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 50.12 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.82%	99.39%	99.39%
Dominion	28,705	-1.20%	0.61%	0.61%

**Baseline Upgrade b3800.214**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Aspen - Goose Creek to achieve a summer rating of 4357 MVA. Install new 500 kV terminal equipment at Aspen.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 38.53 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.82%	99.39%	99.39%
Dominion	28,705	-1.20%	0.61%	0.61%

### **Baseline Upgrade b3800.215**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Cut 230 kV line No. 2150 Sterling Park - Paragon Park Circuit 1 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2150 to 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 57.62 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

## **Baseline Upgrade b3800.216**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Cut 230 kV line No. 2081 Sterling Park - Paragon Park Circuit 2 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2081 to 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 57.62 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.217**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 230 kV line from Aspen - Sycolin Creek on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 60.42 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
Dominion	28,705	-2.12%	100.00%	86.28%
PEPCO	6,213	-1.56%	100.00%	13.72%

### **Baseline Upgrade b3800.218**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 230 kV line from Sycolin Creek - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 69.84 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
Dominion	28,705	1.84%	100.00%	100.00%
PEPCO	6,213	-1.11%	0.00%	0.00%

### **Baseline Upgrade b3800.219**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace seven overdutied 230 kV breakers at Beaumeade substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.220**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace four overdutied 230 kV breakers at BECO substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.81 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.221**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace four overdutied 230 kV breakers at Belmont substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.90 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.222**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace one overdutied 230 kV breaker at Discovery substation with 80 kA breaker.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.49 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.223**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace one overdutied 230 kV breaker at Pleasant View substation with 80 kA breaker.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.224**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace two overdutied 230 kV breakers at Shellhorn substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.93 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

**Baseline Upgrade b3800.225**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Change 500 kV line No. 558 destination at Brambleton to Aspen substation and upgrade line protection relays.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.23 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	3.29%	8.60%	5.20%
DL	2,702	1.02%	8.60%	0.46%
Dominion	28,705	-5.08%	91.40%	91.40%
ME	3,077	1.15%	8.60%	0.59%
PEPCO	6,213	2.29%	8.60%	2.35%

### **Baseline Upgrade b3800.226**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Change 230 kV lines No. 2081 and No. 2150 at Paragon Park substation destination to Golden substation and upgrade line protection relays
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.30 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.227**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Change 230 kV lines No. 2081 and No. 2150 at Sterling Park substation destination to Golden substation and upgrade line protection relays.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.30 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.228**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor 1.47 miles of 230 kV lines No. 2081 and No. 2150 from Sterling Park to Golden substation. Upgrade terminal equipment at Sterling Park to 4000A continuous current.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 7.97 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.229**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor 0.67 miles of 230 kV lines No. 2194 and No. 9231 from Davis Drive to Sterling Park substation. Terminal equipment at remote end substations will be installed or upgraded to 4000A continuous current rating to support new conductor ratings.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.53 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.230**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reset relays at Breezy Knoll for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.231**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reset relays at Dry Mill for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.232**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reset relays at Hamilton for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.01 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.233**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 2098 wreck and rebuild. Replace circuit breakers 274T2098 & 2098T2180 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.81 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.234**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Wreck and rebuild approximately one mile of 230 kV line No. 2098 between Pleasant View and structure 2098/9, where line No. 2098 turns towards Hamilton substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.44 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.235**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace five overdutied 230 kV breakers at Loudoun substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.32 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.236**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace two overdutied 230 kV breakers at Ox substation with 63 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.51 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.237**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace two overdutied 230 kV breakers at Pleasant View substation with 63 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.29 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.238**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 203 rebuild. Replace circuit breakers 203T274 & L3T203 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.81 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	1.44%	35.13%	8.09%
BGE	6,307	2.23%	35.13%	8.25%
Dominion	28,705	-3.13%	64.87%	64.87%
PEPCO	6,213	5.17%	35.13%	18.79%

### **Baseline Upgrade b3800.239**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Wreck and rebuild 230 kV line No. 203 between Pleasant View and structure 203/15 using double circuit 500/230 kV structures. The 500 kV line is from Aspen - Doubs.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.87 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	1.44%	35.13%	8.09%
BGE	6,307	2.23%	35.13%	8.25%
Dominion	28,705	-3.13%	64.87%	64.87%
PEPCO	6,213	5.17%	35.13%	18.79%

## **Baseline Upgrade b3800.240**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Aspen - Doubs using double circuit 500/230 kV structures. The 230 kV line is from Pleasant View - structure 203/15. Install terminal equipment at Aspen for a 5000A line to Doubs. This includes GIS breakers, GIS-to-AIS transition equipment, and metering CCVTs and CTs for the tie line.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 41.68 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-3.79%	0.10%	0.09%
Dominion	28,705	5.83%	99.90%	99.89%
PEPCO	6,213	-1.22%	0.10%	0.02%

**Baseline Upgrade b3800.241**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 500 kV line No. 514 from Goose Creek - Doubs using 500/230 kV double circuit structures. The new double circuit towers will accommodate 230 kV line No. 2098 between Pleasant View substation and structure 2098/9. Upgrade equipment at Goose Creek to 5000A continuous current rating in support of line No. 514 wreck and rebuild. Replace circuit breakers 514T595 & 51482 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 16.11 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-3.74%	0.10%	0.08%
Dominion	28,705	5.79%	99.90%	99.90%
PEPCO	6,213	-1.18%	0.10%	0.02%

## **Baseline Upgrade b3800.242**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrading switches 20366M and 20369M and line leads to 4000A continuous current rating of 230 kV line No. 203 at Edwards Ferry substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	-1.95%	57.17%	11.45%
BGE	6,307	-3.65%	57.17%	14.14%
Dominion	28,705	3.96%	42.83%	42.82%
PEPCO	6,213	-8.27%	57.17%	31.59%

**Baseline Upgrade b3800.243**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen. (the 500 kV portion of the work)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 37.20 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-3.79%	0.10%	0.09%
Dominion	28,705	5.83%	99.90%	99.89%
PEPCO	6,213	-1.22%	0.10%	0.02%

### **Baseline Upgrade b3800.244**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen. (The 230 kV portion of the project)
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 18.60 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	-1.95%	48.82%	9.78%
BGE	6,307	-3.65%	48.82%	12.07%
Dominion	28,705	4.12%	51.18%	51.18%
PEPCO	6,213	-8.27%	48.82%	26.97%

### **Baseline Upgrade b3800.245**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconfigure Dickerson H 230 kV substation and upgrade terminal equipment.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.58 M
  - Construction Responsibility: PEPCO
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated by solution-based DFAX as below:

<b>Transmission Zone</b>	<b>Planned Load (MW)</b>	<b>DFAX</b>	<b>%Flow</b>	<b>DFAX Allocation</b>
APS	9,568	-1.95%	48.82%	9.78%
BGE	6,307	-3.65%	48.82%	12.07%
Dominion	28,705	4.12%	51.18%	51.18%
PEPCO	6,213	-8.27%	48.82%	26.97%

### **Baseline Upgrade b3800.300**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 2135 Hollymeade Junction - Cash's Corner using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 32.45 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.301**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 2135 Cash's Corner - Gordonsville using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 21.51 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.302**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Cash's Corner switches 213576 and 213579 and line leads to 4000A continuous current rating of 230 kV line No. 2135.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.51 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only ME transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.303**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Gordonsville substation line leads to 4000A continuous current rating of 230 kV line No. 2135.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.08 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.304**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Hollymeade substation switch 213549 and line leads to 4000A continuous current rating of 230 kV line No. 2135.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.30 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - Only ME transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion

### **Baseline Upgrade b3800.305**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 230 kV 300 MVAR STATCOM and associated equipment at Beaumeade 230 kV substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 43.57 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost for this baseline upgrade is allocated 100% to Dominion

**Baseline Upgrade b3800.306**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 500 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Morrisville substation. This addition will require a control house expansion to accommodate for two new panels.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.63 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio as below and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost by solution-based DFAX is allocated 100% to Dominion.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

**Baseline Upgrade b3800.307**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 500 kV, 300 MVAR STATCOM and associated equipment at Mars substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 41.27 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio as below and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost by solution-based DFAX is allocated 100% to Dominion.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

### **Baseline Upgrade b3800.308**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Mars substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.26 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.309**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Wishing Star substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.09 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.310**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install one 500 kV, 293.8 MVAR Shunt Capacitor Bank & associated equipment at Wishing Star substation.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.97 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio as below and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX. The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost by solution-based DFAX is allocated 100% to Dominion.

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

**Baseline Upgrade b3800.311**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 500 kV line No. 545 Bristers - Morrisville as a single circuit monopole line to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 65.86 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
Dominion	28,705	2.96%	100.00%	91.07%
PEPCO	6,213	1.34%	100.00%	8.93%

**Baseline Upgrade b3800.312**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 500 kV line No. 569 Loudoun - Morrisville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 175.62 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.28%	100.00%	11.72%
Dominion	28,705	3.22%	100.00%	88.28%

**Baseline Upgrade b3800.313**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 10.29 miles 500 kV line segment of line No. 535 (Meadow Brook to Loudoun) to accommodate the new 500 kV line in the existing ROW.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 65.86 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.38%	100.00%	13.93%
BGE	6,307	1.03%	100.00%	6.86%
Dominion	28,705	2.34%	100.00%	70.92%
PEPCO	6,213	1.27%	100.00%	8.29%

**Baseline Upgrade b3800.314**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 4.83 miles of 500 kV line No. 546 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 546.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 49.79 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.68%	100.00%	41.98%
Dominion	28,705	0.46%	100.00%	34.03%
PEPCO	6,213	1.48%	100.00%	23.99%

**Baseline Upgrade b3800.315**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 4.59 miles of 500 kV line No. 590 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 590.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 49.79 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.68%	100.00%	41.98%
Dominion	28,705	0.46%	100.00%	34.03%
PEPCO	6,213	1.48%	100.00%	23.99%

### **Baseline Upgrade b3800.316**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 6.17 miles of 230 kV line No. 2030 Gainesville - Mint Springs to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.98 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.317**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 1.58 miles of 230 kV line No. 2030 Mint Springs - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.59 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.318**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 4.2 miles of 230 kV line No. 2045 Loudoun - North Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 14.52 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.319**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 0.88 miles of 230 kV line No. 2045 North Star - Brambleton to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.04 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.320**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 1.22 miles of 230 kV line No. 2227 Brambleton - Racefield to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.36 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.321**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 3.69 miles of 230 kV line No. 2094 Racefield - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.20 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.322**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 9.16 miles of 230 kV line No. 2101 Bristers - Nokesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 12.99 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.323**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 2.89 miles of 230 kV line No. 2101 Nokesville - Vint Hill TP to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.10 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.324**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 0.33 miles of 230 kV line No. 2101 Vint Hill TP - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.47 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.325**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 3.32 miles of 230 kV line No. 2114 Rollins Ford - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.35 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.326**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 10.09 miles of 230 kV line No. 2114 Vint Hill - Elk Run to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.21 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.327**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 4.43 miles of 230 kV line No. 2140 Heathcote - Catharpin to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.64 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.328**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 2.88 miles of 230 kV line No. 2140 Catharpin - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 6.92 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.329**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 0.25 miles of 230 kV line No. 2151 Railroad DP - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.39 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.330**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 4.14 miles of 230 kV line No. 2163 Vint Hill - Liberty to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 17.56 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.331**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 0.48 miles of 230 kV line No. 2176 Heathcote - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 8.78 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.332**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 1.11 miles of 230 kV line No. 2222 Rollins Ford - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 13.17 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.333**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild approximately 1.65 miles of 115 kV line No. 183 Bristers - Ox to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 8.78 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.334**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace four overdutied 230 kV breakers at Loudoun substation with 80 kA breakers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.72 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.335**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace one overdutied 500 kV breaker at Ox substation with a 63 kA breaker.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.29 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.336**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Bristers substation to support the new conductor 5000A rating for 500 kV line No. 545.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.72 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
Dominion	28,705	2.96%	100.00%	91.07%
PEPCO	6,213	1.34%	100.00%	8.93%

### **Baseline Upgrade b3800.337**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Brambleton substation to support the new conductor termination. All terminal equipment for 230 kV lines No. 2045 and No. 2094 to be rated for 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.65 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.338**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at Dawkins Branch 230 KV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.339**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Gainesville 230 KV substation to support the new conductor termination. All terminal equipment for 230 kV line No. 2030 to be rated for 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.71 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.340**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at Heathcote 230 KV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The solution-based DFAX calculation was based on an interface entirely within the Dominion zone and therefore no distribution factor is provided. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.341**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Loudoun substation for 230 kV line No. 2094 Loudoun - Racefield to be rated for 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.50 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.342**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Loudoun substation for 230 kV line No. 2045 Loudoun - North Star to be rated for 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.50 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.343**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Loudoun substation for 230 kV line No. 2030 Loudoun - Mint Springs to be rated for 4000A continuous current rating.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.00 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.344**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Loudoun substation to support the new conductor 5000A rating for 500 kV line No. 569 Loudoun - Morrisville.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.70 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.28%	100.00%	11.72%
Dominion	28,705	3.22%	100.00%	88.28%

### **Baseline Upgrade b3800.345**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at 230 kV Mint Springs station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.346**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade and install equipment at Morrisville substation to support the new 500 kV conductor termination. All terminal equipment to be rated for 5000A for 500 kV line No. 545 and No. 569. Upgrade 500 kV bus 2 to 5000A.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 17.54 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.28%	100.00%	11.72%
Dominion	28,705	3.22%	100.00%	88.28%

### **Baseline Upgrade b3800.347**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at North Star 230 kV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.348**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at Racefield 230 kV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.349**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at Railroad 230 kV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

## **Baseline Upgrade b3800.350**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install terminal equipment at Vint Hill 500 kV substation to support a 5000A line to 500 kV Morrisville substation. Update relay settings for 230 kV lines No. 2101, No. 2163, and 500 kV line No. 535.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 23.64 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	-1.23%	100.00%	9.79%
Dominion	28,705	-3.79%	100.00%	90.21%

### **Baseline Upgrade b3800.351**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Update relay settings at Vint Hill for 230 kV line No. 2101 Vint Hill - Bristers.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.352**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Update relay settings at Vint Hill for 230 kV line No. 2163 Vint Hill - Liberty.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.353**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Update relay settings at Vint Hill for 500 kV line No. 535 Vint Hill - Loudoun.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.38%	100.00%	13.93%
BGE	6,307	1.03%	100.00%	6.86%
Dominion	28,705	2.34%	100.00%	70.92%
PEPCO	6,213	1.27%	100.00%	8.29%

**Baseline Upgrade b3800.354**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Install terminal equipment at Wishing Star 500 kV substation to support a 5000A line to Vint Hill. Update relay settings for 500 kV lines No. 546 and No. 590.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 12.30 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.49%	100.00%	21.45%
Dominion	28,705	1.82%	100.00%	78.55%

### **Baseline Upgrade b3800.355**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Revise relay settings at Youngs Branch 230 kV station.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

**Baseline Upgrade b3800.356**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Vint Hill to Wishing Star. The line will be supported on single circuit monopoles. New conductor to have a summer rating of 4357 MVA. Line length is approximately 16.59 miles.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 87.81 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

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Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.49%	100.00%	21.45%
Dominion	28,705	1.82%	100.00%	78.55%

**Baseline Upgrade b3800.357**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Build a new 500 kV line from Morrisville to Vint Hill. New conductor to have a summer rating of 4357 MVA. Line length is approximately 19.71 miles.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 101.89 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - 50% of the cost for this baseline upgrade is allocated by load ratio and 50% of the cost for this baseline upgrade is allocated by solution-based DFAX as below:

Transmission Zone	2022 Peak Load (MW)	2023 Load-Ratio Share Allocation (%)
AEC	2614.0	1.65%
AEP	21717.1	13.68%
APS	9154.3	5.76%
ATSI	12771.1	8.04%
BGE	6520.0	4.11%
ComEd	21262.3	13.39%
Dayton	3361.6	2.12%
DEOK	5166.1	3.25%
DL	2714.7	1.71%
Dominion	21156.3	13.32%
DPL	4125.3	2.60%
EKPC	2993.5	1.89%
JCPL	6122.9	3.86%
ME	3021.3	1.90%
NEPTUNE*	673.8	0.42%
OVEC	121.0	0.08%
PECO	8582.6	5.40%
PENELEC	2830.3	1.78%
PEPCO	5833.8	3.67%
PPL	7488.6	4.72%
PSEG	10147.0	6.39%
RE	407.4	0.26%

\*Neptune Regional Transmission System, LLC

Transmission Zone	Planned Load (MW)	DFAX	%Flow	DFAX Allocation
APS	9,568	1.23%	100.00%	9.79%
Dominion	28,705	3.79%	100.00%	90.21%

### **Baseline Upgrade b3800.358**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace single unit Locks 230/115 kV 168 MVA transformer TX No. 7 with new single unit transformer with a rating of 224 MVA. Lead lines at the 115 kV level will be upgraded to 2000A.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 7.14 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.359**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Wreck and rebuild 230 kV line No. 2090 Ladysmith CT-Summit D.P. segment as a double circuit 230 kV line to achieve a summer rating of 1573 MVA. Only one circuit will be wired at this stage. Upgrade circuit breaker leads, switches and line leads at Ladysmith CT to 4000A
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 36.50 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.360**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 2054 Charlottesville - Proffit DP using double-circuit capable 500/230 kV poles. (The 500 kV circuit will not be wired as part of this project).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 70.14 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.361**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 233 Charlottesville - Hydraulic Road - Barracks Road - Crozet - Doms.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 54.54 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.362**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 291 segment from Charlottesville - Barracks Road.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 22.50 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.363**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 291 segment from Barracks Road - Crozet.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 20.81 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.364**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Rebuild 230 kV line No. 291 segment Crozet - Dooms.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 11.23 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.365**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Hollymeade substation Relay Revision for 230 kV line No. 2054 Charlottesville - Hollymeade.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.01 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.366**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade the terminal equipment at 230 kV Charlottesville station to 4000A for 230 kV line No. 2054 (Charlottesville - Hollymeade).
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.97 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.367**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Proffit DP substation Relay revision for 230 kV line No. 2054 Charlottesville - Hollymeade.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No Dominion transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.368**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Barracks Road substation relay reset to accommodate the rebuilt line 230 kV lines No. 233 and No. 291.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.369**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Crozet substation relay reset to accommodate the rebuilt 230 kV lines No. 233 and No. 291.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.03 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.370**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Charlottesville 230 kV substation terminal equipment upgrade for 230 kV lines No. 233 and No. 291 rebuild.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.50 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.371**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Upgrade Hydraulic Road substation equipment for 230 kV line No. 233 and No. 291 rebuild.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.65 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.372**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Dooms substation terminal equipment upgrade for 230 kV line No. 233 and No. 291 rebuild.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 1.06 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.373**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Wreck and rebuild approximately 7.14 miles of 230 kV line No. 256 from St. Johns to structure 256/108 to achieve a summer rating of 1573 MVA. Line switch 25666 at St. Johns to be upgraded to 4000A.
  - Required Upgrade In-Service Date: June 01, 2028
  - Estimated Upgrade Cost: \$ 21.75 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.374**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Reconductor approximately 5.30 miles of 230 kV line No. 256 from Ladysmith CT to structure 256/107 to achieve a summer rating of 1573 MVA. Terminal equipment at remote end substations will be upgraded to 4000A.
  - Required Upgrade In-Service Date: June 01, 2028
  - Estimated Upgrade Cost: \$ 16.14 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - No transmission zone has greater than 1% distribution factor. The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.401**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Ashburn 230 kV breaker SC432 with a breaker rated 63 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.79 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.402**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Beaumeade 230 kV breaker 227T2152 with a breaker rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.31 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.403**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace BECO 230 kV breakers 215012 and H12T2150 with breakers rated 63 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.21 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.404**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Belmont 230 kV breaker 227T2180 with a breaker rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.24 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.405**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Brambleton 230 kV breakers 20102, 20602, 204502, 209402, 201T2045, 206T2094 with breakers rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 9.38 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.406**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Gainesville 230 kV breaker 216192 with a breaker rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.11 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.407**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Loudoun 230 kV breakers 204552, 217352 with breakers rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 5.57 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.408**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Ox 230 kV breakers 22042, 24342, 24842, 220T2063, 243T2097, 248T2013, H342 with breakers rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 9.02 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.409**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Paragon Park 230 kV breakers 208132, 215032, 2081T2206, 2150T2207 with breakers rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.96 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.410**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Reston 230 kV breaker 264T2015 with a breaker rated 63 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 0.79 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.411**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Stonewater 230 kV breakers 20662-1, 20662-2, 217862-1, 217862-2 with breakers rated 80 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 4.95 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

## **Baseline Upgrade b3800.412**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Waxpool 230 kV breakers 214922-5, 214922-6, 216622-5, 216622-6 with breakers rated 63 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 2.93 M
  - Construction Responsibility: Dominion
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to Dominion.

### **Baseline Upgrade b3800.413**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Double Toll Gate 138 kV breaker MDT 138 OCB with a breaker rated 40 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 3.00 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to APS.

### **Baseline Upgrade b3800.414**

- Overview of Reliability Problem
  - Criteria Violation: 2022 Window 3
  - Contingency: 2022 Window 3
  - Criteria Test: 2022 Window 3
  
- Overview of Reliability Solution
  - Description of Upgrade: Replace Doubs 500 kV breaker DL-55 522LIN with a breaker rated 60 kA.
  - Required Upgrade In-Service Date: June 01, 2027
  - Estimated Upgrade Cost: \$ 10.01 M
  - Construction Responsibility: APS
  
- Cost Allocation
  - The cost for this baseline upgrade is allocated 100% to APS.

## **Attachment B**

Schedule 12 – Appendix A and  
Appendix C of the PJM Open Access  
Transmission Tariff

(Marked / Redline Format)

**SCHEDULE 12 – APPENDIX A**

**(2) Baltimore Gas and Electric Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2219	Install a 115 kV tie breaker at Wagner to create a separation from line 110535 and transformer 110-2	BGE (100%)
b2220	Install four 115 kV breakers at Chestnut Hill	BGE (100%)
b2221	Install an SPS to trip approximately 19 MW load at Green St. and Concord	BGE (100%)
b2307	Install a 230/115 kV transformer at Raphael Rd and construct approximately 3 miles of 115 kV line from Raphael Rd. to Joppatowne. Construct a 115 kV three breaker ring at Joppatowne	BGE (100%)
b2308	Build approximately 3 miles of 115 kV underground line from Bestgate tap to Waugh Chapel. Create two breaker bay at Waugh Chapel to accommodate the new underground circuit	BGE (100%)
b2396	Build a new Camp Small 115 kV station and install 30 MVAR capacitor	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2396.1	Install a tie breaker at Mays Chapel 115 kV substation	BGE (100%)
b2567	Upgrade the Riverside 115 kV substation strain bus conductors on circuits 115012 and 115011 with double bundled 1272 ACSR to achieve ratings of 491/577 MVA SN/SE on both transformer leads	BGE (100%)
b2568	Reconductor Northwest – Northwest #2 115 kV 110574 substation tie circuit with 2167 ACSR to achieve ratings of 400/462 MVA SN/SE	BGE (100%)
b2752.6	Conastone 230 kV substation tie-in work (install a new circuit breaker at Conastone 230 kV and upgrade any required terminal equipment to terminate the new circuit)	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.7	Reconductor/Rebuild the two Conastone – Northwest 230 kV lines and upgrade terminal equipment on both ends	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.8	Replace the Conastone 230 kV ‘2322 B5’ breaker with a 63 kA breaker	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2752.9	Replace the Conastone 230 kV '2322 B6' breaker with a 63 kA breaker	BGE (100%)
b2766.1	Upgrade substation equipment at Conastone 500 kV to increase facility rating to 2826 MVA normal and 3525 MVA emergency	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (3.98%) / ATSI (0.03%) / BGE (20.98%) / DL (0.01%) / Dominion (32.06%) / DPL (0.02%) / JCPL (7.05%) / NEPTUNE* (0.81%) / PEPCO (17.70%) / PPL (2.72%) / PSEG (14.07%) / RE (0.57%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2816	Re-connect the Crane – Windy Edge 110591 & 110592 115 kV circuits into the Northeast Substation with the addition of a new 115 kV 3-breaker bay	BGE (100%)
b2992.1	Reconductor the Conastone to Graceton 230 kV 2323 & 2324 circuits. Replace 7 disconnect switches at Conastone substation	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPSCO (20.53%)
b2992.2	Add Bundle conductor on the Graceton – Bagley – Raphael Road 2305 & 2313 230 kV circuits	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPSCO (20.53%)
b2992.3	Replacing short segment of substation conductor on the Windy Edge to Glenarm 110512 115 kV circuit	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPSCO (20.53%)
b2992.4	Reconductor the Raphael Road – Northeast 2315 & 2337 230 kV circuits	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPSCO (20.53%)
b3228	Replace two (2) relays at Center substation to increase ratings on the Westport to Center 110552 115 kV circuit	BGE (100%)
b3305	Replace Pumphrey 230/115 kV transformer	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3668	Upgrade Windy Edge 115 kV substation conductor to increase ratings of the Windy Edge – Chesco Park 110501 115 kV line	BGE (100%)
b3770	Rebuild 1.4 miles of existing single circuit 230 kV tower line between BGE's Graceton substation to the Brunner Island PPL tie-line at the MD/PA state line to double circuit steel pole line with one circuit installed to uprate 2303 circuit	BGE (99.98%) / ME (0.01%) / PPL (0.01%)
b3771	Reconductor two (2) 230 kV circuits from Conastone to Northwest #2	BGE (70.70%) / PEPCO (29.30%)
b3780.4	Peach Bottom to Graceton (BGE) 500 kV transmission line. New rating is 4503 MVA SN/ 5022 MVA SE	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.03%) / BGE (28.40%) / DPL (0.02%) / Dominion (33.36%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PEPCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3780.5	Build 230 kV Solley Road substation and STATCOM. New STATCOM rating: 350 MVAR. Add 4x 230 kV breakers bays	BGE (100%)
b3780.6	Build 230 kV Granite substation and STATCOM. New STATCOM rating: 350 MVAR. Add 4x 230 kV breaker bays	BGE (100%)
b3780.7	Build Batavia Road 230 kV substation. Add 4x 230 kV breaker bays	BGE (100%)
b3780.8	Graceton 500 kV substation expansion: Add 3x 500 kV breaker bays, two 500/230 kV auto transformers, and one 250 MVAR capacitor. New transformer rating: 1559 MVA SN / 1940 MVA SE. New capacitor rating: 250 MVAR	BGE (81.92%) / PEPCO (18.08%)
b3780.9	Build Graceton to Batavia Road 230 kV double circuit line. New rating: 1331 MVA SN/ 1594 MVA SE	BGE (100%)
b3780.10	Install new 350 MVAR capacitor at Conastone 500 kV substation	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> BGE (100%)
b3780.13	Reconductor Batavia Road to Riverside 230 kV line. New rating: 1941 MVA SN / 2181 MVA SE	BGE (51.24%) / PEPCO (48.76%)

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.4</u></p>	<p><u>New Otter Creek to Doubs 500 kV line (MD Border - PSEG Demarcation Point). Rebuild and expand existing approximately 6 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 kV and 230 kV lines.</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPSCO (10.59%)</u></p>
<p><u>b3800.26</u></p>	<p><u>Build High Ridge 500 kV substation - Three bay breaker and half configuration</u></p>	<p><u>This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.27 ~ b3800.33</u></p>
<p><u>b3800.27</u></p>	<p><u>High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Waugh Chapel side</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (70.66%) / PEPSCO (29.34%)</u></p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.28</u>	<u>High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Brighton side</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.68%) / BGE (97.41%) / Dominion (1.91%)</u></p>
<u>b3800.29</u>	<u>High Ridge termination for the North Delta - High Ridge 500 kV line</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPCO (28.48%) / PSEG (9.24%) / RE (0.40%)</u></p>
<u>b3800.30</u>	<u>High Ridge - Install two 500/230 kV transformers</u>	<u>BGE (62.75%) / PEPCO (37.25%)</u>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.32</u></p>	<p><u>Build new North Delta – High Ridge 500 kV line (approximately 59 miles)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPSCO (28.48%) / PSEG (9.24%) / RE (0.40%)</u></p>
<p><u>b3800.34</u></p>	<p><u>Rebuild 5012 (existing Peach Bottom - Conastone) (new Graceton - Conastone) 500 kV line on single circuit structures within existing right-of-way (ROW) and cut into North Delta 500 kV and Graceton 500 kV stations</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / NEPTUNE* (0.88%) / PENELEC (1.60%) / PEPSCO (12.32%) / PSEG (14.57%) / RE (0.63%)</u></p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.36</u></p>	<p><u>Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton BGE) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (51.35%) / Dominion (32.44%) / DPL (0.01%) / JCPL (0.01%) / PEPCO (16.17%) / PSEG (0.02%)</u></p>
<p><u>b3800.37</u></p>	<p><u>Replace terminal equipment limitations at Conastone 500 kV - on the existing Peach Bottom — Conastone, future <del>or</del> (new Graceton — Conastone,) 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / NEPTUNE* (0.88%) / PENELEC (1.60%) / PEPCO (12.32%) / PSEG (14.57%) / RE (0.63%)</u></p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.41</u></p>	<p><u>Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Conastone 500 kV substation</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)</u></p>
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\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(3) Delmarva Power & Light Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2288	Build a new 138 kV line from Piney Grove – Wattsville	DPL (100%)
b2395	Reconductor the Harmony – Chapel St 138 kV circuit	DPL (100%)
b2569	Replace Terminal equipment at Silverside 69 kV substation	DPL (100%)
b2633.7	Implement high speed relaying utilizing OPGW on Red Lion – Hope Creek 500 kV line	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2633.10	Interconnect the new Silver Run 230 kV substation with existing Red Lion – Cartanza and Red Lion – Cedar Creek 230 kV lines	AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)

\*Neptune Regional Transmission System, LLC

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2695	Rebuild Worcester – Ocean Pine 69 kV ckt. 1 to 1400A capability summer emergency		DPL (100%)
b2946	Convert existing Preston 69 kV substation to DPL’s current design standard of a 3-breaker ring bus		DPL (100%)
b2947.1	Upgrade terminal equipment at DPL’s Naamans substation (Darley - Naamans 69 kV)		DPL (100%)
b2947.2	Reconductor 0.11 mile section of Darley - Naamans 69 kV circuit		DPL (100%)
b2948	Upgrade terminal equipment at DPL’s Silverside Road substation (Dupont Edge Moor – Silver R. 69 kV)		DPL (100%)
b2987	Install a 30 MVAR capacitor bank at DPL’s Cool Springs 69 kV substation. The capacitor bank would be installed in two separate 15 MVAR stages allowing DPL operational flexibility		DPL (100%)
b3143.1	Reconductor the Silverside Road – Darley 69 kV circuit		DPL (100%)
b3143.2	Reconductor the Darley – Naamans 69 kV circuit		DPL (100%)
b3143.3	Replace three (3) existing 1200 A disconnect switches with 2000 A disconnect switches and install three (3) new 2000 A disconnect switches at Silverside 69 kV station		DPL (100%)

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3143.4	Replace two (2) 1200 A disconnect switches with 2000 A disconnect switches. Replace existing 954 ACSR and 500 SDCU stranded bus with two (2) 954 ACSR stranded bus. Reconfigure four (4) CTs from 1200 A to 2000 A and install two (2) new 2000 A disconnect switches and two (2) new 954 ACSR stranded bus at Naamans 69 kV station		DPL (100%)
b3143.5	Replace four (4) 1200 A disconnect switches with 2000 A disconnect switches. Replace existing 954 ACSR and 1272 MCM AL stranded bus with two (2) 954 ACSR stranded bus. Reconfigure eight (8) CTs from 1200 A to 2000 A and install four (4) new 2000 A (310 MVA SE / 351 MVA WE) disconnect switches and two (2) new 954 ACSR (331 MVA SE / 369 MVA WE) stranded bus at Darley 69 kV station		DPL (100%)
b3155	Rebuild approx. 12 miles of Wye Mills – Stevensville line		DPL (100%)
b3224	Replace a disconnect switch and reconductor a short span of the Mt. Pleasant – Middletown tap 138 kV line		DPL (100%)

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3326	Rebuild the Vienna - Nelson 138 kV line		DPL (100%)
b3327	Upgrade the disconnect switch at Kent 69 kV station		DPL (100%)
b3328	Upgrade the disconnect switch and CT at Vienna 138 kV station		DPL (100%)
b3329	Rebuild the Farmview - Milford 138 kV line		DPL (100%)
b3330	Rebuild the Farmview - S. Harrington 138 kV line		DPL (100%)
b3331	Upgrade stranded bus and relay at Seaford 138 kV station		DPL (100%)
b3332	Rebuild the Steel - Milford 230 kV line		DPL (100%)
b3669.1	Replace terminal equipment (stranded bus, disconnect switch and circuit breaker) at Church 138 kV substation		DPL (100%)
b3669.2	Replace terminal equipment (circuit breaker) at Townsend 138 kV substation		DPL (100%)
b3670	Upgrade terminal equipment on the Loretto – Fruitland 69 kV circuit. Replace the 477 ACSR stranded bus on the 6711 line terminal inside Loretto 69 KV substation and the 500 SDCU stranded bus on the 6711 line terminal inside 69 kV Fruitland substation with 954 ACSR conductor		DPL (100%)
b3688	Replace the 4/0 SDCU stranded bus with 954 ACSR and a 600 A disconnect switch with a 1200 A disconnect switch on the 6716 line terminal inside Todd substation on Preston – Todd 69 kV line		DPL (100%)



**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3749	Rebuild the New Church - Piney Grove 138 kV line	DPL (100%)
b3800.39	<u>Red Lion - Hope Creek 500 kV - Replace terminal equipment at Red Lion substation</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (0.02%) / BGE (22.89%) / Dominion (48.61%) / DPL (9.46%) / JCPL (0.03%) / PEPCO (18.96%) / PSEG (0.03%)</u></p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(5) Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2006.1.1	Loop the 2026 (TMI – Hosensack 500 kV) line in to the Lauschtown	<p align="center"><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p align="center"><b>DFAX Allocation:</b>                      BGE (24.31%) / PPL (75.69%)</p>
b2006.2.1	Upgrade relay at South Reading on the 1072 230 V line	ME (100%)
b2006.4	Replace the South Reading 69 kV ‘81342’ breaker with 40 kA breaker	ME (100%)
b2006.5	Replace the South Reading 69 kV ‘82842’ breaker with 40 kA breaker	ME (100%)
b2452	Install 2nd Hunterstown 230/115 kV transformer	APS (8.30%) / BGE (14.70%) / DEOK (0.48%) / Dominion (36.92%) / ME (23.85%) / PEPSCO (15.75%)

\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2452.1	Reconductor Hunterstown - Oxford 115 kV line	APS (8.30%) / BGE (14.70%) / DEOK (0.48%) / Dominion (36.92%) / ME (23.85%) / PEPCO (15.75%)
b2452.3	Replace the Hunterstown 115 kV breaker '96192' with 40 kA	ME (100%)
b2588	Install a 36.6 MVAR 115 kV capacitor at North Bangor substation	ME (100%)
b2637	Convert Middletown Junction 230 kV substation to nine bay double breaker configuration.	ME (100%)
b2644	Install a 28.8 MVAR 115 kV capacitor at the Mountain substation	ME (100%)
b2688.1	Lincoln Substation: Upgrade the bus conductor and replace CTs	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RE (0.12%)
b2688.2	Germantown Substation: Replace 138/115 kV transformer with a 135/180/224 MVA bank. Replace Lincoln 115 kV breaker, install new 138 kV breaker, upgrade bus conductor and adjust/replace CTs	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RE (0.12%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.4	Upgrade terminal equipment at Hunterstown 500 kV on the Conemaugh – Hunterstown 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.4	Upgrade terminal equipment and required relay communication at TMI 500 kV: on the Beach Bottom – TMI 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2749	Replace relay at West Boyertown 69 kV station on the West Boyertown – North Boyertown 69 kV circuit	ME (100%)
b2765	Upgrade bus conductor at Gardners 115 kv substation; Upgrade bus conductor and adjust CT ratios at Carlisle Pike 115 kV	ME (100%)
b2950	Upgrade limiting 115 kV switches on the 115 kV side of the 230/115 kV Northwood substation and adjust setting on limiting ZR relay	ME (100%)
b3136	Replace bus conductor at Smith 115 kV substation	ME (100%)
b3145	Rebuild the Hunterstown – Lincoln 115 kV Line No. 962 (approx. 2.6 miles). Upgrade limiting terminal equipment at Hunterstown and Lincoln	AEP (16.60%) / APS (8.09%) / BGE (2.74%) / Dayton (2.00%) / DEOK (0.35%) / DL (1.31%) / Dominion (52.77%) / EKPC (1.54%) / OVEC (0.06%) / PEPCO (14.54%)
b3311	Install a 120.75 kV 79.4 MVAR capacitor bank at Yorkana 115 kV	ME (100%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3671	Rebuild approximately 3.6 miles of North Boyertown - West Boyertown 69 kV line. Upgrade terminal equipment (circuit breaker, disconnect switches, substation conductor) and relays at North Boyertown and West Boyertown 69 kV substation	ME (100%)
b3715.3	Install a new Allen four breaker ring bus switchyard near the existing ME Allen substation on adjacent property presently owned by FirstEnergy. Terminate the Round Top-Allen and the Allen-PPGI (PPG Industries) 115 kV lines into the new switchyard	ME (100%)
b3768	Rebuild/Reconductor the Germantown – Lincoln 115 kV line. Upgrade limiting terminal equipment at Lincoln, Germantown and Straban stations	ME (100%)
b3769	Install second TMI 500/230 kV transformer with additional 500 kV and 230 kV bus expansions	ME (45.74%) / PPL (54.26%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.2</u></p>	<p><u>Break the existing Three Mile Island - Peach Bottom 500 kV line and terminate into adjacent Otter Creek 500 kV switchyard</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPSCO (10.59%) / PPL (0.22%)</u></p>
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\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.6</u></p>	<p><u>Replace terminal equipment at TMI Peach Bottom - TMI 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (7.41%) / BGE (15.50%) / Dominion (45.08%) / DPL (2.46%) / JCPL (0.80%) / ME (0.34%) / NEPTUNE* (0.09%) / PECO (10.72%) / PEPSCO (15.72%) / PPL (0.43%) / PSEG (1.39%) / RE (0.06%)</u></p>
<p><u>b3800.10</u></p>	<p><u>Rebuild the Germantown - Lincoln 115 kV line for 230 kV double circuit construction</u></p>		<p><u>ME (100%)</u></p>
<p><u>b3800.11</u></p>	<p><u>Rebuild the Hunterstown - Lincoln 115 kV line for 230 kV double circuit construction</u></p>		<p><u>ME (100%)</u></p>
<p><u>b3800.12</u></p>	<p><u>Rebuild the Germantown - Carroll 138 kV line for 230 kV double circuit construction (MAIT Section)</u></p>		<p><u>ME (100%)</u></p>
<p><u>b3800.14</u></p>	<p><u>Construct new 230 kV Hunterstown - Carroll line (MAIT Section)</u></p>		<p><u>APS (99.86%) / ME (0.14%)</u></p>

\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<u>b3800.18</u>	<u>Add a new 230 kV breaker at the Hunterstown 230 kV substation for the new Hunterstown - Carroll 230 kV termination</u>		<u>APS (99.86%) / ME (0.14%)</u>
<u>b3800.19</u>	<u>Reconductor Lincoln - Orrtanna 115 kV line</u>		<u>ME (100%)</u>
<u>b3800.22</u>	<u>Install DTT relaying at Straban 115 kV substation</u>		<u>ME (100%)</u>
<u>b3800.23</u>	<u>Revise Relay Settings at Lincoln 115 kV substation</u>		<u>ME (100%)</u>
<u>b3800.24</u>	<u>Revise Relay Settings at Germantown 115 kV substation</u>		<u>ME (100%)</u>

**SCHEDULE 12 – APPENDIX A**

**(8) PECO Energy Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2130	Replace Waneeta 138 kV breaker '15' with 63 kA rated breaker	PECO (100%)
b2131	Replace Waneeta 138 kV breaker '35' with 63 kA rated breaker	PECO (100%)
b2132	Replace Waneeta 138 kV breaker '875' with 63 kA rated breaker	PECO (100%)
b2133	Replace Waneeta 138 kV breaker '895' with 63 kA rated breaker	PECO (100%)
b2134	Plymouth Meeting 230 kV breaker '115' with 63 kA rated breaker	PECO (100%)
b2222	Install a second Eddystone 230/138 kV transformer	PECO (100%)
b2222.1	Replace the Eddystone 138 kV #205 breaker with 63 kA breaker	PECO (100%)
b2222.2	Increase Rating of Eddystone #415 138 kV Breaker	PECO (100%)
b2236	50 MVAR reactor at Buckingham 230 kV	PECO (100%)
b2527	Replace Whitpain 230 kV breaker '155' with 80 kA breaker	PECO (100%)
b2528	Replace Whitpain 230 kV breaker '525' with 80 kA breaker	PECO (100%)
b2529	Replace Whitpain 230 kV breaker '175' with 80 kA breaker	PECO (100%)
b2549	Replace terminal equipment inside Chichester substation on the 220-36 (Chichester – Eddystone) 230 kV line	PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2550	Replace terminal equipment inside Nottingham substation on the 220-05 (Nottingham – Daleville- Bradford) 230 kV line	PECO (100%)
b2551	Replace terminal equipment inside Llanerch substation on the 130-45 (Eddystone to Llanerch) 138 kV line	PECO (100%)
b2572	Replace the Peach Bottom 500 kV ‘#225’ breaker with a 63 kA breaker	PECO (100%)
b2694	Increase ratings of Peach Bottom 500/230 kV transformer to 1479 MVA normal/1839 MVA emergency	AEC (3.97%)/ AEP (5.77%)/ APS (4.27%)/ ATSI (6.15%)/ BGE (1.63%)/ ComEd (0.72%)/ Dayton (1.06%)/ DEOK (1.97%)/ DL (2.25%)/ Dominion (0.35%)/ DPL (14.29%)/ ECP** (0.69%)/ EKPC (0.39%)/ HTP*** (0.96%)/ JCPL (6.84%) MetEd (3.28%)/ NEPTUNE* (2.14%)/ PECO (16.42%)/ PENELEC (3.94%)/ PPL (8.32%)/ PSEG (14.13%)/ RE (0.44%)
b2752.2	Tie in new Furnace Run substation to Peach Bottom – TMI 500 kV	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.3	Upgrade terminal equipment and required relay communication at Peach Bottom 500 kV: on the Beach Bottom – TMI 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)

\*Neptune Regional Transmission System, LLC

\*\* East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2766.2	Upgrade substation equipment at Peach Bottom 500 kV to increase facility rating to 2826 MVA normal and 3525 MVA emergency	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (0.72%) / APS (11.06%) / ATSI (1.43%) / BGE (34.25%) / DPL (1.83%) / PECO (1.80%) / PEPCO (35.49%) / PSEG (12.92%) / RE (0.50%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2774	Reconductor the Emilie - Falls 138 kV line, and replace station cable and relay	
b2775	Reconductor the Falls - U.S. Steel 138 kV line	PECO (100%)
b2850	Replace the Waneeta 230 kV "285" with 63 kA breaker	PECO (100%)
b2852	Replace the Chichester 230 kV "195" with 63 kA breaker	PECO (100%)
b2854	Replace the North Philadelphia 230 kV "CS 775" with 63 kA breaker	PECO (100%)
b2855	Replace the North Philadelphia 230 kV "CS 885" with 63 kA breaker	PECO (100%)
b2856	Replace the Parrish 230 kV "CS 715" with 63 kA breaker	PECO (100%)
b2857	Replace the Parrish 230 kV "CS 825" with 63 kA breaker	PECO (100%)
b2858	Replace the Parrish 230 kV "CS 935" with 63 kA breaker	PECO (100%)
b2859	Replace the Plymouth Meeting 230 kV "215" with 63 kA breaker	PECO (100%)
b2860	Replace the Plymouth Meeting 230 kV "235" with 63 kA breaker	PECO (100%)
b2861	Replace the Plymouth Meeting 230 kV "325" with 63 kA breaker	PECO (100%)
b2862	Replace the Grays Ferry 230 kV "705" with 63 kA breaker	PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2863	Replace the Grays Ferry 230 kV "985" with 63 kA breaker	PECO (100%)
b2864	Replace the Grays Ferry 230 kV "775" with 63 kA breaker	PECO (100%)
b2923	Replace the China Tap 230 kV 'CS 15' breaker with a 63 kA breaker	PECO (100%)
b2924	Replace the Emilie 230 kV 'CS 15' breaker with 63 kA breaker	PECO (100%)
b2925	Replace the Emilie 230 kV 'CS 25' breaker with 63 kA breaker	PECO (100%)
b2926	Replace the Chichester 230 kV '215' breaker with 63 kA breaker	PECO (100%)
b2927	Replace the Plymouth Meeting 230 kV '125' breaker with 63 kA breaker	PECO (100%)
b2985	Replace the 230 kV CB #225 at Linwood Substation (PECO) with a double circuit breaker (back to back circuit breakers in one device)	PECO (100%)
b3041	Peach Bottom – Furnace Run 500 kV terminal equipment	PECO (100%)
b3120	Replace the Whitpain 230 kV breaker "125" with a 63 kA breaker	PECO (100%)
b3138	Move 2 MVA load from the Roxborough to Bala substation. Adjust the tap setting on the Master 138/69 kV transformer #2	PECO (100%)
b3146	Upgrade the Richmond 69 kV breaker "140" with 40 kA breaker	PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3697	Replace station conductor and metering inside Whitpain and Plymouth 230 kV substations to increase the ratings of the Whitpain – Plymouth 230 kV line	PECO (100%)
b3728.2	Replace 4 meters and bus work inside Peach Bottom substation on the 500 kV Line 5012 (Conastone – Peach Bottom)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      APS (3.94%) / ATSI (0.03%) / BGE (20.78%) / DL (0.01%) / DPL (0.02%) / Dominion (31.75%) / JCPL (6.99%) / NEPTUNE* (0.80%) / PECO (0.98%) / PEPCO (17.52%) / PPL (2.69%) / PSEG (13.93%) / RE (0.56%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3780.1	Peach Bottom North upgrades – 500 kV substation work. Add 3x 500 kV breakers to form a breaker-and-a-half bay		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.02%) / BGE (28.40%) / Dominion (33.36%) / DPL (0.02%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PECO (0.01%) / PEPCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>
b3780.2	Peach Bottom to Graceton (PECO) new 500 kV transmission line. New rating: 4503 MVA SN/5022 MVA SE		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.02%) / BGE (28.40%) / Dominion (33.36%) / DPL (0.02%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PECO (0.01%) / PEPCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>
b3780.3	West Cooper substation work includes 3 breaker ring, 500/230 kV transformer, control house, substation build, and reconfigure Cooper distribution station feed. New transformer rating: 1559		DPL (41.52%) / PECO (58.48%)

	MVA SN/ 1940 MVA SE		
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\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

**Required Transmission Enhancements      Annual Revenue Requirement      Responsible Customer(s)**

<p><u>b3800.5</u></p>	<p><u>Replace terminal equipment at Peach Bottom on Peach Bottom - TMI 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (6.40%) / BGE (20.32%) / DPL (9.76%) / JCPL (17.57%) / NEPTUNE* (1.73%) / PECO (6.33%) / PEPCO (7.48%) / PSEG (29.15%) / RE (1.26%)</u></p>
<p><u>b3800.31</u></p>	<p><u>Build new North Delta – High Ridge 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</u></p>

**\*Neptune Regional Transmission System, LLC**

**PECO Energy Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.35</u></p>	<p><u>Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton PECO) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (49.42%) / Dominion (31.22%) / DPL (0.01%) / JCPL (0.01%) / PECO (3.75%) / PEPCO (15.57%) / PSEG (0.02%)</u></p>
<p><u>b3800.42</u></p>	<p><u>Peach Bottom North 500 kV bus upgrade - Replace 11 instances of strain bus conductor used for breaker drops or CT drops, seven 500 kV disconnect switches, seven Free Standing CTs, one 500 kV breaker, two breaker relays or meters</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (62.82%) / DPL (7.25%) / JCPL (0.09%) / NEPTUNE* (0.01%) / PECO (0.01%) / PEPCO (29.63%) / PSEG (0.18%) / RE (0.01%)</u></p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.44</u></p>	<p><u>North Delta termination for the North Delta - High Ridge 500 kV line (PECO work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</u></p>
<p><u>b3800.45</u></p>	<p><u>North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / NEPTUNE* (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)</u></p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.46</u></p>	<p><u>North Delta 500 kV termination for the new Peach Bottom - North Delta 500 kV line (PECO work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</u></p>
<p><u>b3800.47</u></p>	<p><u>Build new Peach Bottom South - North Delta 500 kV line – cut in to Peach Bottom tie No.1 and extending line to North Delta (Approximately 1.25 miles new ROW)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</u></p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(9) PPL Electric Utilities Corporation**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1813.12	Replace the Blooming Grove 230 kV breaker 'Peckville'	PPL (100%)
b2223	Rebuild and reconductor 2.6 miles of the Sunbury - Dauphin 69 kV circuit	PPL (100%)
b2224	Add a 2nd 150 MVA 230/69 kV transformer at Springfield	PPL (100%)
b2237	150 MVAR shunt reactor at Alburdis 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PPL (100%)
b2238	100 MVAR shunt reactor at Elimspport 230 kV	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2269	Rebuild approximately 23.7 miles of the Susquehanna - Jenkins 230 kV circuit. This replaces a temporary SPS that is already planned to mitigate the violation until this solution is implemented	PPL (100%)
b2282	Rebuild the Siegfried-Frackville 230 kV line	PPL (100%)
b2406.1	Rebuild Stanton-Providence 69 kV 2&3 9.5 miles with 795 SCSR	PPL (100%)
b2406.2	Reconductor 7 miles of the Lackawanna - Providence 69 kV #1 and #2 with 795 ACSR	PPL (100%)
b2406.3	Rebuild SUB2 Tap 1 (Lackawanna - Scranton 1) 69 kV 1.5 miles 556 ACSR	PPL (100%)
b2406.4	Rebuild SUB2 Tap 2 (Lackawanna - Scranton 1) 69 kV 1.6 miles 556 ACSR	PPL (100%)
b2406.5	Create Providence - Scranton 69 kV #1 and #2, 3.5 miles with 795 ACSR	PPL (100%)
b2406.6	Rebuild Providence 69 kV switchyard	PPL (100%)
b2406.7	Install 2 - 10.8 MVAR capacitors at EYNO 69 kV	PPL (100%)
b2406.8	Rebuild Stanton 230 kV yard	PPL (100%)

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2446	Replace wave trap and protective relays at Montour	PPL (100%)
b2447	Replace wave trap and protective relays at Montour	PPL (100%)
b2448	Install a 2nd Sunbury 900 MVA 500-230 kV transformer and associated equipment	PPL (100%)
b2552.2	Reconductor the North Meshoppen - Oxbow – Lackawanna 230 kV circuit and upgrade terminal equipment (PPL portion)	PENELEC (72.85%) / PPL (27.15%)
b2574	Replace the Sunbury 230 kV ‘MONTOUR NORT’ breaker with a 63 kA breaker	PPL (100%)
b2690	Reconductor two spans of the Graceton – Safe Harbor 230 kV transmission line. Includes termination point upgrades	PPL (100%)
b2691	Reconductor three spans limiting Brunner Island – Yorkana 230 kV line, add 2 breakers to Brunner Island switchyard, upgrade associated terminal equipment	PPL (100%)

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2716	Add a 200 MVAR shunt reactor at Lackawanna 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      PPL (100%)</p>
b2754.1	Install 7 miles of optical ground wire (OPGW) between Gilbert and Springfield 230 kV substations	PPL (100%)
b2754.4	Use ~ 40 route miles of existing fibers on PPL 230 kV system to establish direct fiber circuits	PPL (100%)
b2754.5	Upgrade relaying at Martins Creek 230 kV	PPL (100%)
b2756	Install 2% reactors at Martins Creek 230 kV	PPL (100%)
b2813	Expand existing Lycoming 69 kV yard to double bus double breaker arrangement	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2824	Reconfigure/Expand the Lackawanna 500 kV substation by adding a third bay with three breakers	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      PPL (100%)</p>
b2838	Build a new 230/69 kV substation by tapping the Montour – Susquehanna 230 kV double circuits and Berwick – Hunlock & Berwick – Colombia 69 kV circuits	PPL (100%)
b2979	Replace Martins Creek 230 kV circuit breakers with 80 kA rating	PPL (100%)
b3221	Replace terminal equipment (bus conductor) on the 230 kV side of the Steel City 500/230 kV Transformer #1	PPL (100%)
b3222	Install one (1) 7.2 MVAR fixed cap bank on the Lock Haven – Reno 69 kV line and one (1) 7.2 MVAR fixed cap bank on the Lock Haven – Flemington 69 kV line near the Flemington 69/12 kV substation	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3664	Replace the limiting 230 kV T2 transformer leads, bay conductor and bus conductor with double bundle 1590 ACSR at the Juniata station; Replace the limiting 1200 A MODs on the bus tie breaker with 3000 A MODs	PPL (100%)
b3698	Reconductor the 14.2 miles of the existing Juniata –Cumberland 230 kV line with 1272 ACSS/TW HS285 "Pheasant" conductor	AEC (4.17%) / BGE (13.18%) / DEOK (1.22%) / Dominion (3.25%) / DPL (9.14%) / ECP** (0.11%) / EKPC (0.22%) / HTP*** (0.20%) /JCPL (1.15%) / ME (27.02%) / NEPTUNE* (0.64%) / PECO (18.88%) / PEPCO (4.68%) / PSEG (16.14%)
b3715.1	Install a new 300 MVA 230/115 kV transformer at the existing PPL Williams Grove substation	ME (100%)
b3715.2	Construct a new approximately 3.4 miles 115 kV single circuit transmission line from Williams Grove to Allen substation	ME (100%)

\* Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3774	Upgrade terminal equipment at Brunner Island station on Brunner Island – Yorkana 230 kV line		PPL (100%)
<u>b3800.1</u>	<u>Build a New Otter Creek 500 kV (Collinsville) switching station with two bay three breaker configuration</u>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) /</u>  <u>APS (5.76%) / ATSI (8.04%) /</u>  <u>BGE (4.11%) / ComEd (13.39%)</u>  <u>/ Dayton (2.12%) / DEOK</u>  <u>(3.25%) / DL (1.71%) /</u>  <u>Dominion (13.32%) / DPL</u>  <u>(2.60%) / EKPC (1.89%) / JCPL</u>  <u>(3.86%) / ME (1.90%) /</u>  <u>NEPTUNE* (0.42%) / OVEC</u>  <u>(0.08%) / PECO (5.40%) /</u>  <u>PENELEC (1.78%) / PEPCO</u>  <u>(3.67%) / PPL (4.72%) / PSEG</u>  <u>(6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.71%) /</u>  <u>Dominion (74.28%) / DPL</u>  <u>(0.36%) / PECO (0.68%) /</u>  <u>PEPCO (10.59%) / PPL (0.22%)</u></p>

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p>b3800.3</p>	<p><u>New Otter Creek (Collinsville) to Doubs 500 kV Line (Otter Creek 500 kV - MD Border). Rebuild and expand existing approximately 12 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 and 230 kV lines</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)</u></p>
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\* Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(10) Potomac Electric Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2279 Add two 100 MVAR reactors at Dickerson Station H and two 100 MVAR reactors at Brighton 230 kV substation		PEPCO (100%)
b2372 Upgrade the Chalk Point - T133TAP 230 kV Ck. 1 (23063) and Ckt. 2 (23065) to 1200 MVA ACCR		BGE (100%)
b3780.11 Add a 350 MVAR STATCOM and a 350 MVAR capacitor at Brighton 500 kV substation		<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PEPCO (100%)
b3780.12 Add a 250 MVAR capacitor at Burchess Hill 500 kV substation		<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PEPCO (100%)

\*Neptune Regional Transmission System, LLC

The Annual Revenue Requirement associated with the Transmission Enhancement Charges are set forth and determined in Appendix A to Attachment H-9.

**Potomac Electric Power Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.33</u></p>	<p><u>Replace terminal equipment limitations at Brighton 500 kV - on the existing Brighton - Waugh Chapel 500 kV (5053) line or the new Brighton - High Ridge 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.68%) / BGE (86.77%) / Dominion (1.91%) / PEPCO (10.64%)</u></p>
<p><u>b3800.38</u></p>	<p><u>Chalk Point - <del>Cheltenham</del>Cheltenham 500 kV line (5073 line) - Replace relay at Chalk Point 500 kV substation</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (39.75%) / Dominion (59.03%) / PEPCO (1.22%)</u></p>

\*Neptune Regional Transmission System, LLC

**Potomac Electric Power Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.40</u></p>	<p><u>Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Brighton 500 kV substation</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)</u></p>
<p><u>b3800.243</u></p>	<p><u>Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen (the 500 kV portion of the work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)</u></p>
<p><u>b3800.244</u></p>	<p><u>Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen (the 230 kV portion of the project)</u></p>		<p><u>APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPCO (26.97%)</u></p>

\*Neptune Regional Transmission System, LLC

**Potomac Electric Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<u>b3800.245</u>	<u>Reconfigure Dickerson H 230 kV substation and upgrade terminal equipment</u>		<u>APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPCO (26.97%)</u>
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**SCHEDULE 12 – APPENDIX A**

**(12) Public Service Electric and Gas Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2218	Rebuild 4 miles of overhead line from Edison - Meadow Rd - Metuchen (Q 1317)	PSEG (100%)
b2239	50 MVAR reactor at Saddlebrook 230 kV	PSEG (100%)
b2240	50 MVAR reactor at Athenia 230 kV	PSEG (100%)
b2241	50 MVAR reactor at Bergen 230 kV	PSEG (100%)
b2242	50 MVAR reactor at Hudson 230 kV	PSEG (100%)
b2243	Two 50 MVAR reactors at Stanley Terrace 230 kV	PSEG (100%)
b2244	50 MVAR reactor at West Orange 230 kV	PSEG (100%)
b2245	50 MVAR reactor at Aldene 230 kV	PSEG (100%)
b2246	150 MVAR reactor at Camden 230 kV	PSEG (100%)
b2247	150 MVAR reactor at Gloucester 230 kV	PSEG (100%)
b2248	50 MVAR reactor at Clarksville 230 kV	PSEG (100%)
b2249	50 MVAR reactor at Hinchmans 230 kV	PSEG (100%)
b2250	50 MVAR reactor at Beaverbrook 230 kV	PSEG (100%)
b2251	50 MVAR reactor at Cox's Corner 230 kV	PSEG (100%)

The Annual Revenue Requirement for all Public Service Electric and Gas Company Projects (Required Transmission Enhancements) in this Section 12 shall be as specified in Attachment 7 of Attachment H-10A and under the procedures detailed in Attachment H-10B.

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2276	Eliminate the Sewaren 138 kV bus by installing a new 230 kV bay at Sewaren 230 kV	
b2276.1	Convert the two 138 kV circuits from Sewaren – Metuchen to 230 kV circuits including Lafayette and Woodbridge substation	
b2276.2	Reconfigure the Metuchen 230 kV station to accommodate the two converted circuits	
b2290	Replace disconnect switches at Kilmer, Lake Nilson and Greenbrook 230 kV substations on the Raritan River - Middlesex (I-1023) circuit	
b2291	Replace circuit switcher at Lake Nelson 230 kV substation on the Raritan River - Middlesex (W-1037) circuit	
b2295	Replace the Salem 500 kV breaker 10X with 63 kA breaker	
b2421	Install all 69 kV lines to interconnect Plainfield, Greenbrook, and Bridgewater stations and establish the 69 kV network	
b2421.1	Install two 18 MVAR capacitors at Plainfield and S. Second St substation	

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2421.2	Install a second four (4) breaker 69 kV ring bus at Bridgewater Switching Station		PSEG (100%)
b2436.10	Convert the Bergen – Marion 138 kV path to double circuit 345 kV and associated substation upgrades		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>
b2436.21	Convert the Marion - Bayonne "L" 138 kV circuit to 345 kV and any associated substation upgrades		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.22	Convert the Marion - Bayonne "C" 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.33	Construct a new Bayway – Bayonne 345 kV circuit and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2436.34	Construct a new North Ave – Bayonne 345 kV circuit and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.50	Construct a new North Ave - Airport 345 kV circuit and any associated substation upgrades	PSEG (100%)
b2436.60	Relocate the underground portion of North Ave - Linden "T" 138 kV circuit to Bayway, convert it to 345 kV, and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2436.70	Construct a new Airport - Bayway 345 kV circuit and any associated substation upgrades	PSEG (100%)
b2436.81	Relocate the overhead portion of Linden - North Ave "T" 138 kV circuit to Bayway, convert it to 345 kV, and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>            AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>            PSEG (96.26%) / RE (3.74%)</p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.83	Convert the Bayway - Linden "Z" 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.84	Convert the Bayway – Linden “W” 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.85	Convert the Bayway – Linden “M” 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.90	Relocate Farragut - Hudson "B" and "C" 345 kV circuits to Marion 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>
b2436.91	Relocate the Hudson 2 generation to inject into the 345 kV at Marion and any associated upgrades	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2437.10	New Bergen 345/230 kV transformer and any associated substation upgrades	PSEG (100%)
b2437.11	New Bergen 345/138 kV transformer #1 and any associated substation upgrades	PSEG (100%)
b2437.20	New Bayway 345/138 kV transformer #1 and any associated substation upgrades	PSEG (100%)
b2437.21	New Bayway 345/138 kV transformer #2 and any associated substation upgrades	PSEG (100%)
b2437.30	New Linden 345/230 kV transformer and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2437.33	New Bayonne 345/69 kV transformer and any associated substation upgrades	PSEG (100%)
b2438	Install two reactors at Tosco 230 kV	PSEG (100%)
b2439	Replace the Tosco 138 kV breaker 'CB1/2 (CBT)' with 63 kA	PSEG (100%)
b2474	Rebuild Athenia 138 kV to 80 kA	PSEG (100%)
b2589	Install a 100 MVAR 230 kV shunt reactor at Mercer station	PSEG (100%)
b2590	Install two 75 MVAR 230 kV capacitors at Sewaren station	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.3	Install an SVC at New Freedom 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)</p>
b2633.4	Add a new 500 kV bay at Hope Creek (Expansion of Hope Creek substation)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)</p>

\* Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.5	Add a new 500/230 kV autotransformer at Hope Creek and a new Hope Creek 230 kV substation	AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)
b2633.8	Implement high speed relaying utilizing OPGW on Salem – Orchard 500 kV, Hope Creek – New Freedom 500 kV, New Freedom - Salem 500 kV, Hope Creek – Salem 500 kV, and New Freedom – Orchard 500 kV lines	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p>
		<p><b>DFAX Allocation:</b>                      AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)</p>

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.91	Implement changes to the tap settings for the two Salem units' step up transformers	AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2633.92	Implement changes to the tap settings for the Hope Creek unit's step up transformers	AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2702	Install a 350 MVAR reactor at Roseland 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)
		<b>DFAX Allocation:</b> PSEG (100%)
b2703	Install a 100 MVAR reactor at Bergen 230 kV	PSEG (100%)
b2704	Install a 150 MVAR reactor at Essex 230 kV	PSEG (100%)
b2705	Install a 200 MVAR reactor (variable) at Bergen 345 kV	PSEG (100%)
b2706	Install a 200 MVAR reactor (variable) at Bayway 345 kV	PSEG (100%)
b2707	Install a 100 MVAR reactor at Bayonne 345 kV	PSEG (100%)

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2712	Replace the Bergen 138 kV '40P' breaker with 80 kA breaker	PSEG (100%)
b2713	Replace the Bergen 138 kV '90P' breaker with 80 kA breaker	PSEG (100%)
b2722	Reconductor the 1 mile Bergen – Bergen GT 138 kV circuit (B-1302)	PSEG (100%)
b2755	Build a third 345 kV source into Newark Airport	PSEG (100%)
b2810.1	Install second 230/69 kV transformer at Cedar Grove	PSEG (100%)
b2810.2	Build a new 69 kV circuit from Cedar Grove to Great Notch	PSEG (100%)
b2811	Build 69 kV circuit from Locust Street to Delair	PSEG (100%)
b2812	Construct River Road to Tonnelle Avenue 69kV Circuit	PSEG (100%)
b2825.1	Install 2X50 MVAR shunt reactors at Kearny 230 kV substation	PSEG (100%)
b2825.2	Increase the size of the Hudson 230 kV, 2X50 MVAR shunt reactors to 2X100 MVAR	PSEG (100%)
b2825.3	Install 2X100 MVAR shunt reactors at Bayway 345 kV substation	PSEG (100%)
b2825.4	Install 2X100 MVAR shunt reactors at Linden 345 kV substation	PSEG (100%)
b2835	Convert the R-1318 and Q1317 (Edison – Metuchen) 138 kV circuits to one 230 kV circuit	See sub-IDs for cost allocations

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2835.1	Convert the R-1318 and Q-1317 (Edison – Metuchen) 138 kV circuits to one 230 kV circuit (Brunswick – Meadow Road)	AEC (30.19%) / PECO (69.81%)
b2835.2	Convert the R-1318 and Q-1317 (Edison - Metuchen) 138 kV circuits to one 230 kV circuit (Meadow Road - Pierson Ave)	AEC (30.21%) / PECO (69.79%)
b2835.3	Convert the R-1318 and Q-1317 (Edison - Metuchen) 138 kV circuits to one 230 kV circuit (Pierson Ave - Metuchen)	AEC (30.21%) / PECO (69.79%)
b2836	Convert the N-1340 and T-1372/D-1330 (Brunswick – Trenton) 138 kV circuits to 230 kV circuits	See sub-IDs for cost allocations
b2836.1	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Hunterglen)	AEC (100%)
b2836.2	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Hunterglen - Trenton)	AEC (49.19%) / NEPTUNE* (50.81%)
b2836.3	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Devils Brook)	PSEG (100%)
b2836.4	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Devils Brook - Trenton)	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2837	Convert the F-1358/Z1326 and K1363/Y-1325 (Trenton – Burlington) 138 kV circuits to 230 kV circuits	See sub-IDs for cost allocations
b2837.1	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Trenton - Yardville K)	NEPTUNE* (100%)
b2837.2	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Yardville - Ward Ave K)	NEPTUNE* (8.89%) / PSEG (87.70%) / RE (3.41%)
b2837.3	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Devils Brook)	NEPTUNE* (8.27%) / PSEG (88.30%) / RE (3.43%)
b2837.4	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Crosswicks - Bustleton Y)	NEPTUNE* (6.79%) / PSEG (89.73%) / RE (3.48%)
b2837.5	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Bustleton - Burlington Y)	NEPTUNE* (5.62%) / PSEG (90.85%) / RE (3.53%)
b2837.6	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Trenton - Yardville F)	NEPTUNE* (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2837.7 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Yardville - Ward Ave F)		NEPTUNE* (100%)
b2837.8 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Ward Ave - Crosswicks Z)		NEPTUNE* (100%)
b2837.9 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Crosswicks - Williams Z)		NEPTUNE* (8.22%) / PSEG (88.35%) / RE (3.43%)
b2837.10 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Williams - Bustleton Z)		NEPTUNE* (6.71%) / PSEG (89.80%) / RE (3.49%)
b2837.11 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Bustleton - Burlington Z)		NEPTUNE* (5.20%) / PSEG (91.26%) / RE (3.54%)
b2870 Build new 138/26 kV Newark GIS station in a building (layout #1A) located adjacent to the existing Newark Switch and demolish the existing Newark Switch		PSEG (100%)
b2933 Third Source for Springfield Rd. and Stanley Terrace Stations		See sub-IDs for cost allocations

\* Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2933.1	Construct a 230/69 kV station at Springfield	PSEG (100%)
b2933.2	Construct a 230/69 kV station at Stanley Terrace	PSEG (100%)
b2933.31	Construct a 69 kV network between Front Street, Springfield and Stanley Terrace (Front Street - Springfield)	NEPTUNE* (100%)
b2933.32	Construct a 69 kV network between Front Street, Springfield and Stanley Terrace (Springfield – Stanley Terrace)	PSEG (100%)
b2934	Build a new 69 kV line between Hasbrouck Heights and Carlstadt	PSEG (100%)
b2935	Third Supply for Runnemede 69 kV and Woodbury 69 kV	PSEG (100%)
b2935.1	Build a new 230/69 kV switching substation at Hilltop utilizing the PSE&G property and the K-2237 230 kV line	PSEG (100%)
b2935.2	Build a new line between Hilltop and Woodbury 69 kV providing the 3rd supply	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2935.3	Convert Runnemedede’s straight bus to a ring bus and construct a 69 kV line from Hilltop to Runnemedede 69 kV	PSEG (100%)
b2955	Wreck and rebuild the VFT – Warinanco – Aldene 230 kV circuit with paired conductor	JCPL (91.73%) / NEPTUNE* (8.27%)
b2956	Replace existing cable on Cedar Grove - Jackson Rd. with 5000 kcmil XLPE cable	PSEG (100%)
b2982	Construct a 230/69 kV station at Hillsdale Substation and tie to Paramus and Dumont at 69 kV	PSEG (100%)
b2982.1	Install a 69 kV ring bus and one (1) 230/69 kV transformer at Hillsdale	PSEG (100%)
b2982.2	Construct a 69 kV network between Paramus, Dumont, and Hillsdale Substation using existing 69 kV circuits	PSEG (100%)
b2983	Convert Kuller Road to a 69/13 kV station	PSEG (100%)
b2983.1	Install 69 kV ring bus and two (2) 69/13 kV transformers at Kuller Road	PSEG (100%)
b2983.2	Construct a 69 kV network between Kuller Road, Passaic, Paterson, and Harvey (new Clifton area switching station)	PSEG (100%)
b2986	Replace the existing Roseland – Branchburg – Pleasant Valley 230 kV corridor with new structures	See sub-IDs for cost allocations

\* Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2986.11	Roseland-Branchburg 230 kV corridor rebuild (Roseland - Readington)	PSEG (100%)
b2986.12	Roseland-Branchburg 230 kV corridor rebuild (Readington - Branchburg)	JCPL (100%)
b2986.21	Branchburg-Pleasant Valley 230 kV corridor rebuild (Branchburg - East Flemington)	PECO (100%)
b2986.22	Branchburg-Pleasant Valley 230 kV corridor rebuild (East Flemington - Pleasant Valley)	NEPTUNE* (0.77%) / PECO (99.23%)
b2986.23	Branchburg-Pleasant Valley 230 kV corridor rebuild (Pleasant Valley - Rocktown)	JCPL (31.39%) / NEPTUNE* (5.26%) / PECO (6.68%) / PSEG (54.43%) / RE (2.23%)
b2986.24	Branchburg-Pleasant Valley 230 kV corridor rebuild (the PSEG portion of Rocktown - Buckingham)	JCPL (37.95%) / NEPTUNE* (4.70%) / PECO (5.38%) / PSEG (49.92%) / RE (2.05%)
b3003	Construct a 230/69 kV station at Maywood	PSEG (100%)
b3003.1	Purchase properties at Maywood to accommodate new construction	PSEG (100%)
b3003.2	Extend Maywood 230 kV bus and install one (1) 230 kV breaker	PSEG (100%)
b3003.3	Install one (1) 230/69 kV transformer at Maywood	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3003.4	Install Maywood 69 kV ring bus	PSEG (100%)
b3003.5	Construct a 69 kV network between Spring Valley Road, Hasbrouck Heights, and Maywood	PSEG (100%)
b3004	Construct a 230/69/13 kV station by tapping the Mercer – Kuser Rd 230 kV circuit	PSEG (100%)
b3004.1	Install a new Clinton 230 kV ring bus with one (1) 230/69 kV transformer Mercer - Kuser Rd 230 kV circuit	PSEG (100%)
b3004.2	Expand existing 69 kV ring bus at Clinton Ave with two (2) additional 69 kV breakers	PSEG (100%)
b3004.3	Install two (2) 69/13 kV transformers at Clinton Ave	PSEG (100%)
b3004.4	Install 18 MVAR capacitor bank at Clinton Ave 69 kV	PSEG (100%)
b3025	Construct two (2) new 69/13 kV stations in the Doremus area and relocate the Doremus load to the new stations	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3025.1	Install a new 69/13 kV station (Vauxhall) with a ring bus configuration	PSEG (100%)
b3025.2	Install a new 69/13 kV station (19th Ave) with a ring bus configuration	PSEG (100%)
b3025.3	Construct a 69 kV network between Stanley Terrace, Springfield Road, McCarter, Federal Square, and the two new stations (Vauxhall & 19th Ave)	PSEG (100%)
b3703	Construct a third 69 kV supply line from Penns Neck substation to West Windsor substation	PSEG (100%)
b3704	Replace the Lawrence switching station 230/69 kV Transformer No. 220-4 and its associated circuit switchers with a new larger capacity transformer with load tap changer (LTC) and new dead tank circuit breaker. Install a new 230 kV gas insulated breaker, associated disconnects, overhead bus and other necessary equipment to complete the bay within the Lawrence 230 kV switchyard	PSEG (100%)
b3705	Replace existing 230/138 kV Athenia Transformer No. 220-1	PSEG (100%)
b3706	Replace Fair Lawn 230/138 kV transformer No. 220-1 with an existing O&M system spare at Burlington	PSEG (100%)
b3716	Construct a third 69 kV supply line from Totowa substation to the customer's substation	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3719	Replace the two existing 1200A Bergen 138 kV circuit switchers with two 138 kV disconnect switches to achieve a minimum summer normal device rating of 298 MVA and a minimum summer emergency rating of 454 MVA	PSEG (100%)
b3757	Convert existing Medford 69 kV straight bus to seven-breaker ring bus, construct a new 230/69 kV transformer at Cox's Corner station and a new 69 kV line from Cox's Corner station to Medford station	PSEG (100%)
b3800.7	<u>Construct 38 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (BGE zone portion)</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)</u></p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<p><u>b3800.43</u></p>	<p><u>Construct 31.5 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (APS Section)</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)</u></p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(14) Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2117 Reconductor 0.33 miles of the Parkersburg - Belpre line and upgrade Parkersburg terminal equipment		APS (100%)
b2118 Add 44 MVAR Cap at New Martinsville		APS (100%)
b2120 Six-Wire Lake Lynn - Lardin 138 kV circuits		APS (100%)
b2142 Replace Weirton 138 kV breaker “Wylie Ridge 210” with 63 kA breaker		APS (100%)
b2143 Replace Weirton 138 kV breaker “Wylie Ridge 216” with 63 kA breaker		APS (100%)
b2174.8 Replace relays at Mitchell substation		APS (100%)
b2174.9 Replace primary relay at Piney Fork substation		APS (100%)
b2174.10 Perform relay setting changes at Bethel Park substation		APS (100%)
b2213 Armstrong Substation: Relocate 138 kV controls from the generating station building to new control building		APS (100%)
b2214 Albright Substation: Install a new control building in the switchyard and relocate controls and SCADA equipment from the generating station building the new control center		APS (100%)
b2215 Rivesville Switching Station: Relocate controls and SCADA equipment from the generating station building to new control building		APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2216	Willow Island: Install a new 138 kV cross bus at Belmont Substation and reconnect and reconfigure the 138 kV lines to facilitate removal of the equipment at Willow Island switching station	APS (100%)
b2235	130 MVAR reactor at Monocacy 230 kV	APS (100%)
b2260	Install a 32.4 MVAR capacitor at Bartonville	APS (100%)
b2261	Install a 33 MVAR capacitor at Damascus	APS (100%)
b2267	Replace 1000 Cu substation conductor and 1200 amp wave trap at Marlowe	APS (100%)
b2268	Reconductor 6.8 miles of 138kV 336 ACSR with 336 ACSS from Double Toll Gate to Riverton	APS (100%)
b2299	Reconductor from Collins Ferry - West Run 138 kV with 556 ACSS	APS (100%)
b2300	Reconductor from Lake Lynn - West Run 138 kV	APS (100%)
b2341	Install 39.6 MVAR Capacitor at Shaffers Corner 138 kV Substation	APS (100%)
b2342	Construct a new 138 kV switching station (Shuman Hill substation), which is next the Mobley 138 kV substation and install a 31.7 MVAR capacitor	APS (100%)
b2343	Install a 31.7 MVAR capacitor at West Union 138 kV substation	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2362	Install a 250 MVAR SVC at Squab Hollow 230 kV	APS (100%)
b2362.1	Install a 230 kV breaker at Squab Hollow 230 kV substation	APS (100%)
b2363	Convert the Shingletown 230 kV bus into a 6 breaker ring bus	APS (100%)
b2364	Install a new 230/138 kV transformer at Squab Hollow 230 kV substation. Loop the Forest - Elko 230 kV line into Squab Hollow. Loop the Brookville - Elko 138 kV line into Squab Hollow	APS (100%)
b2412	Install a 44 MVAR 138 kV capacitor at the Hempfield 138 kV substation	APS (100%)
b2433.1	Install breaker and a half 138 kV substation (Waldo Run) with 4 breakers to accommodate service to MarkWest Sherwood Facility including metering which is cut into Glen Falls Lamberton 138 kV line	APS (100%)
b2433.2	Install a 70 MVAR SVC at the new WaldoRun 138 kV substation	APS (100%)
b2433.3	Install two 31.7 MVAR capacitors at the new WaldoRun 138 kV substation	APS (100%)
b2424	Replace the Weirton 138 kV breaker 'WYLIE RID210' with 63 kA breakers	APS (100%)
b2425	Replace the Weirton 138 kV breaker 'WYLIE RID216' with 63 kA breakers	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2426	Replace the Oak Grove 138 kV breaker 'OG1' with 63 kA breakers	APS (100%)
b2427	Replace the Oak Grove 138 kV breaker 'OG2' with 63 kA breakers	APS (100%)
b2428	Replace the Oak Grove 138 kV breaker 'OG3' with 63 kA breakers	APS (100%)
b2429	Replace the Oak Grove 138 kV breaker 'OG4' with 63 kA breakers	APS (100%)
b2430	Replace the Oak Grove 138 kV breaker 'OG5' with 63 kA breakers	APS (100%)
b2431	Replace the Oak Grove 138 kV breaker 'OG6' with 63 kA breakers	APS (100%)
b2432	Replace the Ridgeley 138 kV breaker 'RC1' with a 40 kA rated breaker	APS (100%)
b2440	Replace the Cabot 138kV breaker 'C9-KISKI VLY' with 63kA	APS (100%)
b2472	Replace the Ringgold 138 kV breaker 'RCM1' with 40kA breakers	APS (100%)
b2473	Replace the Ringgold 138 kV breaker '#4 XMFR' with 40kA breakers	APS (100%)
b2475	Construct a new line between Oak Mound 138 kV substation and Waldo Run 138 kV substation	APS (100%)
b2545.1	Construct a new 138 kV substation (Shuman Hill substation) connected to the Fairview –Willow Island (84) 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2545.2	Install a ring bus station with five active positions and two 52.8 MVAR capacitors with 0.941 mH reactors	APS (100%)
b2545.3	Install a +90/-30 MVAR SVC protected by a 138 kV breaker	APS (100%)
b2545.4	Remove the 31.7 MVAR capacitor bank at Mobley 138 kV	APS (100%)
b2546	Install a 51.8 MVAR (rated) 138 kV capacitor at Nyswaner 138 kV substation	APS (100%)
b2547.1	Construct a new 138 kV six breaker ring bus Hillman substation	APS (100%)
b2547.2	Loop Smith- Imperial 138 kV line into the new Hillman substation	APS (100%)
b2547.3	Install +125/-75 MVAR SVC at Hillman substation	APS (100%)
b2547.4	Install two 31.7 MVAR 138 kV capacitors	APS (100%)
b2548	Eliminate clearance de-rate on Wylie Ridge – Smith 138 kV line and upgrade terminals at Smith 138 kV, new line ratings 294 MVA (Rate A)/350 MVA (Rate B)	APS (100%)
b2612.1	Relocate All Dam 6 138 kV line and the 138 kV line to AE units 1&2	APS (100%)
b2612.2	Install 138 kV, 3000A bus-tie breaker in the open bus-tie position next to the Shaffers corner 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2612.3	Install a 6-pole manual switch, foundation, control cable, and all associated facilities	APS (100%)
b2666	Yukon 138 kV Breaker Replacement	APS (100%)
b2666.1	Replace Yukon 138 kV breaker “Y-11(CHARL1)” with an 80 kA breaker	APS (100%)
b2666.2	Replace Yukon 138 kV breaker “Y-13(BETHEL)” with an 80 kA breaker	APS (100%)
b2666.3	Replace Yukon 138 kV breaker “Y-18(CHARL2)” with an 80 kA breaker	APS (100%)
b2666.4	Replace Yukon 138 kV breaker “Y-19(CHARL2)” with an 80 kA breaker	APS (100%)
b2666.5	Replace Yukon 138 kV breaker “Y-4(4B-2BUS)” with an 80 kA breaker	APS (100%)
b2666.6	Replace Yukon 138 kV breaker “Y-5(LAYTON)” with an 80 kA breaker	APS (100%)
b2666.7	Replace Yukon 138 kV breaker “Y-8(HUNTING)” with an 80 kA breaker	APS (100%)
b2666.8	Replace Yukon 138 kV breaker “Y-9(SPRINGD)” with an 80 kA breaker	APS (100%)
b2666.9	Replace Yukon 138 kV breaker “Y-10(CHRL-SP)” with an 80 kA breaker	APS (100%)
b2666.10	Replace Yukon 138 kV breaker “Y-12(1-1BUS)” with an 80 kA breaker	APS (100%)
b2666.11	Replace Yukon 138 kV breaker “Y-14(4-1BUS)” with an 80 kA breaker	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2666.12	Replace Yukon 138 kV breaker “Y-2(1B-BETHE)” with an 80 kA breaker	APS (100%)
b2666.13	Replace Yukon 138 kV breaker “Y-21(SHEPJ)” with an 80 kA breaker	APS (100%)
b2666.14	Replace Yukon 138 kV breaker “Y-22(SHEPHJT)” with an 80 kA breaker	APS (100%)
b2672	Change CT Ratio at Seneca Caverns from 120/1 to 160/1 and adjust relay settings accordingly	APS (100%)
b2688.3	Carroll Substation: Replace the Germantown 138 kV wave trap, upgrade the bus conductor and adjust CT ratios	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RECO (0.12%)
b2689.3	Upgrade terminal equipment at structure 27A	APS (100%)
b2696	Upgrade 138 kV substation equipment at Butler, Shanor Manor and Krendale substations. New rating of line will be 353 MVA summer normal/422 MVA emergency	APS (100%)
b2700	Remove existing Black Oak SPS	APS (100%)
b2743.6	Reconfigure the Ringgold 230 kV substation to double bus double breaker scheme	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.6.1	Replace the two Ringgold 230/138 kV transformers	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2743.7	Rebuild/Reconductor the Ringgold – Catoctin 138 kV circuit and upgrade terminal equipment on both ends	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2747.1	Relocate the FirstEnergy Pratts 138 kV terminal CVTs at Gordonsville substation to allow for the installation of a new motor operated switch being installed by Dominion	APS (100%)
b2763	Replace the breaker risers and wave trap at Bredinville 138 kV substation on the Cabrey Junction 138 kV terminal	APS (100%)
b2764	Upgrade Fairview 138 kV breaker risers and disconnect leads; Replace 500 CU breaker risers and 556 ACSR disconnect leads with 795 ACSR	APS (100%)
b2964.1	Replace terminal equipment at Pruntytown and Glen Falls 138 kV station	APS (100%)
b2964.2	Reconductor approximately 8.3 miles of the McAlpin - White Hall Junction 138 kV circuit	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2965 Reconductor the Charleroi – Allenport 138 kV line with 954 ACSR conductor. Replace breaker risers at Charleroi and Allenport		APS (37.15%) / DL (62.85%)
b2966 Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV line with 795 ACSS conductor. Replace Line Disconnect Switch at Yukon		APS (100%)
b2966.1 Reconductor the Yukon - Smithton - Shepler Hill Jct 138 kV line and replace terminal equipment as necessary to achieve required rating		APS (100%)
b2967 Convert the existing 6 wire Butler - Shanor Manor - Krendale 138 kV line into two separate 138 kV lines. New lines will be Butler - Keisters and Butler - Shanor Manor - Krendale 138 kV		APS (100%)
b2970 Ringgold – Catoctin Solution		APS (100%)
b2970.1 Install two new 230 kV positions at Ringgold for 230/138 kV transformers		APS (100%)
b2970.2 Install new 230 kV position for Ringgold – Catoctin 230 kV line		APS (100%)
b2970.3 Install one new 230 kV breaker at Catoctin substation		APS (100%)
b2970.4 Install new 230/138 kV transformer at Catoctin substation. Convert Ringgold – Catoctin 138 kV line to 230 kV operation		APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2970.5	Convert Garfield 138/12.5 kV substation to 230/12.5 kV	APS (100%)
b2996	Construct new Flint Run 500/138 kV substation	See sub-IDs for cost allocations
b2996.1	Construct a new 500/138 kV substation as a 4-breaker ring bus with expansion plans for double-breaker-double-bus on the 500 kV bus and breaker-and-a-half on the 138 kV bus to provide EHV source to the Marcellus shale load growth area. Projected load growth of additional 160 MVA to current plan of 280 MVA, for a total load of 440 MVA served from Waldo Run substation. Construct additional 3-breaker string at Waldo Run 138 kV bus. Relocate the Sherwood #2 line terminal to the new string. Construct two single circuit Flint Run - Waldo Run 138 kV lines using 795 ACSR (approximately 3 miles). After terminal relocation on new 3-breaker string at Waldo Run, terminate new Flint Run 138 kV lines onto the two open terminals	APS (100%)
b2996.2	Loop the Belmont – Harrison 500 kV line into and out of the new Flint Run 500 kV substation (less than 1 mile). Replace primary relaying and carrier sets on Belmont and Harrison 500 kV remote end substations	APS (100%)
b2996.3	Upgrade two (2) existing 138 kV breakers (Rider 50 and #1/4 transformer breaker) at Glen Falls with 63 kA 3000A units	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3005	Reconductor 3.1 mile 556 ACSR portion of Cabot to Butler 138 kV with 556 ACSS and upgrade terminal equipment. 3.1 miles of line will be reconducted for this project. The total length of the line is 7.75 miles	APS (100%)
b3006	Replace four Yukon 500/138 kV transformers with three transformers with higher rating and reconfigure 500 kV bus	APS (63.21%) / DL (36.79%)
b3007.1	Reconductor the Blairsville East to Social Hall 138 kV line and upgrade terminal equipment - AP portion. 4.8 miles total. The new conductor will be 636 ACSS replacing the existing 636 ACSR conductor. At Social Hall, meters, relays, bus conductor, a wave trap, circuit breaker and disconnects will be replaced	APS (100%)
b3010	Replace terminal equipment at Keystone and Cabot 500 kV buses. At Keystone, bus tubing and conductor, a wave trap, and meter will be replaced. At Cabot, a wave trap and bus conductor will be replaced	APS (100%)
b3011.1	Construct new Route 51 substation and connect 10 138 kV lines to new substation	DL (100%)
b3011.2	Upgrade terminal equipment at Yukon to increase rating on Yukon to Charleroi #2 138 kV line (New Yukon to Route 51 #4 138 kV line)	APS (22.82%) / DL (77.18%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3011.3	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #1 138 kV line	DL (100%)
b3011.4	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #2 138 kV line	DL (100%)
b3011.5	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #3 138 kV line	APS (22.82%) / DL (77.18%)
b3011.6	Upgrade remote end relays for Yukon – Allenport – Iron Bridge 138 kV line	DL (100%)
b3012.1	Construct two new 138 kV ties with the single structure from APS’s new substation to Duquesne’s new substation. The estimated line length is approximately 4.7 miles. The line is planned to use multiple ACSS conductors per phase	ATSI (38.21%) / DL (61.79%)
b3012.3	Construct a new Elrama – Route 51 138 kV No.3 line: reconductor 4.7 miles of the existing line, and construct 1.5 miles of a new line to the reconducted portion. Install a new line terminal at APS Route 51 substation	DL (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3013	Reconductor Vasco Tap to Edgewater Tap 138 kV line. 4.4 miles. The new conductor will be 336 ACSS replacing the existing 336 ACSR conductor	APS (100%)
b3015.6	Reconductor Elrama to Mitchell 138 kV line – AP portion. 4.2 miles total. 2x 795 ACSS/TW 20/7	DL (100%)
b3015.8	Upgrade terminal equipment at Mitchell for Mitchell – Elrama 138 kV line	APS (100%)
b3028	Upgrade substation disconnect leads at William 138 kV substation	APS (100%)
b3051.1	Ronceverte cap bank and terminal upgrades	APS (100%)
b3052	Install a 138 kV capacitor (29.7 MVAR effective) at West Winchester 138 kV	APS (100%)
b3064.3	Upgrade line relaying at Piney Fork and Bethel Park for Piney For – Elrama 138 kV line and Bethel Park – Elrama 138 kV	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3068	Reconductor the Yukon – Westraver 138 kV line (2.8 miles), replace the line drops and relays at Yukon 138 kV and replace switches at Westraver 138 kV bus	APS (100%)
b3069	Reconductor the Westraver – Route 51 138 kV line (5.63 miles) and replace line switches at Westraver 138 kV bus	APS (100%)
b3070	Reconductor the Yukon – Route 51 #1 138 kV line (8 miles), replace the line drops, relays and line disconnect switch at Yukon 138 kV bus	APS (100%)
b3071	Reconductor the Yukon – Route 51 #2 138 kV line (8 miles) and replace relays at Yukon 138 kV bus	APS (100%)
b3072	Reconductor the Yukon – Route 51 #3 138 kV line (8 miles) and replace relays at Yukon 138 kV bus	APS (100%)
b3074	Reconductor the 138 kV bus at Armstrong substation	APS (100%)
b3075	Replace the 500/138 kV transformer breaker and reconductor 138 kV bus at Cabot substation	APS (100%)
b3076	Reconductor the Edgewater – Loyalhanna 138 kV line (0.67 mile)	APS (100%)
b3079	Replace the Wylie Ridge 500/345 kV transformer #7	ATSI (72.30%) / DL (27.70%)
b3083	Reconductor the 138 kV bus at Butler and reconductor the 138 kV bus and replace line trap at Karns City	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3128	Relocate 34.5 kV lines from generating station roof R. Paul Smith 138 kV station	APS (100%)
b3214.1	Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV Line. Upgrade terminal equipment at Yukon and replace line relaying at Mitchell and Charleroi	APS (12.21%) / DL (87.79%)
b3214.2	Reconductor the Smithton – Shepler Hill Jct 138 kV Line	APS (4.74%) / DL (95.26%)
b3230	At Enon substation install a second 138 kV, 28.8 MVAR nameplate, capacitor and the associated 138 kV capacitor switcher	APS (100%)
b3240	Upgrade Cherry Run and Morgan terminals to make the transmission line the limiting component	APS (100%)
b3241	Install 138 kV, 36 MVAR capacitor and a 5 uF reactor protected by a 138 kV capacitor switcher. Install a breaker on the 138 kV Junction terminal. Install a 138 kV 3.5 uF reactor on the existing Hardy 138 kV capacitor	APS (100%)
b3242	Reconfigure Stonewall 138 kV substation from its current configuration to a six-breaker, breaker-and-a-half layout and add two (2) 36 MVAR capacitors with capacitor switchers	APS (100%)
b3318	Reconductor the Shanor Manor - Butler 138 kV line with an upgraded circuit breaker at Butler 138 kV station	APS (100%)
b3325	Reconductor the Charleroi - Union 138 kV line and upgrade terminal equipment at Charleroi 138 kV station	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3681	Upgrade the Shingletown #82 230/46 kV Transformer circuit by installing a 230 kV breaker and disconnect switches, removing existing 230 kV switches, replacing 46 kV disconnect switches, replacing limiting substation conductor, and installing/replacing relays	APS (100%)
b3683	Reconductor the existing 556.5 ACSR line segments on the Messick Road – Ridgeley 138 kV line with 954 45/7 ACSR to achieve 308/376 MVA SN/SE and 349/445 MVA WN/WE ratings. Replace the remote end equipment for the line. The total length of the line is 5.02 miles	APS (100%)
b3701	Replace terminal equipment at French's Mill and Junction 138 kV substations	APS (100%)
b3710	Reconductor AA2-161 to Yukon 138 kV Lines #1 and #2 with 954 ACSS conductor	APS (100%)
b3738	Replace limiting terminal equipment on Charleroi – Dry Run 138 kV line	APS (100%)
b3739	Replace limiting terminal equipment on Dry Run – Mitchell 138 kV line	APS (100%)
b3740	Replace limiting terminal equipment on Glen Falls – Bridgeport 138 kV line	APS (100%)
b3741	Replace limiting terminal equipment on Yukon - Charleroi #1 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3742	Replace limiting terminal equipment on Yukon - Charleroi #2 138 kV line	APS (100%)
b3743	At Bedington substation: Replace substation conductor, wave trap, Current Transformers (CT's) and upgrade relaying At Cherry Run substation: Replace substation conductor, wave trap, CT's, disconnect switches, circuit breaker and upgrade relaying At Marlowe substation: Replace substation conductor, wave trap, CT's and upgrade relaying	APS (100%)
b3744	Replace one span of 1272 ACSR from Krendale substation to structure 35 (approximately 630 feet) Replace one span of 1272 ACSR from Shanor Manor to structure 21 (approximately 148 feet) Replace 1272 ACSR risers at Krendale and Shanor Manor substations Replace 1272 ACSR substation conductor at Krendale substation Replace relaying at Krendale substation Revise relay settings at Butler and Shanor Manor substations	APS (100%)
b3745	Install redundant relaying at Carbon Center 230 kV substation	APS (100%)
b3746	Install redundant relaying at Meadow Brook 500 kV substation	APS (100%)
b3747	Install redundant relaying at Bedington 500 kV substation	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3761	Install 138 kV breaker on the Ridgway 138/46 kV #2 Transformer	APS (100%)
b3772	Reconductor 27.3 miles of the Messick Road – Morgan 138 kV line from 556 ACSR to 954 ACSR. At Messick Road substation, replace 138 kV wave trap, circuit breaker, CT's, disconnect switch, and substation conductor and upgrade relaying. At Morgan substation, upgrade relaying	APS (100%)
b3773	Install 33 MVAR switched capacitor, 138 kV breaker, and associated relaying at McConnellsburg 138 kV substation	APS (100%)
b3717.3	Relay work at Springdale 138 kV station	APS (100%)
b3717.4	Transmission line work – a new transmission structure and necessary tower work to handle the change in tension at Cheswick 138 kV station	APS (100%)
b3781	Replace line drops to Doubs Transformer 3. New transformer rating: 721 MVA SN / 862 MVA SE	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.8</u></p>	<p><u>Reconfigure Doubs 500 kV station and upgrade terminal equipment to new line</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPSCO (10.59%)</u></p>
<p><u>b3800.9</u></p>	<p><u>Rebuild the existing Hunterstown - Carroll 115/138 kV Corridor as double circuit using 230 kV construction standards. New circuit will be operated at 230 kV. Existing circuit to remain at 115/138 kV</u></p>	<p><u>This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.10 ~ b3800.18</u></p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<u>b3800.13</u>	<u>Rebuild the Germantown - Carroll 138 kV line to 230 kV double circuit construction (APS - PE Section)</u>		<u>APS (82.49%) / ME (17.51%)</u>
<u>b3800.15</u>	<u>Construct new 230 kV Hunterstown - Carroll line (APS - PE Section)</u>		<u>APS (99.86%) / ME (0.14%)</u>
<u>b3800.16</u>	<u>Expand Carroll 230 kV substation to ring bus</u>		<u>APS (99.86%) / ME (0.14%)</u>
<u>b3800.17</u>	<u>Network upgrade at Carroll 230 kV substation</u>		<u>APS (99.86%) / ME (0.14%)</u>
<u>b3800.20</u>	<u>Fayetteville - Grand Point 138 kV - Replace line trap at Grand Point 138 kV station</u>		<u>APS (100%)</u>
<u>b3800.21</u>	<u>Reid - Ringgold 138 kV line - Replace line trap, substation conductor, breaker, relaying and CTs at Ringgold station</u>		<u>APS (100%)</u>
<u>b3800.25</u>	<u>Taneytown 138 kV substation terminal upgrade</u>		<u>APS (100%)</u>

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.101</u></p>	<p><u>502 Junction substation two 500 kV circuit breaker expansion</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</u></p>
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\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.103</u></p>	<p><u>Rebuild approximately 16 miles of the Gore - Stonewall 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</u></p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.104</u></p>	<p><u>Rebuild approximately 15 miles of the Stonewall - Millville 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</u></p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<u>b3800.105</u>	<u>Rebuild approximately 6 miles of the Millville - Doubs 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)</u>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</u></p>
<u>b3800.111</u>	<u>Construct the Woodside - Stonewall 138 kV No. 1 line</u>		<u>APS (100%)</u>
<u>b3800.112</u>	<u>Construct the Woodside - Stonewall 138 kV No. 2 line</u>		<u>APS (100%)</u>
<u>b3800.114</u>	<u>Stonewall 138 kV substation two 138 kV breaker expansion</u>		<u>APS (100%)</u>

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**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<p><u>b3800.116</u></p>	<p><u>Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation (FE Portion)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)</u></p>
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\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.122	<p><u>Rebuild 500 kV line No. 514 from Doubs - Goose Creek 500 kV line. The Doubs - Goose Creek 500 kV line will be rebuilt and the Doubs - Dickerson 230 kV will be relocated and underbuilt on the same structure</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</u></p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.123	<u>Doubs substation work - Re-terminate the rebuilt Doubs - Goose Creek 500 kV line in its existing bay, terminate the new Doubs - Aspen 500 kV line in the open bay at Doubs, Replace three 500 kV breakers, Replace 500 kV terminal equipment including disconnect switches, CTs and substation conductor &amp; Replace relaying (APS Portion)</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</u></p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.124</u>	<u>New Doubs to Aspen 500 kV line (APS Portion)</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</u></p>
<u>b3800.125</u>	<u>Rebuild the Doubs - Dickerson 230 kV line. This will be underbuilt on the new Doubs - Goose Creek 500 kV line (APS Portion)</u>	<u>PEPCO (100%)</u>
<u>b3800.126</u>	<u>Rebuild the Doubs - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line (APS Portion)</u>	<u>PEPCO (100%)</u>

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**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<u>b3800.127</u>	<u>Rebuild the Dickerson - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line (APS Portion)</u>		<u>PEPCO (100%)</u>
<u>b3800.413</u>	<u>Replace Double Toll Gate 138 kV breaker MDT 138 OCB with a breaker rated 40 kA</u>		<u>APS (100%)</u>
<u>b3800.414</u>	<u>Replace Doubs 500 kV breaker DL-55 522LIN with a breaker rated 60 kA</u>		<u>APS (100%)</u>

**SCHEDULE 12 – APPENDIX A**

- (17) American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1570.4	Add a 345 kV breaker at Marysville station and a 0.1 mile 345 kV line extension from Marysville to the new 345/69 kV Dayton transformer	AEP (100%)
b1660.1	Cloverdale: install 6-765 kV breakers, incremental work for 2 additional breakers, reconfigure and relocate miscellaneous facilities, establish 500 kV station and 500 kV tie with 765 kV station	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (0.10%) / BGE (43.26%) / DEOK (0.10%) / EKPC (0.06%) / PEPCO (56.48%)</p>

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1797.1	Reconductor the AEP portion of the Cloverdale - Lexington 500 kV line with 2-1780 ACSS	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>  AEP ( 0.28%) / ATSI (0.18%) / BGE (43.01%) / Dayton (0.07%) / DEOK (0.17%) / EKPC (0.10%) / PEPCO (56.19%)</p>
b2055	Upgrade relay at Brues station	AEP (100%)
b2122.3	Upgrade terminal equipment at Howard on the Howard - Brookside 138 kV line to achieve ratings of 252/291 (SN/SE)	AEP (100%)
b2122.4	Perform a sag study on the Howard - Brookside 138 kV line	AEP (100%)
b2229	Install a 300 MVAR reactor at Dequine 345 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2230	Replace existing 150 MVAR reactor at Amos 765 kV substation on Amos - N. Proctorville - Hanging Rock with 300 MVAR reactor	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>
b2231	Install 765 kV reactor breaker at Dumont 765 kV substation on the Dumont - Wilton Center line	AEP (100%)
b2232	Install 765 kV reactor breaker at Marysville 765 kV substation on the Marysville - Maliszewski line	AEP (100%)
b2233	Change transformer tap settings for the Baker 765/345 kV transformer	AEP (100%)
b2252	Loop the North Muskingum - Crooksville 138 kV line into AEP's Philo 138 kV station which lies approximately 0.4 miles from the line	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2253	Install an 86.4 MVAR capacitor bank at Gorsuch 138 kV station in Ohio		AEP (100%)
b2254	Rebuild approximately 4.9 miles of Corner - Degussa 138 kV line in Ohio		AEP (100%)
b2255	Rebuild approximately 2.8 miles of Maliszewski - Polaris 138 kV line in Ohio		AEP (100%)
b2256	Upgrade approximately 36 miles of 138 kV through path facilities between Harrison 138 kV station and Ross 138 kV station in Ohio		AEP (100%)
b2257	Rebuild the Pokagon - Corey 69 kV line as a double circuit 138 kV line with one side at 69 kV and the other side as an express circuit between Pokagon and Corey stations		AEP (100%)
b2258	Rebuild 1.41 miles of #2 CU 46 kV line between Tams Mountain - Slab Fork to 138 kV standards. The line will be strung with 1033 ACSR		AEP (100%)
b2259	Install a new 138/69 kV transformer at George Washington 138/69 kV substation to provide support to the 69 kV system in the area		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2286	Rebuild 4.7 miles of Muskingum River - Wolf Creek 138 kV line and remove the 138/138 kV transformer at Wolf Creek Station		AEP (100%)
b2287	Loop in the Meadow Lake - Olive 345 kV circuit into Reynolds 765/345 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2344.1	Establish a new 138/12 kV station, transfer and consolidate load from its Nicholasville and Marcellus 34.5 kV stations at this new station		AEP (100%)
b2344.2	Tap the Hydramatic – Valley 138 kV circuit (~ structure 415), build a new 138 kV line (~3.75 miles) to this new station		AEP (100%)
b2344.3	From this station, construct a new 138 kV line (~1.95 miles) to REA’s Marcellus station		AEP (100%)
b2344.4	From REA’s Marcellus station construct new 138 kV line (~2.35 miles) to a tap point on Valley – Hydramatic 138 kV ckt (~structure 434)		AEP (100%)
b2344.5	Retire sections of the 138 kV line in between structure 415 and 434 (~ 2.65 miles)		AEP (100%)
b2344.6	Retire AEP’s Marcellus 34.5/12 kV and Nicholasville 34.5/12 kV stations and also the Marcellus – Valley 34.5 kV line		AEP (100%)
b2345.1	Construct a new 69 kV line from Hartford to Keeler (~8 miles)		AEP (100%)
b2345.2	Rebuild the 34.5 kV lines between Keeler - Sister Lakes and Glenwood tap switch to 69 kV (~12 miles)		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2345.3	Implement in - out at Keeler and Sister Lakes 34.5 kV stations		AEP (100%)
b2345.4	Retire Glenwood tap switch and construct a new Rothadew station. These new lines will continue to operate at 34.5 kV		AEP (100%)
b2346	Perform a sag study for Howard - North Bellville - Millwood 138 kV line including terminal equipment upgrades		AEP (100%)
b2347	Replace the North Delphos 600A switch. Rebuild approximately 18.7 miles of 138 kV line North Delphos - S073. Reconductor the line and replace the existing tower structures		AEP (100%)
b2348	Construct a new 138 kV line from Richlands Station to intersect with the Hales Branch - Grassy Creek 138 kV circuit		AEP (100%)
b2374	Change the existing CT ratios of the existing equipment along Bearskin - Smith Mountain 138kV circuit		AEP (100%)
b2375	Change the existing CT ratios of the existing equipment along East Danville-Banister 138kV circuit		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2376	Replace the Turner 138 kV breaker 'D'	AEP (100%)
b2377	Replace the North Newark 138 kV breaker 'P'	AEP (100%)
b2378	Replace the Sporn 345 kV breaker 'DD'	AEP (100%)
b2379	Replace the Sporn 345 kV breaker 'DD2'	AEP (100%)
b2380	Replace the Muskingum 345 kV breaker 'SE'	AEP (100%)
b2381	Replace the East Lima 138 kV breaker 'E1'	AEP (100%)
b2382	Replace the Delco 138 kV breaker 'R'	AEP (100%)
b2383	Replace the Sporn 345 kV breaker 'AA2'	AEP (100%)
b2384	Replace the Sporn 345 kV breaker 'CC'	AEP (100%)
b2385	Replace the Sporn 345 kV breaker 'CC2'	AEP (100%)
b2386	Replace the Astor 138 kV breaker '102'	AEP (100%)
b2387	Replace the Muskingum 345 kV breaker 'SH'	AEP (100%)
b2388	Replace the Muskingum 345 kV breaker 'SI'	AEP (100%)
b2389	Replace the Hyatt 138 kV breaker '105N'	AEP (100%)
b2390	Replace the Muskingum 345 kV breaker 'SG'	AEP (100%)
b2391	Replace the Hyatt 138 kV breaker '101C'	AEP (100%)
b2392	Replace the Hyatt 138 kV breaker '104N'	AEP (100%)
b2393	Replace the Hyatt 138 kV breaker '104S'	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2394	Replace the Sporn 345 kV breaker 'CC1'	AEP (100%)
b2409	Install two 56.4 MVAR capacitor banks at the Melmore 138 kV station in Ohio	AEP (100%)
b2410	Convert Hogan Mullin 34.5 kV line to 138 kV, establish 138 kV line between Jones Creek and Strawton, rebuild existing Mullin Elwood 34.5 kV and terminate line into Strawton station, retire Mullin station	AEP (100%)
b2411	Rebuild the 3/0 ACSR portion of the Hadley - Kroemer Tap 69 kV line utilizing 795 ACSR conductor	AEP (100%)
b2423	Install a 300 MVAR shunt reactor at AEP's Wyoming 765 kV station	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>  AEP (100%)</p>

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2444	Willow - Eureka 138 kV line: Reconductor 0.26 mile of 4/0 CU with 336 ACSS		AEP (100%)
b2445	Complete a sag study of Tidd - Mahans Lake 138 kV line		AEP (100%)
b2449	Rebuild the 7-mile 345 kV line between Meadow Lake and Reynolds 345 kV stations		AEP (100%)
b2462	Add two 138 kV circuit breakers at Fremont station to fix tower contingency '408 2'		AEP (100%)
b2501	Construct a new 138/69 kV Yager station by tapping 2-138 kV FE circuits (Nottingham-Cloverdale, Nottingham-Harmon)		AEP (100%)
b2501.2	Build a new 138 kV line from new Yager station to Azalea station		AEP (100%)
b2501.3	Close the 138 kV loop back into Yager 138 kV by converting part of local 69 kV facilities to 138 kV		AEP (100%)
b2501.4	Build 2 new 69 kV exits to reinforce 69 kV facilities and upgrade conductor between Irish Run 69 kV Switch and Bowerstown 69 kV Switch		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2502.1	Construct new 138 kV switching station Nottingham tapping 6-138 kV FE circuits (Holloway-Brookside, Holloway-Harmon #1 and #2, Holloway-Reeds, Holloway-New Stacy, Holloway-Cloverdale). Exit a 138 kV circuit from new station to Freebyrd station		AEP (100%)
b2502.2	Convert Freebyrd 69 kV to 138 kV		AEP (100%)
b2502.3	Rebuild/convert Freebyrd-South Cadiz 69 kV circuit to 138 kV		AEP (100%)
b2502.4	Upgrade South Cadiz to 138 kV breaker and a half		AEP (100%)
b2530	Replace the Sporn 138 kV breaker 'G1' with 80 kA breaker		AEP (100%)
b2531	Replace the Sporn 138 kV breaker 'D' with 80 kA breaker		AEP (100%)
b2532	Replace the Sporn 138 kV breaker 'O1' with 80 kA breaker		AEP (100%)
b2533	Replace the Sporn 138 kV breaker 'P2' with 80 kA breaker		AEP (100%)
b2534	Replace the Sporn 138 kV breaker 'U' with 80 kA breaker		AEP (100%)
b2535	Replace the Sporn 138 kV breaker 'O' with 80 kA breaker		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2536	Replace the Sporn 138 kV breaker 'O2' with 80 kA breaker		AEP (100%)
b2537	Replace the Robinson Park 138 kV breakers A1, A2, B1, B2, C1, C2, D1, D2, E1, E2, and F1 with 63 kA breakers		AEP (100%)
b2555	Reconductor 0.5 miles Tiltonsville – Windsor 138 kV and string the vacant side of the 4.5 mile section using 556 ACSR in a six wire configuration		AEP (100%)
b2556	Install two 138 kV prop structures to increase the maximum operating temperature of the Clinch River- Clinch Field 138 kV line		AEP (100%)
b2581	Temporary operating procedure for delay of upgrade b1464. Open the Corner 138 kV circuit breaker 86 for an overload of the Corner – Washington MP 138 kV line. The tower contingency loss of Belmont – Trissler 138 kV and Belmont – Edgelawn 138 kV should be added to Operational contingency		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2591	Construct a new 69 kV line approximately 2.5 miles from Colfax to Drewry's. Construct a new Drewry's station and install a new circuit breaker at Colfax station.		AEP (100%)
b2592	Rebuild existing East Coshocton – North Coshocton double circuit line which contains Newcomerstown – N. Coshocton 34.5 kV Circuit and Coshocton – North Coshocton 69 kV circuit		AEP (100%)
b2593	Rebuild existing West Bellaire – Glencoe 69 kV line with 138 kV & 69 kV circuits and install 138/69 kV transformer at Glencoe Switch		AEP (100%)
b2594	Rebuild 1.0 mile of Brantley – Bridge Street 69 kV Line with 1033 ACSR overhead conductor		AEP (100%)
b2595.1	Rebuild 7.82 mile Elkhorn City – Haysi S.S 69 kV line utilizing 1033 ACSR built to 138 kV standards		AEP (100%)
b2595.2	Rebuild 5.18 mile Moss – Haysi SS 69 kV line utilizing 1033 ACSR built to 138 kV standards		AEP (100%)
b2596	Move load from the 34.5 kV bus to the 138 kV bus by installing a new 138/12 kV XF at New Carlisle station in Indiana		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2597	Rebuild approximately 1 mi. section of Dragoon-Virgil Street 34.5 kV line between Dragoon and Dodge Tap switch and replace Dodge switch MOAB to increase thermal capability of Dragoon-Dodge Tap branch		AEP (100%)
b2598	Rebuild approximately 1 mile section of the Kline-Virgil Street 34.5 kV line between Kline and Virgil Street tap. Replace MOAB switches at Beiger, risers at Kline, switches and bus at Virgil Street		AEP (100%)
b2599	Rebuild approximately 0.1 miles of 69 kV line between Albion and Albion tap		AEP (100%)
b2600	Rebuild Fremont – Pound line as 138 kV		AEP (100%)
b2601	Fremont Station Improvements		AEP (100%)
b2601.1	Replace MOAB towards Beaver Creek with 138 kV breaker		AEP (100%)
b2601.2	Replace MOAB towards Clinch River with 138 kV breaker		AEP (100%)
b2601.3	Replace 138 kV Breaker A with new bus-tie breaker		AEP (100%)
b2601.4	Re-use Breaker A as high side protection on transformer #1		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2601.5	Install two (2) circuit switchers on high side of transformers # 2 and 3 at Fremont Station		AEP (100%)
b2602.1	Install 138 kV breaker E2 at North Proctorville		AEP (100%)
b2602.2	Construct 2.5 Miles of 138 kV 1033 ACSR from East Huntington to Darrah 138 kV substations		AEP (100%)
b2602.3	Install breaker on new line exit at Darrah towards East Huntington		AEP (100%)
b2602.4	Install 138 kV breaker on new line at East Huntington towards Darrah		AEP (100%)
b2602.5	Install 138 kV breaker at East Huntington towards North Proctorville		AEP (100%)
b2603	Boone Area Improvements		AEP (100%)
b2603.1	Purchase approximately a 200X300 station site near Slaughter Creek 46 kV station (Wilbur Station)		AEP (100%)
b2603.2	Install 3 138 kV circuit breakers, Cabin Creek to Hernshaw 138 kV circuit		AEP (100%)
b2603.3	Construct 1 mi. of double circuit 138 kV line on Wilbur – Boone 46 kV line with 1590 ACSS 54/19 conductor @ 482 Degree design temp. and 1-159 12/7 ACSR and one 86 Sq.MM. 0.646” OPGW Static wires		AEP (100%)
b2604	Bellefonte Transformer Addition		AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Indiana Michigan Transmission Company, AEP Ohio Transmission Company, AEP West Virginia Transmission Company, Appalachian Power Company, Indiana Michigan Power Company, Kingsport Power Company, Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2604.1	Remove approximately 11.32 miles of the 69 kV line between Millbrook Park and Franklin Furnace		AEP (100%)
b2604.2	At Millbrook Park station, add a new 138/69 kV Transformer #2 (90 MVA) with 3000 A 40 kA breakers on the high and low side. Replace the 600 A MOAB switch and add a 3000 A circuit switcher on the high side of Transformer #1		AEP (100%)
b2604.3	Replace Sciotoville 69 kV station with a new 138/12 kV in-out station (Cottrell) with 2000 A line MOABs facing Millbrook Park and East Wheelersburg 138 kV station		AEP (100%)
b2604.4	Tie Cottrell switch into the Millbrook Park – East Wheelersburg 138 kV circuit by constructing 0.50 mile of line using 795 ACSR 26/7 Drake (SE 359 MVA)		AEP (100%)
b2604.5	Install a new 2000 A 3-way PoP switch outside of Texas Eastern 138 kV substation (Sadiq switch)		AEP (100%)
b2604.6	Replace the Wheelersburg 69 kV station with a new 138/12 kV in-out station (Sweetgum) with a 3000 A 40 kA breaker facing Sadiq switch and a 2000 A 138 kV MOAB facing Althea		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2604.7	Build approximately 1.4 miles of new 138 kV line using 795 ACSR 26/7 Drake (SE 359 MVA) between the new Sadiq switch and the new Sweetgum 138 kV station		AEP (100%)
b2604.8	Remove the existing 69 kV Hayport Road switch		AEP (100%)
b2604.9	Rebuild approximately 2.3 miles along existing Right-Of-Way from Sweetgum to the Hayport Road switch 69 kV location as 138 kV single circuit and rebuild approximately 2.0 miles from the Hayport Road switch to Althea 69 kV with double circuit 138 kV construction, one side operated at 69 kV to continue service to K.O. Wheelersburg, using 795 ACSR 26/7 Drake (SE 359 MVA)		AEP (100%)
b2604.10	Build a new station (Althea) with a 138/69 kV, 90 MVA transformer. The 138 kV side will have a single 2000 A 40 kA circuit breaker and the 69 kV side will be a 2000 A 40 kA three breaker ring bus		AEP (100%)
b2604.11	Remote end work at Hanging Rock, East Wheelersburg and North Haverhill 138 kV		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2605	Rebuild and reconnector Kammer – George Washington 69 kV circuit and George Washington – Moundsville ckt #1, designed for 138 kV. Upgrade limiting equipment at remote ends and at tap stations		AEP (100%)
b2606	Convert Bane – Hammondsville from 23 kV to 69 kV operation		AEP (100%)
b2607	Pine Gap Relay Limit Increase		AEP (100%)
b2608	Richlands Relay Upgrade		AEP (100%)
b2609	Thorofare – Goff Run – Powell Mountain 138 kV Build		AEP (100%)
b2610	Rebuild Pax Branch – Scaraboro as 138 kV		AEP (100%)
b2611	Skin Fork Area Improvements		AEP (100%)
b2611.1	New 138/46 kV station near Skin Fork and other components		AEP (100%)
b2611.2	Construct 3.2 miles of 1033 ACSR double circuit from new Station to cut into Sundial-Baileysville 138 kV line		AEP (100%)
b2634.1	Replace metering BCT on Tanners Creek CB T2 with a slip over CT with higher thermal rating in order to remove 1193 MVA limit on facility (Miami Fort-Tanners Creek 345 kV line)		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2643	Replace the Darrah 138 kV breaker 'L' with 40 kA rated breaker		AEP (100%)
b2645	Ohio Central 138 kV Loop		AEP (100%)
b2667	Replace the Muskingum 138 kV bus # 1 and 2		AEP (100%)
b2668	Reconductor Dequine to Meadow Lake 345 kV circuit #1 utilizing dual 954 ACSR 54/7 cardinal conductor		AEP (99.89%) / OVEC (0.11%)
b2668.1	Replace the bus/risers at Dequine 345 kV station		AEP (100%)
b2669	Install a second 345/138 kV transformer at Desoto		AEP (100%)
b2670	Replace switch at Elk Garden 138 kV substation (on the Elk Garden – Lebanon 138 kV circuit)		AEP (100%)
b2671	Replace/upgrade/add terminal equipment at Bradley, Mullensville, Pinnacle Creek, Itmann, and Tams Mountain 138 kV substations. Sag study on Mullens – Wyoming and Mullens – Tams Mt. 138 kV circuits		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2687.1	Install a +/- 450 MVAR SVC at Jacksons Ferry 765 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>

\*Neptune Regional Transmission System, LLC

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2687.2	Install a 300 MVAR shunt line reactor on the Broadford end of the Broadford – Jacksons Ferry 765 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>
b2697.1	Mitigate violations identified by sag study to operate Fieldale-Thornton-Franklin 138 kV overhead line conductor at its max. operating temperature. 6 potential line crossings to be addressed	AEP (100%)
b2697.2	Replace terminal equipment at AEP’s Danville and East Danville substations to improve thermal capacity of Danville – East Danville 138 kV circuit	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2698	Replace relays at AEP's Cloverdale and Jackson's Ferry substations to improve the thermal capacity of Cloverdale – Jackson's Ferry 765 kV line		AEP (100%)
b2701.1	Construct Herlan station as breaker and a half configuration with 9-138 kV CB's on 4 strings and with 2-28.8 MVAR capacitor banks		AEP (100%)
b2701.2	Construct new 138 kV line from Herlan station to Blue Racer station. Estimated approx. 3.2 miles of 1234 ACSS/TW Yukon and OPGW		AEP (100%)
b2701.3	Install 1-138 kV CB at Blue Racer to terminate new Herlan circuit		AEP (100%)
b2714	Rebuild/upgrade line between Glencoe and Willow Grove Switch 69 kV		AEP (100%)
b2715	Build approximately 11.5 miles of 34.5 kV line with 556.5 ACSR 26/7 Dove conductor on wood poles from Flushing station to Smyrna station		AEP (100%)
b2727	Replace the South Canton 138 kV breakers 'K', 'J', 'J1', and 'J2' with 80 kA breakers		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2731	Convert the Sunnyside – East Sparta – Malvern 23 kV sub-transmission network to 69 kV. The lines are already built to 69 kV standards		AEP (100%)
b2733	Replace South Canton 138 kV breakers ‘L’ and ‘L2’ with 80 kA rated breakers		AEP (100%)
b2750.1	Retire Betsy Layne 138/69/43 kV station and replace it with the greenfield Stanville station about a half mile north of the existing Betsy Layne station		AEP (100%)
b2750.2	Relocate the Betsy Layne capacitor bank to the Stanville 69 kV bus and increase the size to 14.4 MVAR		AEP (100%)
b2753.1	Replace existing George Washington station 138 kV yard with GIS 138 kV breaker and a half yard in existing station footprint. Install 138 kV revenue metering for new IPP connection		AEP (100%)
b2753.2	Replace Dilles Bottom 69/4 kV Distribution station as breaker and a half 138 kV yard design including AEP Distribution facilities but initial configuration will constitute a 3 breaker ring bus		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2753.3	Connect two 138 kV 6-wired circuits from “Point A” (currently de-energized and owned by FirstEnergy) in circuit positions previously designated Burger #1 & Burger #2 138 kV. Install interconnection settlement metering on both circuits exiting Holloway		AEP (100%)
b2753.6	Build double circuit 138 kV line from Dilles Bottom to “Point A”. Tie each new AEP circuit in with a 6-wired line at Point A. This will create a Dilles Bottom – Holloway 138 kV circuit and a George Washington – Holloway 138 kV circuit		AEP (100%)
b2753.7	Retire line sections (Dilles Bottom – Bellaire and Moundsville – Dilles Bottom 69 kV lines) south of FirstEnergy 138 kV line corridor, near “Point A”. Tie George Washington – Moundsville 69 kV circuit to George Washington – West Bellaire 69 kV circuit		AEP (100%)
b2753.8	Rebuild existing 69 kV line as double circuit from George Washington – Dilles Bottom 138 kV. One circuit will cut into Dilles Bottom 138 kV initially and the other will go past with future plans to cut in		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2760	Perform a Sag Study of the Saltville – Tazewell 138 kV line to increase the thermal rating of the line	AEP (100%)
b2761.2	Perform a Sag Study of the Hazard – Wooten 161 kV line to increase the thermal rating of the line	AEP (100%)
b2761.3	Rebuild the Hazard – Wooten 161 kV line utilizing 795 26/7 ACSR conductor (300 MVA rating)	AEP (100%)
b2762	Perform a Sag Study of Nagel – West Kingsport 138 kV line to increase the thermal rating of the line	AEP (100%)
b2776	Reconductor the entire Dequine – Meadow Lake 345 kV circuit #2	AEP (99.89%) / OVEC (0.11%)
b2777	Reconductor the entire Dequine – Eugene 345 kV circuit #1	AEP (5.96%) / EKPC (89.89%) / OVEC (4.15%)
b2779.1	Construct a new 138 kV station, Campbell Road, tapping into the Grabill – South Hicksville 138 kV line	AEP (100%)
b2779.2	Reconstruct sections of the Butler-N.Hicksville and Auburn-Butler 69 kV circuits as 138 kV double circuit and extend 138 kV from Campbell Road station	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2779.3	Construct a new 345/138 kV SDI Wilmington Station which will be sourced from Collingwood 345 kV and serve the SDI load at 345 kV and 138 kV, respectively		AEP (100%)
b2779.4	Loop 138 kV circuits in-out of the new SDI Wilmington 138 kV station resulting in a direct circuit to Auburn 138 kV and an indirect circuit to Auburn and Rob Park via Dunton Lake, and a circuit to Campbell Road; Reconductor 138 kV line section between Dunton Lake – SDI Wilmington		AEP (100%)
b2779.5	Expand Auburn 138 kV bus		AEP (100%)
b2779.6	Construct a 345 kV ring bus at Dunton Lake to serve Steel Dynamics, Inc. (SDI) load at 345 kV via two (2) circuits		AEP (100%)
b2779.7	Retire Collingwood 345 kV station		AEP (100%)
b2787	Reconductor 0.53 miles (14 spans) of the Kaiser Jct. - Air Force Jct. Sw section of the Kaiser - Heath 69 kV circuit/line with 336 ACSR to match the rest of the circuit (73 MVA rating, 78% loading)		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2788	Install a new 3-way 69 kV line switch to provide service to AEP's Barnesville distribution station. Remove a portion of the #1 copper T-Line from the 69 kV through-path		AEP (100%)
b2789	Rebuild the Brues - Glendale Heights 69 kV line section (5 miles) with 795 ACSR (128 MVA rating, 43% loading)		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2790	Install a 3 MVAR, 34.5 kV cap bank at Caldwell substation	AEP (100%)
b2791	Rebuild Tiffin – Howard, new transformer at Chatfield	AEP (100%)
b2791.1	Rebuild portions of the East Tiffin - Howard 69 kV line from East Tiffin to West Rockaway Switch (0.8 miles) using 795 ACSR Drake conductor (129 MVA rating, 50% loading)	AEP (100%)
b2791.2	Rebuild Tiffin - Howard 69 kV line from St. Stephen’s Switch to Hinesville (14.7 miles) using 795 ACSR Drake conductor (90 MVA rating, non-conductor limited, 38% loading)	AEP (100%)
b2791.3	New 138/69 kV transformer with 138/69 kV protection at Chatfield	AEP (100%)
b2791.4	New 138/69 kV protection at existing Chatfield transformer	AEP (100%)
b2792	Replace the Elliott transformer with a 130 MVA unit, reconductor 0.42 miles of the Elliott – Ohio University 69 kV line with 556 ACSR to match the rest of the line conductor (102 MVA rating, 73% loading) and rebuild 4 miles of the Clark Street – Strouds R	AEP (100%)

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Required Transmission Enhancements      Annual Revenue Requirement      Responsible Customer(s)

b2793	Energize the spare Fremont Center 138/69 kV 130 MVA transformer #3. Reduces overloaded facilities to 46% loading		AEP (100%)
b2794	Construct new 138/69/34 kV station and 1-34 kV circuit (designed for 69 kV) from new station to Decliff station, approximately 4 miles, with 556 ACSR conductor (51 MVA rating)		AEP (100%)
b2795	Install a 34.5 kV 4.8 MVAR capacitor bank at Killbuck 34.5 kV station		AEP (100%)
b2796	Rebuild the Malvern - Oneida Switch 69 kV line section with 795 ACSR (1.8 miles, 125 MVA rating, 55% loading)		AEP (100%)
b2797	Rebuild the Ohio Central - Conesville 69 kV line section (11.8 miles) with 795 ACSR conductor (128 MVA rating, 57% loading). Replace the 50 MVA Ohio Central 138/69 kV XFMR with a 90 MVA unit		AEP (100%)
b2798	Install a 14.4 MVAR capacitor bank at West Hicksville station. Replace ground switch/MOAB at West Hicksville with a circuit switcher		AEP (100%)
b2799	Rebuild Valley - Almena, Almena - Hartford, Riverside - South Haven 69 kV lines. New line exit at Valley Station. New transformers at Almena and Hartford		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2799.1	Rebuild 12 miles of Valley – Almena 69 kV line as a double circuit 138/69 kV line using 795 ACSR conductor (360 MVA rating) to introduce a new 138 kV source into the 69 kV load pocket around Almena station		AEP (100%)
b2799.2	Rebuild 3.2 miles of Almena to Hartford 69 kV line using 795 ACSR conductor (90 MVA rating)		AEP (100%)
b2799.3	Rebuild 3.8 miles of Riverside – South Haven 69 kV line using 795 ACSR conductor (90 MVA rating)		AEP (100%)
b2799.4	At Valley station, add new 138 kV line exit with a 3000 A 40 kA breaker for the new 138 kV line to Almena and replace CB D with a 3000 A 40 kA breaker		AEP (100%)
b2799.5	At Almena station, install a 90 MVA 138/69 kV transformer with low side 3000 A 40 kA breaker and establish a new 138 kV line exit towards Valley		AEP (100%)
b2799.6	At Hartford station, install a second 90 MVA 138/69 kV transformer with a circuit switcher and 3000 A 40 kA low side breaker		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2817	Replace Delaware 138 kV breaker 'P' with a 40 kA breaker	AEP (100%)
b2818	Replace West Huntington 138 kV breaker 'F' with a 40 kA breaker	AEP (100%)
b2819	Replace Madison 138 kV breaker 'V' with a 63 kA breaker	AEP (100%)
b2820	Replace Sterling 138 kV breaker 'G' with a 40 kA breaker	AEP (100%)
b2821	Replace Morse 138 kV breakers '103', '104', '105', and '106' with 63 kA breakers	AEP (100%)
b2822	Replace Clinton 138 kV breakers '105' and '107' with 63 kA breakers	AEP (100%)
b2826.1	Install 300 MVAR reactor at Ohio Central 345 kV substation	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2826.2	Install 300 MVAR reactor at West Bellaire 345 kV substation		AEP (100%)
b2831.1	Upgrade the Tanner Creek – Miami Fort 345 kV circuit (AEP portion)		<b>DFAX Allocation:</b> AEP (27.09%) / Dayton (38.64%) / DEOK (34.27%)
b2832	Six wire the Kyger Creek – Sporn 345 kV circuits #1 and #2 and convert them to one circuit		AEP (100%)
b2833	Reconductor the Maddox Creek – East Lima 345 kV circuit with 2-954 ACSS Cardinal conductor		<b>DFAX Allocation:</b> AEP (76.06%) / Dayton (23.94%)
b2834	Reconductor and string open position and sixwire 6.2 miles of the Chemical – Capitol Hill 138 kV circuit		AEP (100%)
b2872	Replace the South Canton 138 kV breaker ‘K2’ with a 80 kA breaker		AEP (100%)
b2873	Replace the South Canton 138 kV breaker “M” with a 80 kA breaker		AEP (100%)
b2874	Replace the South Canton 138 kV breaker “M2” with a 80 kA breaker		AEP (100%)
b2878	Upgrade the Clifty Creek 345 kV risers		AEP (100%)
b2880	Rebuild approximately 4.77 miles of the Cannonsburg – South Neal 69 kV line section utilizing 795 ACSR conductor (90 MVA rating)		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2881	Rebuild ~1.7 miles of the Dunn Hollow – London 46 kV line section utilizing 795 26/7 ACSR conductor (58 MVA rating, non-conductor limited)	AEP (100%)
b2882	Rebuild Reusens - Peakland Switch 69 kV line. Replace Peakland Switch	AEP (100%)
b2882.1	Rebuild the Reusens - Peakland Switch 69 kV line (approximately 0.8 miles) utilizing 795 ACSR conductor (86 MVA rating, non-conductor limited)	AEP (100%)
b2882.2	Replace existing Peakland S.S with new 3 way switch phase over phase structure	AEP (100%)
b2883	Rebuild the Craneco – Pardee – Three Forks – Skin Fork 46 kV line section (approximately 7.2 miles) utilizing 795 26/7 ACSR conductor (108 MVA rating)	AEP (100%)
b2884	Install a second transformer at Nagel station, comprised of 3 single phase 250 MVA 500/138 kV transformers. Presently, TVA operates their end of the Boone Dam – Holston 138 kV interconnection as normally open preemptively for the loss of the existing Nagel	AEP (100%)
b2885	New delivery point for City of Jackson	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2885.1	Install a new Ironman Switch to serve a new delivery point requested by the City of Jackson for a load increase request	AEP (100%)
b2885.2	Install a new 138/69 kV station (Rhodes) to serve as a third source to the area to help relieve overloads caused by the customer load increase	AEP (100%)
b2885.3	Replace Coalton Switch with a new three breaker ring bus (Heppner)	AEP (100%)
b2886	Install 90 MVA 138/69 kV transformer, new transformer high and low side 3000 A 40 kA CBs, and a 138 kV 40 kA bus tie breaker at West End Fostoria	AEP (100%)
b2887	Add 2-138 kV CB's and relocate 2-138 kV circuit exits to different bays at Morse Road. Eliminate 3 terminal line by terminating Genoa - Morse circuit at Morse Road	AEP (100%)
b2888	Retire Poston substation. Install new Lemaster substation	AEP (100%)
b2888.1	Remove and retire the Poston 138 kV station	AEP (100%)
b2888.2	Install a new greenfield station, Lemaster 138 kV Station, in the clear	AEP (100%)

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Required Transmission Enhancements      Annual Revenue Requirement      Responsible Customer(s)

b2888.3	Relocate the Trimble 69 kV AEP Ohio radial delivery point to 138 kV, to be served off of the Poston – Strouds Run – Crooksville 138 kV circuit via a new three-way switch. Retire the Poston - Trimble 69 kV line		AEP (100%)
b2889	Expand Cliffview station		AEP (100%)
b2889.1	Cliffview Station: Establish 138 kV bus. Install two 138/69 kV XFRs (130 MVA), six 138 kV CBs (40 kA 3000 A) and four 69 kV CBs (40 kA 3000 A)		AEP (100%)
b2889.2	Byllesby – Wythe 69 kV: Retire all 13.77 miles (1/0 CU) of this circuit (~4 miles currently in national forest)		AEP (100%)
b2889.3	Galax – Wythe 69 kV: Retire 13.53 miles (1/0 CU section) of line from Lee Highway down to Byllesby. This section is currently double circuited with Byllesby – Wythe 69 kV. Terminate the southern 3/0 ACSR section into the newly opened position at Byllesby		AEP (100%)
b2889.4	Cliffview Line: Tap the existing Pipers Gap – Jubal Early 138 kV line section. Construct double circuit in/out (~2 miles) to newly established 138 kV bus, utilizing 795 26/7 ACSR conductor		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2890.1	Rebuild 23.55 miles of the East Cambridge – Smyrna 34.5 kV circuit with 795 ACSR conductor (128 MVA rating) and convert to 69 kV	AEP (100%)
b2890.2	East Cambridge: Install a 2000 A 69 kV 40 kA circuit breaker for the East Cambridge – Smyrna 69 kV circuit	AEP (100%)
b2890.3	Old Washington: Install 69 kV 2000 A two way phase over phase switch	AEP (100%)
b2890.4	Install 69 kV 2000 A two way phase over phase switch	AEP (100%)
b2891	Rebuild the Midland Switch to East Findlay 34.5 kV line (3.31 miles) with 795 ACSR (63 MVA rating) to match other conductor in the area	AEP (100%)
b2892	Install new 138/12 kV transformer with high side circuit switcher at Leon and a new 138 kV line exit towards Ripley. Establish 138 kV at the Ripley station with a new 138/69 kV 130 MVA transformer and move the distribution load to 138 kV service	AEP (100%)
b2936.1	Rebuild approximately 6.7 miles of 69 kV line between Mottville and Pigeon River using 795 ACSR conductor (129 MVA rating). New construction will be designed to 138 kV standards but operated at 69 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2936.2	Pigeon River Station: Replace existing MOAB Sw. 'W' with a new 69 kV 3000 A 40 kA breaker, and upgrade existing relays towards HMD station. Replace CB H with a 3000 A 40 kA breaker	AEP (100%)
b2937	Replace the existing 636 ACSR 138 kV bus at Fletchers Ridge with a larger 954 ACSR conductor	AEP (100%)
b2938	Perform a sag mitigations on the Broadford – Wolf Hills 138 kV circuit to allow the line to operate to a higher maximum temperature	AEP (100%)
b2958.1	Cut George Washington – Tidd 138 kV circuit into Sand Hill and reconfigure Brues & Warton Hill line entrances	AEP (100%)
b2958.2	Add 2 138 kV 3000 A 40 kA breakers, disconnect switches, and update relaying at Sand Hill station	AEP (100%)
b2968	Upgrade existing 345 kV terminal equipment at Tanner Creek station	AEP (100%)
b2969	Replace terminal equipment on Maddox Creek - East Lima 345 kV circuit	AEP (100%)
b2976	Upgrade terminal equipment at Tanners Creek 345 kV station. Upgrade 345 kV bus and risers at Tanners Creek for the Dearborn circuit	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2988	Replace the Twin Branch 345 kV breaker “JM” with 63 kA breaker and associated substation works including switches, bus leads, control cable and new DICM	AEP (100%)
b2993	Rebuild the Torrey – South Gambrinus Switch – Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR ‘Curlew’ conductor and steel poles	AEP (100%)
b3000	Replace South Canton 138 kV breaker ‘N’ with an 80 kA breaker	AEP (100%)
b3001	Replace South Canton 138 kV breaker ‘N1’ with an 80 kA breaker	AEP (100%)
b3002	Replace South Canton 138 kV breaker ‘N2’ with an 80 kA breaker	AEP (100%)
b3036	Rebuild 15.6 miles of Haviland - North Delphos 138 kV line	AEP (100%)
b3037	Upgrades at the Natrium substation	AEP (100%)
b3038	Reconductor the Capitol Hill – Coco 138 kV line section	AEP (100%)
b3039	Line swaps at Muskingum 138 kV station	AEP (100%)
b3040.1	Rebuild Ravenswood – Racine tap 69 kV line section (~15 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3040.2	Rebuild existing Ripley – Ravenswood 69 kV circuit (~9 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor	AEP (100%)
b3040.3	Install new 3-way phase over phase switch at Sarah Lane station to replace the retired switch at Cottageville	AEP (100%)
b3040.4	Install new 138/12 kV 20 MVA transformer at Polymer station to transfer load from Mill Run station to help address overload on the 69 kV network	AEP (100%)
b3040.5	Retire Mill Run station	AEP (100%)
b3040.6	Install 28.8 MVAR cap bank at South Buffalo station	AEP (100%)
b3051.2	Adjust CT tap ratio at Ronceverte 138 kV	AEP (100%)
b3085	Reconductor Kammer – George Washington 138 kV line (approx. 0.08 mile). Replace the wave trap at Kammer 138 kV	AEP (100%)
b3086.1	Rebuild New Liberty – Findlay 34 kV line Str’s 1–37 (1.5 miles), utilizing 795 26/7 ACSR conductor	AEP (100%)
b3086.2	Rebuild New Liberty – North Baltimore 34 kV line Str’s 1-11 (0.5 mile), utilizing 795 26/7 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3086.3 Rebuild West Melrose – Whirlpool 34 kV line Str’s 55–80 (1 mile), utilizing 795 26/7 ACSR conductor		AEP (100%)
b3086.4 North Findlay station: Install a 138 kV 3000A 63kA line breaker and low side 34.5 kV 2000A 40 kA breaker, high side 138 kV circuit switcher on T1		AEP (100%)
b3086.5 Ebersole station: Install second 90 MVA 138/69/34 kV transformer. Install two low side (69 kV) 2000A 40 kA breakers for T1 and T2		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3095	Rebuild Lakin – Racine Tap 69 kV line section (9.2 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor	AEP (100%)
b3099	Install a 138 kV 3000A 40 kA circuit switcher on the high side of the existing 138/34.5 kV transformer No.5 at Holston station	AEP (100%)
b3100	Replace the 138 kV MOAB switcher “YY” with a new 138 kV circuit switcher on the high side of Chemical transformer No.6	AEP (100%)
b3101	Rebuild the 1/0 Cu. conductor sections (approx. 1.5 miles) of the Fort Robinson – Moccasin Gap 69 kV line section (approx. 5 miles) utilizing 556 ACSR conductor and upgrade existing relay trip limit (WN/WE: 63 MVA, line limited by remaining conductor sections)	AEP (100%)
b3102	Replace existing 50 MVA 138/69 kV transformers #1 and #2 (both 1957 vintage) at Fremont station with new 130 MVA 138/69 kV transformers	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3103.1	Install a 138/69 kV transformer at Royerton station. Install a 69 kV bus with one 69 kV breaker toward Bosman station. Rebuild the 138 kV portion into a ring bus configuration built for future breaker and a half with four 138 kV breakers	AEP (100%)
b3103.2	Rebuild the Bosman/Strawboard station in the clear across the road to move it out of the flood plain and bring it up to 69 kV standards	AEP (100%)
b3103.3	Retire 138 kV breaker L at Delaware station and re-purpose 138 kV breaker M for the Jay line	AEP (100%)
b3103.4	Retire all 34.5 kV equipment at Hartford City station. Re-purpose breaker M for the Bosman line 69 kV exit	AEP (100%)
b3103.5	Rebuild the 138 kV portion of Jay station as a 6 breaker, breaker and a half station re-using the existing breakers "A", "B", and "G." Rebuild the 69 kV portion of this station as a 6 breaker ring bus re-using the 2 existing 69 kV breakers. Install a new 138/69 kV transformer	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3103.6	Rebuild the 69 kV Hartford City – Armstrong Cork line but instead of terminating it into Armstrong Cork, terminate it into Jay station	AEP (100%)
b3103.7	Build a new 69 kV line from Armstrong Cork – Jay station	AEP (100%)
b3103.8	Rebuild the 34.5 kV Delaware – Bosman line as the 69 kV Royerton – Strawboard line. Retire the line section from Royerton to Delaware stations	AEP (100%)
b3104	Perform a sag study on the Polaris – Westerville 138 kV line (approx. 3.6 miles) to increase the summer emergency rating to 310 MVA	AEP (100%)
b3105	Rebuild the Delaware – Hyatt 138 kV line (approx. 4.3 miles) along with replacing conductors at both Hyatt and Delaware substations	AEP (100%)
b3106	Perform a sag study (6.8 miles of line) to increase the SE rating to 310 MVA. Note that results from the sag study could cover a wide range of outcomes, from no work required to a complete rebuild	AEP (100%)
b3109	Rebuild 5.2 miles Bethel – Sawmill 138 kV line including ADSS	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p>b3112</p> <p>Construct a single circuit 138 kV line (approx. 3.5 miles) from Amlin to Dublin using 1033 ACSR Curlew (296 MVA SN), convert Dublin station into a ring configuration, and re-terminating the Britton UG cable to Dublin station</p>		<p>AEP (100%)</p>
<p>b3116</p> <p>Replace existing Mullens 138/46 kV 30 MVA transformer No.4 and associated protective equipment with a new 138/46 kV 90 MVA transformer and associated protective equipment</p>		<p>AEP (100%)</p>
<p>b3119.1</p> <p>Rebuild the Jay – Pennville 138 kV line as double circuit 138/69 kV. Build a new 9.8 mile single circuit 69 kV line from near Pennville station to North Portland station</p>		<p>AEP (100%)</p>

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3119.2	Install three (3) 69 kV breakers to create the “U” string and add a low side breaker on the Jay transformer 2	AEP (100%)
b3119.3	Install two (2) 69 kV breakers at North Portland station to complete the ring and allow for the new line	AEP (100%)
b3129	At Conesville 138 kV station: Remove line leads to generating units, transfer plant AC service to existing station service feeds in Conesville 345/138 kV yard, and separate and reconfigure protection schemes	AEP (100%)
b3131	At East Lima and Haviland 138 kV stations, replace line relays and wavetrap on the East Lima – Haviland 138 kV facility	AEP (100%)
b3131.1	Rebuild approximately 12.3 miles of remaining Lark conductor on the double circuit line between Haviland and East Lima with 1033 54/7 ACSR conductor	AEP (100%)
b3132	Rebuild 3.11 miles of the LaPorte Junction – New Buffalo 69 kV line with 795 ACSR	AEP (100%)
b3139	Rebuild the Garden Creek – Whetstone 69 kV line (approx. 4 miles)	AEP (100%)
b3140	Rebuild the Whetstone – Knox Creek 69 kV line (approx. 3.1 miles)	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3141	Rebuild the Knox Creek – Coal Creek 69 kV line (approx. 2.9 miles)	AEP (100%)
b3148.1	Rebuild the 46 kV Bradley – Scarbro line to 96 kV standards using 795 ACSR to achieve a minimum rate of 120 MVA. Rebuild the new line adjacent to the existing one leaving the old line in service until the work is completed	AEP (100%)
b3148.2	Bradley remote end station work, replace 46 kV bus, install new 12 MVAR capacitor bank	AEP (100%)
b3148.3	Replace the existing switch at Sun substation with a 2-way SCADA-controlled motor-operated air-breaker switch	AEP (100%)
b3148.4	Remote end work and associated equipment at Scarbro station	AEP (100%)
b3148.5	Retire Mt. Hope station and transfer load to existing Sun station	AEP (100%)
b3149	Rebuild the 2.3 mile Decatur – South Decatur 69 kV line using 556 ACSR	AEP (100%)
b3150	Rebuild Ferguson 69/12 kV station in the clear as the 138/12 kV Bear station and connect it to an approx. 1 mile double circuit 138 kV extension from the Aviation – Ellison Road 138 kV line to remove the load from the 69 kV line	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3151.1	Rebuild the 30 mile Gateway – Wallen 34.5 kV circuit as the 27 mile Gateway – Wallen 69 kV line	AEP (100%)
b3151.2	Retire approx. 3 miles of the Columbia – Whitley 34.5 kV line	AEP (100%)
b3151.3	At Gateway station, remove all 34.5 kV equipment and install one (1) 69 kV circuit breaker for the new Whitley line entrance	AEP (100%)
b3151.4	Rebuild Whitley as a 69 kV station with two (2) lines and one (1) bus tie circuit breaker	AEP (100%)
b3151.5	Replace the Union 34.5 kV switch with a 69 kV switch structure	AEP (100%)
b3151.6	Replace the Eel River 34.5 kV switch with a 69 kV switch structure	AEP (100%)
b3151.7	Install a 69 kV Bobay switch at Woodland station	AEP (100%)
b3151.8	Replace the Carroll and Churubusco 34.5 kV stations with the 69 kV Snapper station. Snapper station will have two (2) line circuit breakers, one (1) bus tie circuit breaker and a 14.4 MVAR cap bank	AEP (100%)
b3151.9	Remove 34.5 kV circuit breaker “AD” at Wallen station	AEP (100%)
b3151.10	Rebuild the 2.5 miles of the Columbia – Gateway 69 kV line	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3151.11	Rebuild Columbia station in the clear as a 138/69 kV station with two (2) 138/69 kV transformers and 4-breaker ring buses on the high and low side. Station will reuse 69 kV breakers “J” & “K” and 138 kV breaker “D”		AEP (100%)
b3151.12	Rebuild the 13 miles of the Columbia – Richland 69 kV line		AEP (100%)
b3151.13	Rebuild the 0.5 mile Whitley – Columbia City No.1 line as 69 kV		AEP (100%)
b3151.14	Rebuild the 0.5 mile Whitley – Columbia City No.2 line as 69 kV		AEP (100%)
b3151.15	Rebuild the 0.6 mile double circuit section of the Rob Park – South Hicksville / Rob Park – Diebold Road as 69 kV		AEP (100%)
b3160.1	Construct an approx. 2.4 miles double circuit 138 kV extension using 1033 ACSR (Aluminum Conductor Steel Reinforced) to connect Lake Head to the 138 kV network		AEP (100%)
b3160.2	Retire the approx.2.5 miles 34.5 kV Niles – Simplicity Tap line		AEP (100%)
b3160.3	Retire the approx.4.6 miles Lakehead 69 kV Tap		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3160.4	Build new 138/69 kV drop down station to feed Lakehead with a 138 kV breaker, 138 kV switcher, 138/69 kV transformer and a 138 kV Motor-Operated Air Break		AEP (100%)
b3160.5	Rebuild the approx. 1.2 miles Buchanan South 69 kV Radial Tap using 795 ACSR (Aluminum Conductor Steel Reinforced)		AEP (100%)
b3160.6	Rebuild the approx.8.4 miles 69 kV Pletcher – Buchanan Hydro line as the approx. 9 miles Pletcher – Buchanan South 69 kV line using 795 ACSR (Aluminum Conductor Steel Reinforced)		AEP (100%)
b3160.7	Install a PoP (Point-of-Presence) switch at Buchanan South station with 2 line MOABs (Motor-Operated Air Break)		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3208	Retire approximately 38 miles of the 44 mile Clifford – Scottsville 46 kV circuit. Build new 138 kV “in and out” to two new distribution stations to serve the load formerly served by Phoenix, Shipman, Schuyler (AEP), and Rockfish stations. Construct new 138 kV lines from Joshua Falls – Riverville (approx. 10 miles) and Riverville – Gladstone (approx. 5 miles). Install required station upgrades at Joshua Falls, Riverville and Gladstone stations to accommodate the new 138 kV circuits. Rebuild Reusen – Monroe 69 kV (approx. 4 miles)	AEP (100%)
b3209	Rebuild the 10.5 mile Berne – South Decatur 69 kV line using 556 ACSR	AEP (100%)
b3210	Replace approx. 0.7 mile Beatty – Galloway 69 kV line with 4000 kcmil XLPE cable	AEP (100%)
b3220	Install 14.4 MVAR capacitor bank at Whitewood 138 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3243	Replace risers at the Bass 34.5 kV station	AEP (100%)
b3244	Rebuild approximately 9 miles of the Robinson Park – Harlan 69 kV line	AEP (100%)
b3248	Install a low side 69 kV circuit breaker at the Albion 138/69 kV transformer #1	AEP (100%)
b3249	Rebuild the Chatfield – Melmore 138 kV line (approximately 10 miles) to 1033 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3253	Install a 3000A 40 kA 138 kV breaker on the high side of 138/69 kV transformer #5 at the Millbrook Park station. The transformer and associated bus protection will be upgraded accordingly	AEP (100%)
b3255	Upgrade 795 AAC risers at the Sand Hill 138 kV station towards Cricket Switch with 1272 AAC	AEP (100%)
b3256	Upgrade 500 MCM Cu risers at Tidd 138 kV station towards Wheeling Steel; replace with 1272 AAC conductor	AEP (100%)
b3257	Replace two spans of 336.4 26/7 ACSR on the Twin Branch – AM General #2 34.5 kV circuit	AEP (100%)
b3258	Install a 3000A 63 kA 138 kV breaker on the high side of 138/69 kV transformer #2 at Wagenhals station. The transformer and associated bus protection will be upgraded accordingly	AEP (100%)
b3259	At West Millersburg station, replace the 138 kV MOAB on the West Millersburg – Wooster 138 kV line with a 3000A 40 kA breaker	AEP (100%)
b3261	Upgrade circuit breaker “R1” at Tanners Creek 345 kV. Install Transient Recovery Voltage capacitor to increase the rating from 50 kA to 63 kA	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3269	At West New Philadelphia station, add a high side 138 kV breaker on the 138/69 kV Transformer #2 along with a 138 kV breaker on the line towards Newcomerstown		AEP (100%)
b3270	Install 1.7 miles of 795 ACSR 138 kV conductor along the other side of Dragoon Tap 138 kV line, which is currently double circuit tower with one position open. Additionally, install a second 138/34.5 kV transformer at Dragoon, install a high side circuit switcher on the current transformer at the Dragoon Station, and install two (2) 138 kV line breakers on the Dragoon – Jackson 138 kV and Dragoon – Twin Branch 138 kV lines		AEP (100%)
b3270.1	Replace Dragoon 34.5 kV breakers “B”, “C”, and “D” with 40 kA breakers		AEP (100%)
b3271	Install a 138 kV circuit breaker at Fremont station on the line towards Fremont Center and install a 9.6 MVAR 69 kV capacitor bank at Bloom Road station		AEP (100%)
b3272	Install two 138 kV circuit switchers on the high side of 138/34.5 kV Transformers #1 and #2 at Rockhill station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3273.1	Rebuild and convert the existing 17.6 miles East Leipsic – New Liberty 34.5 kV circuit to 138 kV using 795 ACSR	AEP (100%)
b3273.2	Convert the existing 34.5 kV equipment to 138 kV and expand the existing McComb station to the north and east to allow for new equipment to be installed. Install two (2) new 138 kV box bays to allow for line positions and two (2) new 138/12 kV transformers	AEP (100%)
b3273.3	Expand the existing East Leipsic 138 kV station to the north to allow for another 138 kV line exit to be installed. The new line exit will involve installing a new 138 kV circuit breaker, disconnect switches and the addition of a new dead end structure along with the extension of the existing 138 kV bus work	AEP (100%)
b3273.4	Add one (1) 138 kV circuit breaker and disconnect switches in order to add an additional line position at New Liberty 138 kV station. Install line relaying potential devices and retire the 34.5 kV breaker ‘F’	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3274	Rebuild approximately 8.9 miles of 69 kV line between Newcomerstown and Salt Fork Switch with 556 ACSR conductor		AEP (100%)
b3275.1	Rebuild the Kammer Station – Cresaps Switch 69 kV line, approximately 0.5 mile		AEP (100%)
b3275.2	Rebuild the Cresaps Switch – McElroy Station 69 kV, approximately 0.67 mile		AEP (100%)
b3275.3	Replace a single span of 4/0 ACSR from Moundsville - Natrium structure 93L to Carbon Tap switch 69 kV located between the Colombia Carbon and Conner Run stations. Remainder of the line is 336 ACSR		AEP (100%)
b3275.4	Rebuild from Colombia Carbon to Columbia Carbon Tap structure 93N 69 kV, approximately 0.72 mile. The remainder of the line between Colombia Carbon Tap structure 93N and Natrium station is 336 ACSR and will remain		AEP (100%)
b3275.5	Replace the Cresaps 69 kV 3-Way Phase-Over-Phase switch and structure with a new 1200A 3-Way switch and steel pole		AEP (100%)
b3275.6	Replace 477 MCM Alum bus and risers at McElroy 69 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3275.7	Replace Natrium 138 kV bus existing between CB-BT1 and along the 138 kV Main Bus #1 dropping to CBH1 from the 500 MCM conductors to a 1272 KCM AAC conductor. Replace the dead end clamp and strain insulators	AEP (100%)
b3276.1	Rebuild the 2/0 Copper section of the Lancaster – South Lancaster 69 kV line, approximately 2.9 miles of the 3.2 miles total length with 556 ACSR conductor. The remaining section has a 336 ACSR conductor	AEP (100%)
b3276.2	Rebuild the 1/0 Copper section of the line between Lancaster Junction and Ralston station 69 kV, approximately 2.3 miles of the 3.1 miles total length	AEP (100%)
b3276.3	Rebuild the 2/0 Copper portion of the line between East Lancaster Tap and Lancaster 69 kV, approximately 0.81 mile	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3278.1	Replace H.S. MOAB switches on the high side of the 138/69/34.5 kV transformer T1 with a H.S. circuit switcher at Saltville station		AEP (100%)
b3278.2	Replace existing 138/69/34.5 kV transformer T2 with a new 130 MVA 138/69/13 kV transformer at Meadowview station		AEP (100%)
b3279	Install a new 138 kV, 21.6 MVAR cap bank and circuit switcher at Apple Grove station		AEP (100%)
b3280	Rebuild the existing Cabin Creek – Kelly Creek 46 kV line (to Structure 366-44), approximately 4.4 miles. This section is double circuit with the existing Cabin Creek – London 46 kV line so a double circuit rebuild would be required		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3282.1	Install a second 138 kV circuit utilizing 795 ACSR conductor on the open position of the existing double circuit towers from East Huntington – North Proctorville. Remove the existing 34.5 kV line from East Huntington – North Chesapeake and rebuild this section to 138 kV served from a new PoP switch off the new East Huntington – North Proctorville 138 kV #2 line		AEP (100%)
b3282.2	Install a 138 kV 40 kA circuit breaker at North Proctorville station		AEP (100%)
b3282.3	Install a 138 kV 40 kA circuit breaker at East Huntington station		AEP (100%)
b3282.4	Convert the existing 34/12 kV North Chesapeake to a 138/12 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3284	Rebuild approximately 5.44 miles of 69 kV line from Lock Lane to Point Pleasant	AEP (100%)
b3285	Replace the Meigs 69 kV 4/0 Cu station riser towards Gavin and rebuild the section of the Meigs – Hemlock 69 kV circuit from Meigs to approximately Structure #40 (about 4 miles) replacing the line conductor 4/0 ACSR with the line conductor size 556.5 ACSR	AEP (100%)
b3286	Reconductor the first 3 spans from Merrimac station to Structure 464-3 of 3/0 ACSR conductor utilizing 336 ACSR on the existing Merrimac – Midway 69 kV circuit	AEP (100%)
b3287	Upgrade 69 kV risers at Moundsville station towards George Washington	AEP (100%)
b3289.1	Install high-side circuit switcher on 138/69/12 kV T5 at Roanoke station	AEP (100%)
b3289.2	Install high-side circuit switcher on 138/69/34.5 kV T1 at Huntington Court station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3290.1	Build 9.4 miles of single circuit 69 kV line from Roselms to near East Ottoville 69 kV switch	AEP (100%)
b3290.2	Rebuild 7.5 miles of double circuit 69 kV line between East Ottoville switch and Kalida station (combining with the new Roselms to Kalida 69 kV circuit)	AEP (100%)
b3290.3	At Roselms switch, install a new three way 69 kV, 1200 A phase-over-phase switch, with sectionalizing capability	AEP (100%)
b3290.4	At Kalida 69 kV station, terminate the new line from Roselms switch. Move the CS XT2 from high side of T2 to the high side of T1. Remove existing T2 transformer	AEP (100%)
b3291	Replace the Russ St. 34.5 kV switch	AEP (100%)
b3292	Replace existing 69 kV capacitor bank at Stuart station with a 17.2 MVAR capacitor bank	AEP (100%)
b3293	Replace 2/0 Cu entrance span conductor on the South Upper Sandusky 69 kV line and 4/0 Cu Risers/Bus conductors on the Forest line at Upper Sandusky 69 kV station	AEP (100%)
b3294	Replace existing 69 kV disconnect switches for circuit breaker "C" at Walnut Avenue station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3295	Grundy 34.5 kV: Install a 34.5 kV 9.6 MVAR cap bank	AEP (100%)
b3296	Rebuild the overloaded portion of the Concord – Whitaker 34.5 kV line (1.13 miles). Rebuild is double circuit and will utilize 795 ACSR conductor	AEP (100%)
b3297.1	Rebuild 4.23 miles of 69 kV line between Sawmill and Lazelle station, using 795 ACSR 26/7 conductor	AEP (100%)
b3297.2	Rebuild 1.94 miles of 69 kV line between Westerville and Genoa stations, using 795 ACSR 26/7 conductor	AEP (100%)
b3297.3	Replace risers and switchers at Lazelle, Westerville, and Genoa 69 kV stations. Upgrade associated relaying accordingly	AEP (100%)
b3298	Rebuild 0.8 mile of double circuit 69 kV line between South Toronto and West Toronto. Replace 219 ACSR with 556 ACSR	AEP (100%)
b3298.1	Replace the 69 kV breaker D at South Toronto station with 40 kA breaker	AEP (100%)
b3299	Rebuild 0.2 mile of the West End Fostoria - Lumberjack Switch 69 kV line with 556 ACSR (Dove) conductors. Replace jumpers on West End Fostoria line at Lumberjack Switch	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3308	Reconductor and rebuild 1 span of T-line on the Fort Steuben – Sunset Blvd 69 kV branch with 556 ACSR		AEP (100%)
b3309	Rebuild 1.75 miles of the Greenlawn – East Tiffin line section of the Carothers – Greenlawn 69 kV circuit containing 133 ACSR conductor with 556 ACSR conductor. Upgrade relaying as required		AEP (100%)
b3310.1	Rebuild 10.5 miles of the Howard – Willard 69 kV line utilizing 556 ACSR conductor		AEP (100%)
b3310.2	Upgrade relaying at Howard 69 kV station		AEP (100%)
b3310.3	Upgrade relaying at Willard 69 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3312	Rebuild approximately 4 miles of existing 69 kV line between West Mount Vernon and Mount Vernon stations. Replace the existing 138/69 kV transformer at West Mount Vernon with a larger 90 MVA unit along with existing 69 kV breaker 'C'	AEP (100%)
b3313	Add 40 kA circuit breakers on the low and high side of the East Lima 138/69 kV transformer	AEP (100%)
b3314.1	Install a new 138/69 kV 130 MVA transformer and associated protection at Elliot station	AEP (100%)
b3314.2	Perform work at Strouds Run station to retire 138/69/13 kV 33.6 MVA Transformer #1 and install a dedicated 138/13 KV distribution transformer	AEP (100%)
b3315	Upgrade relaying on Mark Center – South Hicksville 69 kV line and replace Mark Center cap bank with a 7.7 MVAR unit	AEP (100%)
b3320	Replace the CT at Don Marquis 345 kV station	AEP (100%)
b3336	Rebuild 6 miles Benton Harbor - Riverside 138 kV double circuit extension	AEP (100%)
b3337	Replace the one (1) Hyatt 138 kV breaker “AB1” (101N) with 3000 A, 63 kA interrupting breaker	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3338	Replace the two (2) Kenny 138 kV breakers, “102” (SC-3) and “106” (SC-4), each with a 3000 A, 63 kA interrupting breaker	AEP (100%)
b3339	Replace the one (1) Canal 138 kV breaker “3” with 3000 A, 63 kA breaker	AEP (100%)
b3342	Replace the 2156 ACSR and 2874 ACSR bus and risers with 2-bundled 2156 ACSR at Muskingum River 345 kV station to address loading issues on Muskingum - Waterford 345 kV line	AEP (100%)
b3343	Rebuild approximately 0.3 miles of the overloaded 69 kV line between Albion - Philips Switch and Philips Switch - Brimfield Switch with 556 ACSR conductor	AEP (100%)
b3344.1	Install two (2) 138 kV circuit breakers in the M and N strings in the breaker-and-a-half configuration in West Kingsport station 138 kV yard to allow the Clinch River - Moreland Dr. 138 kV to cut in the West Kingsport station	AEP (100%)
b3344.2	Upgrade remote end relaying at Riverport 138 kV station due to the line cut in at West Kingsport station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3345.1	Rebuild approximately 4.2 miles of overloaded sections of the 69 kV line between Salt Fork switch and Leatherwood switch with 556 ACSR	AEP (100%)
b3345.2	Update relay settings at Broom Road station	AEP (100%)
b3346.1	Rebuild approximately 3.5 miles of overloaded 69 kV line between North Delphos – East Delphos – Elida Road switch station. This includes approximately 1.1 miles of double circuit line that makes up a portion of the North Delphos – South Delphos 69 kV line and the North Delphos – East Delphos 69 kV line. Approximately 2.4 miles of single circuit line will also be rebuilt between the double circuit portion to East Delphos station and from East Delphos to Elida Road switch station	AEP (100%)
b3346.2	Replace the line entrance spans at South Delphos station to eliminate the overloaded 4/0 Copper and 4/0 ACSR conductor	AEP (100%)
b3347.1	Rebuild approximately 20 miles of 69 kV line between Bancroft and Milton stations with 556 ACSR conductor	AEP (100%)
b3347.2	Replace the jumpers around Hurrican switch with 556 ACSR	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3347.3	Replace the jumpers around Teays switch with 556 ACSR		AEP (100%)
b3347.4	Update relay settings at Winfield station to coordinate with remote ends on line rebuild		AEP (100%)
b3347.5	Update relay settings at Bancroft station to coordinate with remote ends on line rebuild		AEP (100%)
b3347.6	Update relay settings at Milton station to coordinate with remote ends on line rebuild		AEP (100%)
b3347.7	Update relay settings at Putnam Village station to coordinate with remote ends on line rebuild		AEP (100%)
b3348.1	Construct a 138 kV single bus station (Tin Branch) consisting of a 138 kV box bay with a distribution transformer and 12 kV distribution bay. Two 138 kV lines will feed this station (from Logan and Sprigg stations), and distribution will have one 12 kV feed. Install two 138 kV circuit breakers on the line exits. Install 138 kV circuit switcher for the new transformer		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3348.2	Construct a new 138/46/12 kV Argyle station to replace Dehue 46 kV station. Install a 138 kV ring bus using a breaker-and-a-half configuration, with an autotransformer with a 46 kV feed and a distribution transformer with a 12 kV distribution bay. Two 138 kV lines will feed this station (from Logan and Wyoming stations). There will also be a 46 kV feed from this station to Becco station. Distribution will have two 12 kV feeds. Retire Dehue 46 kV station in its entirety		AEP (100%)
b3348.3	Bring the Logan – Sprigg #2 138 kV circuit in and out of Tin Branch station by constructing approximately 1.75 miles of new overhead double circuit 138 kV line. Double circuit T3 series lattice towers will be used along with 795,000 cm ACSR 26/7 conductor. One shield wire will be conventional 7 #8 ALUMOWELD, and one shield wire will be optical ground wire (OPGW)		AEP (100%)
b3348.4	Logan-Wyoming No. 1 circuit in and out of the proposed Argyle 46 kV station. Double circuit T3 series lattice towers will be used along with 795,000 cm ACSR 26/7 conductor. One shield wire will be conventional 7 #8 ALUMOWELD, and one shield wire will be OPGW		AEP (100%)
b3348.5	Rebuild approximately 10 miles of 46 kV line between Becco and the new Argyle 46 kV substation. Retire approximately 16 miles of 46 kV line between the new Argyle substation and Chauncey station		AEP (100%)
b3348.6	Adjust relay settings due to new line terminations and retirements at Logan, Wyoming, Sprigg, Becco and Chauncey stations		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3350.1	Replace Bellefonte 69 kV breakers C, G, I, Z, AB and JJ in place. The new 69 kV breakers to be rated at 3000 A 40 kA		AEP (100%)
b3350.2	Upgrade remote end relaying at Point Pleasant, Coalton and South Point 69 kV substations		AEP (100%)
b3351	Replace the 69 kV in-line switches at Monterey 69 kV substation		AEP (100%)
b3354	Replace circuit breakers '42' and '43' at Bexley station with 3000 A, 40 kA 69 kV breakers (operated at 40 kV), slab, control cables and jumpers		AEP (100%)
b3355	Replace circuit breakers 'A' and 'B' at South Side Lima station with 1200 A, 25 kA 34.5 kV breakers, slab, control cables and jumpers		AEP (100%)
b3356	Replace circuit breaker 'H' at West End Fostoria station with 3000 A, 40 kA 69 kV breaker, slab, control cables and jumpers		AEP (100%)
b3357	Replace circuit breakers 'C', 'E,' and 'L' at Natrium station with 3000 A, 40 kA 69 kV breakers, slab, control cables and jumpers		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3358	Install a 69 kV 11.5 MVAR capacitor at Biers Run 69 kV station		AEP (100%)
b3359	Rebuild approximately 2.3 miles of the existing North Van Wert Sw. – Van Wert 69 kV line utilizing 556 ACSR conductor		AEP (100%)
b3362	Rebuild approximately 3.1 miles of the overloaded conductor on the existing Oertels Corner – North Portsmouth 69 kV line utilizing 556 ACSR		AEP (100%)
b3731	Replace 40 kV breaker J at McComb 138 kV station with a new 3000A 40 kA breaker		AEP (100%)
b3732	Install a 6 MVAR, 34.5 kV cap bank at Morgan Run station		AEP (100%)
b3733	Rebuild the 1.8 mile 69 kV line between Summerhill and Willow Grove Switch. Replace 4/0 ACSR conductor with 556 ACSR		AEP (100%)
b3734	Install a 7.7 MVAR, 69 kV cap bank at both Otway station and Rosemount station		AEP (100%)
b3735	Terminate the existing Broadford – Wolf Hills #1 138 kV line into Abingdon 138 kV Station. This line currently bypasses the existing Abingdon 138 kV station; Install two new 138 kV circuit breakers on each new line exit towards Broadford and towards Wolf Hills #1 station; Install one new 138 kV circuit breaker on line exit towards South Abingdon station for standard bus sectionalizing		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3736.1	Establish 69 kV bus and new 69 kV line Circuit Breaker at Dorton substation		AEP (100%)
b3736.2	At Breaks substation, reuse 72 kV breaker A as the new 69 kV line breaker		AEP (100%)
b3736.3	Rebuild approximately 16.7 miles Dorton – Breaks 46 kV line to 69 kV line		AEP (100%)
b3736.4	Retire approximately 17.2 miles Cedar Creek – Elwood 46 kV line		AEP (100%)
b3736.5	Retire approximately 6.2 miles Henry Clay – Elwood 46 kV line section		AEP (100%)
b3736.6	Retire Henry Clay 46 kV substation and replace with Poor Bottom 69 kV station. Install a new 0.7 mile double circuit extension to Poor Bottom 69 kV station		AEP (100%)
b3736.7	Retire Draffin substation and replace with a new substation. Install a new 0.25 mile double circuit extension to New Draffin substation		AEP (100%)
b3736.8	Remote end work at Jenkins substation		AEP (100%)
b3736.9	Provide transition fiber to Dorton, Breaks, Poor Bottom, Jenkins and New Draffin 69 kV substations		AEP (100%)
b3736.10	Henry Clay switch station retirement		AEP (100%)
b3736.11	Cedar Creek substation work		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3736.12	Breaks substation 46 kV equipment retirement	AEP (100%)
b3736.13	Retire Pike 29 switch station and Rob Fork switch station	AEP (100%)
b3736.14	Serve Pike 29 and Rob Fork substation customers from nearby 34 kV distribution sources	AEP (100%)
b3736.15	Poor Bottom 69 kV substation install	AEP (100%)
b3736.16	Henry Clay 46 kV substation retirement	AEP (100%)
b3736.17	New Draffin 69 kV substation install	AEP (100%)
b3736.18	Draffin 46 kV substation retirement	AEP (100%)
b3763	Replace the Jug Street 138 kV breakers M, N, BC, BD, BE, BF, D, H, J, L, BG, BH, BJ, BK with 80 KA breakers	AEP (100%)
b3764	Replace the Hyatt 138 kV breakers AB1 and AD1 with 63 kA breakers	AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3766.1	Hayes – New Westville 138 kV line: Build approximately 0.19 miles of 138 kV line to the Indiana/ Ohio State line to connect to AES’s line portion of the Hayes – New Westville 138 kV line with the conductor size 795 ACSR26/7 Drake. This sub-ID includes the cost of line construction and Right of Way (ROW)		AEP (100%)
b3766.2	Hayes – Hodgin 138 kV line: Build approximately 0.05 mile of 138 kV line with the conductor size 795 ACSR26/7 Drake. This sub-ID includes the line construction, ROW, and fiber		AEP (100%)
b3766.3	Hayes 138 kV: Build a new 4-138 kV circuit breaker ring bus. This sub-ID includes the cost of new station construction, property purchase, metering, station fiber and the College Corner – Randolph 138 kV line connection		AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.6	Perform sag study mitigation work on the Dumont – Stillwell 345 kV line (remove a center-pivot irrigation system from under the line, allowing for the normal and emergency ratings of the line to increase)	<p><b>Reliability Driver:</b> AEP (12.38%) / ComEd (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3775.7	Upgrade the limiting element at Stillwell or Dumont substation to increase the rating of the Stillwell – Dumont 345 kV line to match conductor rating		<p><b>Reliability Driver:</b> AEP (12.38%) / Dayton (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>
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**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3775.10	Perform a sag study on the Olive – University Park 345 kV line to increase the operating temperature to 225 F. Remediation work includes two tower replacements on the line.		<p><b>Reliability Driver:</b> AEP (100%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>
b3775.11	Upgrade the limiting element at Stillwell substation to increase the rating of the Stillwell – Dumont 345 kV line to match conductor rating		<p><b>Reliability Driver:</b> AEP (12.38%) / ComEd (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

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\*\*East Coast Power, L.L.C.

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**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<p><u>b3800.100</u></p>	<p><u>Establish a new 500 kV breaker position for the low-side of the existing 765/500 kV transformer at Cloverdale Station. The new position will be between two new 500 kV circuit breakers located in a new breaker string, electrically converting the 500 kV yard to “double-bus double-breaker” configuration.</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEP (100%)</u></p>

\*Neptune Regional Transmission System, LLC

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<p><u>b3800.121</u></p>	<p><u>Kammer to 502 Junction 500 kV line: Conduct LIDAR Sag Study to assess SE rating and needed upgrades</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEP (21.66%) / APS (0.01%) / BGE (7.14%) / DEOK (0.01%) / Dominion (62.25%) / PEPCO (8.93%)</u></p>
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\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(20) Virginia Electric and Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1698.7	Replace Loudoun 230 kV breaker '203052' with 63 kA rating	Dominion (100%)
b1696.1	Replace the Idylwood 230 kV '25112' breaker with 50 kA breaker	Dominion (100%)
b1696.2	Replace the Idylwood 230 kV '209712' breaker with 50 kA breaker	Dominion (100%)
b1793.1	Remove the Carolina 22 SPS to include relay logic changes, minor control wiring, relay resets and SCADA programming upon completion of project	Dominion (100%)
b2281	Additional Temporary SPS at Bath County	Dominion (100%)
b2350	Reconductor 211 feet of 545.5 ACAR conductor on 59 Line Elmont - Greenwood DP 115 kV to achieve a summer emergency rating of 906 amps or greater	Dominion (100%)
b2358	Install a 230 kV 54 MVAR capacitor bank on the 2016 line at Harmony Village Substation	Dominion (100%)
b2359	Wreck and rebuild approximately 1.3 miles of existing 230 kV line between Cochran Mill - X4-039 Switching Station	Dominion (100%)
b2360	Build a new 39 mile 230 kV transmission line from Dooms - Lexington on existing right-of-way	Dominion (100%)
b2361	Construct 230 kV OH line along existing Line #2035 corridor, approx. 2.4 miles from Idylwood - Dulles Toll Road (DTR) and 2.1 miles on new right-of-way along DTR to new Scott's Run Substation	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2368	Replace the Brambleton 230 kV breaker '209502' with 63 kA breaker	Dominion (100%)
b2369	Replace the Brambleton 230 kV breaker '213702' with 63 kA breaker	Dominion (100%)
b2370	Replace the Brambleton 230 kV breaker 'H302' with 63 kA breaker	Dominion (100%)
b2373	Build a 2nd Loudoun - Brambleton 500 kV line within the existing ROW. The Loudoun - Brambleton 230 kV line will be relocated as an underbuild on the new 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (83.98%) / Dominion (16.02%)</p>
b2397	Replace the Beaumeade 230 kV breaker '2079T2116' with 63 kA	Dominion (100%)
b2398	Replace the Beaumeade 230 kV breaker '2079T2130' with 63 kA	Dominion (100%)
b2399	Replace the Beaumeade 230 kV breaker '208192' with 63 kA	Dominion (100%)
b2400	Replace the Beaumeade 230 kV breaker '209592' with 63 kA	Dominion (100%)
b2401	Replace the Beaumeade 230 kV breaker '211692' with 63 kA	Dominion (100%)
b2402	Replace the Beaumeade 230 kV breaker '227T2130' with 63 kA	Dominion (100%)

The Annual Revenue Requirement for all Virginia Electric and Power Company projects in this Section 20 shall be as specified in Attachment 7 to Appendix A of Attachment H-16A and under the procedures detailed in Attachment H-16B.

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2403	Replace the Beaumeade 230 kV breaker '274T2130' with 63 kA	Dominion (100%)
b2404	Replace the Beaumeade 230 kV breaker '227T2095' with 63 kA	Dominion (100%)
b2405	Replace the Pleasant view 230 kV breaker '203T274' with 63 kA	Dominion (100%)
b2443	Construct new underground 230 kV line from Glebe to Station C, rebuild Glebe Substation, construct 230 kV high side bus at Station C with option to install 800 MVA PAR	Dominion (97.11%) / ME (0.18%) / PEPCO (2.71%)
b2443.1	Replace the Idylwood 230 kV breaker '203512' with 50 kA	Dominion (100%)
b2443.2	Replace the Ox 230 kV breaker '206342' with 63 kA breaker	Dominion (100%)
b2443.3	Glebe – Station C PAR	<b>DFAX Allocation:</b> Dominion (22.57%) / PEPCO (77.43%)
b2443.6	Install a second 500/230 kV transformer at Possum Point substation and replace bus work and associated equipment as needed	Dominion (100%)
b2443.7	Replace 19 63 kA 230 kV breakers with 19 80 kA 230 kV breakers	Dominion (100%)
b2457	Replace 24 115 kV wood h-frames with 230 kV Dominion pole H-frame structures on the Clubhouse – Purdy 115 kV line	Dominion (100%)
b2458.1	Replace 12 wood H-frame structures with steel H-frame structures and install shunts on all conductor splices on Carolina – Woodland 115 kV	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2458.2	Upgrade all line switches and substation components at Carolina 115 kV to meet or exceed new conductor rating of 174 MVA	Dominion (100%)
b2458.3	Replace 14 wood H-frame structures on Carolina – Woodland 115 kV	Dominion (100%)
b2458.4	Replace 2.5 miles of static wire on Carolina – Woodland 115 kV	Dominion (100%)
b2458.5	Replace 4.5 miles of conductor between Carolina 115 kV and Jackson DP 115 kV with min. 300 MVA summer STE rating; Replace 8 wood H-frame structures located between Carolina and Jackson DP with steel H-frames	Dominion (100%)
b2460.1	Replace Hanover 230 kV substation line switches with 3000A switches	Dominion (100%)
b2460.2	Replace wave traps at Four River 230 kV and Elmont 230 kV substations with 3000A wave traps	Dominion (100%)
b2461	Wreck and rebuild existing Remington CT – Warrenton 230 kV (approx. 12 miles) as a double-circuit 230 kV line	Dominion (100%)
b2461.1	Construct a new 230 kV line approximately 6 miles from NOVEC’s Wheeler Substation a new 230 kV switching station in Vint Hill area	Dominion (100%)
b2461.2	Convert NOVEC’s Gainesville – Wheeler line (approximately 6 miles) to 230 kV	Dominion (100%)
b2461.3	Complete a Vint Hill – Wheeler – Loudoun 230 kV networked line	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p>b2471</p> <p>Replace Midlothian 500 kV breaker 563T576 and motor operated switches with 3 breaker 500 kV ring bus. Terminate Lines # 563 Carson – Midlothian, #576 Midlothian –North Anna, Transformer #2 in new ring</p>		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
<p>b2504</p> <p>Rebuild 115 kV Line #32 from Halifax-South Boston (6 miles) for min. of 240 MVA and transfer Welco tap to Line #32. Moving Welco to Line #32 requires disabling auto-sectionalizing scheme</p>		<p>Dominion (100%)</p>
<p>b2505</p> <p>Install structures in river to remove the 115 kV #65 line (Whitestone-Harmony Village 115 kV) from bridge and improve reliability of the line</p>		<p>Dominion (100%)</p>
<p>b2542</p> <p>Replace the Loudoun 500 kV ‘H2T502’ breaker with a 50 kA breaker</p>		<p>Dominion (100%)</p>
<p>b2543</p> <p>Replace the Loudoun 500 kV ‘H2T584’ breaker with a 50 kA breaker</p>		<p>Dominion (100%)</p>
<p>b2565</p> <p>Reconductor wave trap at Carver Substation with a 2000A wave trap</p>		<p>Dominion (100%)</p>
<p>b2566</p> <p>Reconductor 1.14 miles of existing line between ACCA and Hermitage and upgrade associated terminal equipment</p>		<p>Dominion (100%)</p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2582	Rebuild the Elmont – Cunningham 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (5.71%) / Dominion (84.43%) / PEPCO (9.86%)</p>
b2583	Install 500 kV breaker at Ox Substation to remove Ox Tx#1 from H1T561 breaker failure outage	Dominion (100%)
b2584	Relocate the Bremono load (transformer #5) to #2028 (Bremono-Charlottesville 230 kV) line and Cartersville distribution station to #2027 (Bremono-Midlothian 230 kV) line	Dominion (100%)
b2585	Reconductor 7.63 miles of existing line between Cranes and Stafford, upgrade associated line switches at Stafford	PEPCO (100%)
b2620	Wreck and rebuild the Chesapeake – Deep Creek – Bowers Hill – Hodges Ferry 115 kV line; minimum rating 239 MVA normal/emergency, 275 MVA load dump rating	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2622	Rebuild Line #47 between Kings Dominion 115 kV and Fredericksburg 115 kV to current standards with summer emergency rating of 353 MVA at 115 kV	Dominion (100%)
b2623	Rebuild Line #4 between Bremo and Structure 8474 (4.5 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV	Dominion (100%)
b2624	Rebuild 115 kV Lines #18 and #145 between Possum Point Generating Station and NOVEC's Smoketown DP (approx. 8.35 miles) to current 230 kV standards with a normal continuous summer rating of 524 MVA at 115 kV	Dominion (100%)
b2625	Rebuild 115 kV Line #48 between Thole Street and Structure 48/71 to current standard. The remaining line to Sewells Point is 2007 vintage. Rebuild 115 kV Line #107 line, Sewells Point to Oakwood, between structure 107/17 and 107/56 to current standard	Dominion (100%)
b2626	Rebuild 115 kV Line #34 between Skiffes Creek and Yorktown and the double circuit portion of 115 kV Line #61 to current standards with a summer emergency rating of 353 MVA at 115 kV	Dominion (100%)
b2627	Rebuild 115 kV Line #1 between Crewe 115 kV and Fort Pickett DP 115 kV (12.2 miles) to current standards with summer emergency rating of 261 MVA at 115 kV	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2628	Rebuild 115 kV Line #82 Everetts – Voice of America (20.8 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV		Dominion (100%)
b2629	Rebuild the 115 kV Lines #27 and #67 lines from Greenwich 115 kV to Burton 115 kV Structure 27/280 to current standard with a summer emergency rating of 262 MVA at 115 kV		Dominion (100%)
b2630	Install circuit switchers on Gravel Neck Power Station GSU units #4 and #5. Install two 230 kV CCVT's on Lines #2407 and #2408 for loss of source sensing		Dominion (100%)
b2636	Install three 230 kV bus breakers and 230 kV, 100 MVAR Variable Shunt Reactor at Dahlgren to provide line protection during maintenance, remove the operational hazard and provide voltage reduction during light load conditions		Dominion (100%)
b2647	Rebuild Boydton Plank Rd – Kerr Dam 115 kV Line #38 (8.3 miles) to current standards with summer emergency rating of 353 MVA at 115 kV		Dominion (100%)
b2648	Rebuild Carolina – Kerr Dam 115 kV Line #90 (38.7 miles) to current standards with summer emergency rating of 353 MVA 115 kV		Dominion (100%)
b2649	Rebuild Clubhouse – Carolina 115 kV Line #130 (17.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2649.1	Rebuild of 1.7 mile tap to Metcalf and Belfield DP (MEC) due to poor condition. The existing summer rating of the tap is 48 MVA and existing conductor is 4/0 ACSR on wood H-frames. The proposed new rating is 176 MVA using 636 ACSR conductor		Dominion (100%)
b2649.2	Rebuild of 4.1 mile tap to Brinks DP (MEC) due to wood poles built in 1962. The existing summer rating of the tap is 48 MVA and existing conductor is 4/0 ACSR and 393.6 ACSR on wood H-frames. The proposed new rating is 176 MVA using 636 ACSR conductor		Dominion (100%)
b2650	Rebuild Twittys Creek – Pamplin 115 kV Line #154 (17.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2651	Rebuild Buggs Island – Plywood 115 kV Line #127 (25.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV. The line should be rebuilt for 230 kV and operated at 115 kV	Dominion (100%)
b2652	Rebuild Greatbridge – Hickory 115 kV Line #16 and Greatbridge – Chesapeake E.C. to current standard with summer emergency rating of 353 MVA at 115 kV	Dominion (100%)
b2653.1	Build 20 mile 115 kV line from Pantego to Trowbridge with summer emergency rating of 353 MVA	Dominion (100%)
b2653.2	Install 115 kV four-breaker ring bus at Pantego	Dominion (100%)
b2653.3	Install 115 kV breaker at Trowbridge	Dominion (100%)
b2654.1	Build 15 mile 115 kV line from Scotland Neck to S Justice Branch with summer emergency rating of 353 MVA. New line will be routed to allow HEMC to convert Dawson’s Crossroads RP from 34.5 kV to 115 kV	Dominion (100%)
b2654.2	Install 115 kV three-breaker ring bus at S Justice Branch	Dominion (100%)
b2654.3	Install 115 kV breaker at Scotland Neck	Dominion (100%)
b2654.3	Install a 2nd 224 MVA 230/115 kV transformer at Hathaway	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2665	Rebuild the Cunningham – Dooms 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (9.35%) / Dominion (73.04%) / PEPCO (17.61%)</p>
b2686	Pratts Area Improvement	Dominion (100%)
b2686.1	Build a 230 kV line from Remington Substation to Gordonsville Substation utilizing existing ROW	Dominion (100%)
b2686.2	Install a 3rd 230/115 kV transformer at Gordonsville Substation	Dominion (100%)
b2686.3	Upgrade Line 2088 between Gordonsville Substation and Louisa CT Station	Dominion (100%)
b2686.4	Replace the Remington CT 230 kV breaker “2114T2155” with a 63 kA breaker	Dominion (100%)
b2686.11	Upgrading sections of the Gordonsville – Somerset 115 kV circuit	Dominion (100%)
b2686.12	Upgrading sections of the Somerset – Doubleday 115 kV circuit	Dominion (100%)
b2686.13	Upgrading sections of the Orange – Somerset 115 kV circuit	Dominion (100%)
b2686.14	Upgrading sections of the Mitchell – Mt. Run 115 kV circuit	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2717.1	De-energize Davis – Rosslyn #179 and #180 69 kV lines	Dominion (100%)
b2717.2	Remove splicing and stop joints in manholes	Dominion (100%)
b2717.3	Evacuate and dispose of insulating fluid from various reservoirs and cables	Dominion (100%)
b2717.4	Remove all cable along the approx. 2.5 mile route, swab and cap-off conduits for future use, leave existing communication fiber in place	Dominion (100%)
b2719.1	Expand Perth substation and add a 115 kV four breaker ring	Dominion (100%)
b2719.2	Extend the Hickory Grove DP tap 0.28 miles to Perth and terminate it at Perth	Dominion (100%)
b2719.3	Split Line #31 at Perth and terminate it into the new ring bus with 2 breakers separating each of the line terminals to prevent a breaker failure from taking out both 115 kV lines	Dominion (100%)
b2720	Replace the Loudoun 500 kV ‘H1T569’ breakers with 50 kA breaker	Dominion (100%)
b2729	Optimal Capacitors Configuration: New 175 MVAR capacitor at Brambleton, new 175 MVAR capacitor at Ashburn, new 300 MVAR capacitor at Shelhorn, new 150 MVAR capacitor at Liberty	AEC (1.96%) / BGE (14.37%) / Dominion (35.11%) / DPL (3.76%) / ECP** (0.29%) / HTP*** (0.34%) / JCPL (3.31%) / ME (2.51%) / NEPTUNE* (0.63%) / PECO (6.26%) / PEPCO (20.23%) / PPL (3.94%) / PSEG (7.29%)

\* Neptune Regional Transmission System, LLC

\*\* East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2744	Rebuild the Carson – Rogers Rd 500 kV circuit	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (4.27%) / Dominion (90.13%) / PEPCO (5.60%)</p>
b2745	Rebuild 21.32 miles of existing line between Chesterfield – Lakeside 230 kV	Dominion (100%)
b2746.1	Rebuild Line #137 Ridge Rd – Kerr Dam 115 kV, 8.0 miles, for 346 MVA summer emergency rating	Dominion (100%)
b2746.2	Rebuild Line #1009 Ridge Rd – Chase City 115 kV, 9.5 miles, for 346 MVA summer emergency rating	Dominion (100%)
b2746.3	Install a second 4.8 MVAR capacitor bank on the 13.8 kV bus of each transformer at Ridge Rd	Dominion (100%)
b2747	Install a Motor Operated Switch and SCADA control between Dominion’s Gordonsville 115 kV bus and FirstEnergy’s 115 kV line	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2757	Install a +/-125 MVar Statcom at Colington 230 kV	Dominion (100%)
b2758	Rebuild Line #549 Doods – Valley 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> Dominion (100%)
b2759	Rebuild Line #550 Mt. Storm – Valley 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> APS (47.87%) / DL (1.02%) / Dominion (9.20%) / EKPC (13.57%) / PEPCO (28.34%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2800	The 7 mile section from Dozier to Thompsons Corner of line #120 will be rebuilt to current standards using 768.2 ACSS conductor with a summer emergency rating of 346 MVA at 115 kV. Line is proposed to be rebuilt on single circuit steel monopole structure	Dominion (100%)
b2801	Lines #76 and #79 will be rebuilt to current standard using 768.2 ACSS conductor with a summer emergency rating of 346 MVA at 115 kV. Proposed structure for rebuild is double circuit steel monopole structure	Dominion (100%)
b2802	Rebuild Line #171 from Chase City – Boydton Plank Road tap by removing end-of-life facilities and installing 9.4 miles of new conductor. The conductor used will be at current standards with a summer emergency rating of 393 MVA at 115 kV	Dominion (100%)
b2815	Build a new Pinewood 115 kV switching station at the tap serving North Doswell DP with a 115 kV four breaker ring bus	Dominion (100%)
b2842	Update the nameplate for Mount Storm 500 kV "57272" to be 50 kA breaker	Dominion (100%)
b2843	Replace the Mount Storm 500 kV "G2TY" with 50 kA breaker	Dominion (100%)
b2844	Replace the Mount Storm 500 kV "G2TZ" with 50 kA breaker	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2845	Update the nameplate for Mount Storm 500 kV "G3TSX1" to be 50 kA breaker	Dominion (100%)
b2846	Update the nameplate for Mount Storm 500 kV "SX172" to be 50 kA breaker	Dominion (100%)
b2847	Update the nameplate for Mount Storm 500 kV "Y72" to be 50 kA breaker	Dominion (100%)
b2848	Replace the Mount Storm 500 kV "Z72" with 50 kA breaker	Dominion (100%)
b2871	Rebuild 230 kV line #247 from Swamp to Suffolk (31 miles) to current standards with a summer emergency rating of 1047 MVA at 230 kV	Dominion (100%)
b2876	Rebuild line #101 from Mackeys – Creswell 115 kV, 14 miles, with double circuit structures. Install one circuit with provisions for a second circuit. The conductor used will be at current standards with a summer emergency rating of 262 MVA at 115 kV	Dominion (100%)
b2877	Rebuild line #112 from Fudge Hollow – Lowmoor 138 kV (5.16 miles) to current standards with a summer emergency rating of 314 MVA at 138 kV	Dominion (100%)
b2899	Rebuild 230 kV line #231 to current standard with a summer emergency rating of 1046 MVA. Proposed conductor is 2-636 ACSR	Dominion (100%)
b2900	Build a new 230/115 kV switching station connecting to 230 kV network line #2014 (Earleys – Everetts). Provide a 115 kV source from the new station to serve Windsor DP	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2922	Rebuild 8 of 11 miles of 230 kV lines #211 and #228 to current standard with a summer emergency rating of 1046 MVA for rebuilt section. Proposed conductor is 2-636 ACSR	Dominion (100%)
b2928	Rebuild four structures of 500 kV line #567 from Chickahominy to Surry using galvanized steel and replace the river crossing conductor with 3-1534 ACSR. This will increase the line #567 line rating from 1954 MVA to 2600 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2929	Rebuild 230 kV line #2144 from Winfall to Swamp (4.3 miles) to current standards with a standard conductor (bundled 636 ACSR) having a summer emergency rating of 1047 MVA at 230 kV	Dominion (100%)
b2960	Replace fixed series capacitors on 500 kV Line #547 at Lexington and on 500 kV Line #548 at Valley	See sub-IDs for cost allocations

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2960.1	Replace fixed series capacitors on 500 kV Line #547 at Lexington	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (40.11%) / DEOK (0.71%) / Dominion (9.30%) / EKPC (0.43%) / PEPCO (49.45%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2960.2	Replace fixed series capacitors on 500 kV Line #548 at Valley	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (3.77%) / DEOK (8.84%) / Dominion (78.84%) / EKPC (3.90%) / PEPCO (4.65%)</p>
b2961	Rebuild approximately 3 miles of Line #205 & Line #2003 from Chesterfield to Locks & Poe respectively	Dominion (100%)
b2962	Split Line #227 (Brambleton – Beaumeade 230 kV) and terminate into existing Belmont substation	Dominion (100%)
b2962.1	Replace the Beaumeade 230 kV breaker “274T2081” with 63 kA breaker	Dominion (100%)
b2962.2	Replace the NIVO 230 kV breaker “2116T2130” with 63 kA breaker	Dominion (100%)
b2963	Reconductor the Woodbridge to Occoquan 230 kV line segment of Line #2001 with 1047 MVA conductor and replace line terminal equipment at Possum Point, Woodbridge, and Occoquan	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2978	Install 2-125 MVAR STATCOMs at Rawlings and 1-125 MVAR STATCOM at Clover 500 kV substations	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2980	Rebuild 115 kV Line #43 between Staunton and Harrisonburg (22.8 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV	Dominion (100%)
b2981	Rebuild 115 kV Line #29 segment between Fredericksburg and Aquia Harbor to current 230 kV standards (operating at 115 kV) utilizing steel H-frame structures with 2-636 ACSR to provide a normal continuous summer rating of 524 MVA at 115 kV (1047 MVA at 230 kV)	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2989	Install a second 230/115 kV Transformer (224 MVA) approximately 1 mile north of Bremono and tie 230 kV Line #2028 (Bremono – Charlottesville) and 115 kV Line #91 (Bremono - Sherwood) together. A three breaker 230 kV ring bus will split Line #2028 into two lines and Line #91 will also be split into two lines with a new three breaker 115 kV ring bus. Install a temporary 230/115 kV transformer at Bremono substation for the interim until the new substation is complete		Dominion (100%)
b2990	Chesterfield to Basin 230 kV line – Replace 0.14 miles of 1109 ACAR with a conductor which will increase the line rating to approximately 706 MVA		Dominion (100%)
b2991	Chaparral to Locks 230 kV line – Replace breaker lead		Dominion (100%)
b2994	Acquire land and build a new switching station (Skippers) at the tap serving Brink DP with a 115 kV four breaker ring to split Line #130 and terminate the end points		Dominion (100%)
b3018	Rebuild Line #49 between New Road and Middleburg substations with single circuit steel structures to current 115 kV standards with a minimum summer emergency rating of 261 MVA		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3019	Rebuild 500 kV Line #552 Bristers to Chancellor – 21.6 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%)                      / APS (5.76%) / ATSI (8.04%)                      / BGE (4.11%) / ComEd                      (13.39%) / Dayton (2.12%) /                      DEOK (3.25%) / DL (1.71%) /                      DPL (2.60%) / Dominion                      (13.32%) / EKPC (1.89%) /                      JCPL (3.86%) / ME (1.90%) /                      NEPTUNE* (0.42%) / OVEC                      (0.08%) / PECO (5.40%) /                      PENELEC (1.78%) / PEPCO                      (3.67%) / PPL (4.72%) / PSEG                      (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (6.89%) / Dominion                      (85.01%) / PEPCO (8.10%)</p>
b3019.1	Update the nameplate for Morrisville 500 kV breaker “H1T594” to be 50 kA	Dominion (100%)
b3019.2	Update the nameplate for Morrisville 500 kV breaker “H1T545” to be 50 kA	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3020	Rebuild 500 kV Line #574 Ladysmith to Elmont – 26.2 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (16.36%) / DEOK (11.61%) / Dominion (51.27%) / EKPC (5.30%) / PEPCO (15.46%)</p>
b3021	Rebuild 500 kV Line #581 Ladysmith to Chancellor – 15.2 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (92.28%) / PEPCO (7.72%)</p>
b3026	Reconductor Line #274 (Pleasant View – Ashburn – Beaumeade 230 kV) with a minimum rating of 1200 MVA. Also upgrade terminal equipment	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3027.1	Add a 2nd 500/230 kV 840 MVA transformer at Dominion's Ladysmith substation	Dominion (100%)
b3027.2	Reconductor 230 kV Line #2089 between Ladysmith and Ladysmith CT substations to increase the line rating from 1047 MVA to 1225 MVA	Dominion (100%)
b3027.3	Replace the Ladysmith 500 kV breaker "H1T581" with 50 kA breaker	Dominion (100%)
b3027.4	Update the nameplate for Ladysmith 500 kV breaker "H1T575" to be 50 kA breaker	Dominion (100%)
b3027.5	Update the nameplate for Ladysmith 500 kV breaker "568T574" (will be renumbered as "H2T568") to be 50 kA breaker	Dominion (100%)
b3055	Install spare 230/69 kV transformer at Davis substation	Dominion (100%)
b3056	Partial rebuild 230 kV Line #2113 Waller to Lightfoot	Dominion (100%)
b3057	Rebuild 230 kV Lines #2154 and #19 Waller to Skiffes Creek	Dominion (100%)
b3058	Partial rebuild of 230 kV Lines #265, #200 and #2051	Dominion (100%)
b3059	Rebuild 230 kV Line #2173 Loudoun to Elklick	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3060	Rebuild 4.6 mile Elklick – Bull Run 230 kV Line #295 and the portion (3.85 miles) of the Clifton – Walney 230 kV Line #265 which shares structures with Line #295	Dominion (100%)
b3088	Rebuild 4.75 mile section of Line #26 between Lexington and Rockbridge with a minimum summer emergency rating of 261 MVA	Dominion (100%)
b3089	Rebuild 230 kV Line #224 between Lanexa and Northern Neck utilizing double circuit structures to current 230 kV standards. Only one circuit is to be installed on the structures with this project with a minimum summer emergency rating of 1047 MVA	Dominion (100%)
b3090	Convert the overhead portion (approx. 1500 feet) of 230 kV Lines #248 & #2023 to underground and convert Glebe substation to gas insulated substation	Dominion (100%)
b3096	Rebuild 230 kV line No.2063 (Clifton – Ox) and part of 230 kV line No.2164 (Clifton – Keene Mill) with double circuit steel structures using double circuit conductor at current 230 kV northern Virginia standards with a minimum rating of 1200 MVA	Dominion (100%)
b3097	Rebuild 4 miles of 115 kV Line #86 between Chesterfield and Centralia to current standards with a minimum summer emergency rating of 393 MVA	Dominion (100%)
b3098	Rebuild 9.8 miles of 115 kV Line #141 between Balcony Falls and Skimmer and 3.8 miles of 115 kV Line #28 between Balcony Falls and Cushaw to current standards with a minimum rating of 261 MVA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3098.1	Rebuild Balcony Falls 115 kV substation	Dominion (100%)
b3110.1	Rebuild Line #2008 between Loudoun to Dulles Junction using single circuit conductor at current 230 kV northern Virginia standards with minimum summer ratings of 1200 MVA. Cut and loop Line #265 (Clifton – Sully) into Bull Run substation. Add three (3) 230 kV breakers at Bull Run to accommodate the new line and upgrade the substation	Dominion (100%)
b3110.2	Replace the Bull Run 230 kV breakers “200T244” and “200T295” with 50 kA breakers	Dominion (100%)
b3110.3	Replace the Clifton 230 kV breakers “201182” and “XT2011” with 63 kA breakers	Dominion (100%)
b3113	Rebuild approximately 1 mile of 115 kV Lines #72 and #53 to current standards with a minimum summer emergency rating of 393 MVA. The resulting summer emergency rating of Line #72 segment from Brown Boveri to Bellwood is 180 MVA. There is no change to Line #53 ratings	Dominion (100%)
b3114	Rebuild the 18.6 mile section of 115 kV Line #81 which includes 1.7 miles of double circuit Line #81 and 230 kV Line #2056. This segment of Line #81 will be rebuilt to current standards with a minimum rating of 261 MVA. Line #2056 rating will not change	Dominion (100%)
b3121	Rebuild Clubhouse – Lakeview 230 kV Line #254 with single-circuit wood pole equivalent structures at the current 230 kV standard with a minimum rating of 1047 MVA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3122	Rebuild Hathaway – Rocky Mount (Duke Energy Progress) 230 kV Line #2181 and Line #2058 with double circuit steel structures using double circuit conductor at current 230 kV standards with a minimum rating of 1047 MVA		Dominion (100%)
b3161.1	Split Chesterfield-Plaza 115 kV Line No. 72 by rebuilding the Brown Boveri tap line as double circuit loop in-and-out of the Brown Boveri Breaker station		Dominion (100%)
b3161.2	Install a 115 kV breaker at the Brown Boveri Breaker station. Site expansion is required to accommodate the new layout		Dominion (100%)
b3162	Acquire land and build a new 230 kV switching station (Stevensburg) with a 224 MVA, 230/115 kV transformer. Gordonsville-Remington 230 kV Line No. 2199 will be cut and connected to the new station. Remington-Mt. Run 115 kV Line No.70 and Mt. Run-Oak Green 115 kV Line No. 2 will also be cut and connected to the new station		Dominion (100%)
b3211	Rebuild the 1.3 mile section of 500 kV Line No. 569 (Loudoun – Morrisville) with single-circuit 500 kV structures at the current 500 kV standard. This will increase the rating of the line to 3424 MVA		Dominion (100%)
b3213	Install 2nd Chickahominy 500/230 kV transformer		Dominion (100%)
b3213.1	Replace the eight (8) Chickahominy 230 kV breakers with 63 kA breakers: “SC122”, “205022”, “209122”, 210222-2”, “28722”, “H222”, “21922” and “287T2129”		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3223.1	Install a second 230 kV circuit with a minimum summer emergency rating of 1047 MVA between Lanexa and Northern Next substations. The second circuit will utilize the vacant arms on the double-circuit structures that are being installed on Line #224 (Lanexa – Northern Next) as part of the End-of-Life rebuild project (b3089)	Dominion (100%)
b3223.2	Expand the Northern Neck terminal from a 230 kV, 4-breaker ring bus to a 6-breaker ring bus	Dominion (100%)
b3223.3	Expand the Lanexa terminal from a 6-breaker ring bus to a breaker-and-a-half arrangement	Dominion (100%)
b3246.1	Convert 115 kV Line #172 Liberty – Lomar and 115 kV Line #197 Cannon Branch – Lomar to 230 kV to provide a new 230 kV source between Cannon Branch and Liberty. The majority of 115 kV Line #172 Liberty – Lomar and Line #197 Cannon Branch – Lomar is adequate for 230 kV operation. Rebuild 0.36 mile segment between the Lomar and Cannon Branch junction. Lines will have a summer rating of 1047MVA/1047MVA (SN/SE)	Dominion (100%)
b3246.2	Perform substation work for the 115 kV to 230 kV line conversion at Liberty, Wellington, Godwin, Pioneer, Sandlot and Cannon Branch	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3246.3	Extend 230 kV Line #2011 Cannon Branch – Clifton to Winters Branch by removing the existing Line #2011 termination at Cannon Branch and extending the line to Brickyard creating 230 kV Line #2011 Brickyard - Clifton. Extend a new 230 kV line between Brickyard and Winters Branch with a summer rating of 1572MVA/1572MVA (SN/SE)	Dominion (100%)
b3246.4	Perform substation work at Cannon Branch, Brickyard and Winters Branch for the 230 kV Line #2011 Cannon Branch – Clifton extension	Dominion (100%)
b3246.5	Replace the Gainesville 230 kV 40 kA breaker “216192” with a 50 kA breaker	Dominion (100%)
b3247	Replace 13 towers with galvanized steel towers on Doubs – Goose Creek 500 kV. Reconductor 3 mile section with three (3) 1351.5 ACSR 45/7. Upgrade line terminal equipment at Goose Creek substation to support the 500 kV line rebuild	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3262	Install a second 115 kV 33.67 MVAR cap bank at Harrisonburg substation along with a 115 kV breaker	Dominion (100%)
b3263	Cut existing 115 kV Line #5 between Bremono and Cunningham substations and loop in and out of Fork Union substation	Dominion (100%)
b3264	Install 40 kA breaker at Stuarts Draft 115 kV station and sectionalize the Doom to Dupont-Waynesboro 115 kV Line #117 into two 115 kV lines	Dominion (100%)
b3268	Build a switching station at the junction of 115 kV line #39 and 115 kV line #91 with a 115 kV capacitor bank. The switching station will be built with 230 kV structures but will operate at 115 kV	Dominion (100%)
b3300	Reconductor 230 kV Line #2172 from Brambleton to Evergreen Mills along with upgrading the line leads at Brambleton to achieve a summer emergency rating of 1574 MVA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3301	Reconductor 230 kV Line #2210 from Brambleton to Evergreen Mills along with upgrading the line leads at Brambleton to achieve a summer emergency rating of 1574 MVA		Dominion (100%)
b3302	Reconductor 230 kV Line #2213 from Cabin Run to Yardley Ridge along with upgrading the line leads at Yardley to achieve a summer emergency rating of 1574 MVA		Dominion (100%)
b3303.1	Extend a new single circuit 230 kV Line #9250 from Farmwell substation to Nimbus substation		Dominion (100%)
b3303.2	Remove Beaumeade 230 kV Line #2152 line switch		Dominion (100%)
b3304	Midlothian area improvements for 300 MW load drop relief		Dominion (100%)
b3304.1	Cut 230 kV Line #2066 at Trabue junction		Dominion (100%)
b3304.2	Reconductor idle 230 kV Line #242 (radial from Midlothian to Trabue junction) to allow a minimum summer rating of 1047 MVA and connect to the section of 230 kV Line #2066 between Trabue junction and Winterpock, re-number 230 kV Line #242 structures to Line #2066		Dominion (100%)
b3304.3	Use the section of idle 115 kV Line #153, between Midlothian and Trabue junction to connect to the section of (former) 230 kV Line #2066 between Trabue junction and Trabue to create new Midlothian – Trabue lines with new line numbers #2218 and #2219		Dominion (100%)
b3304.4	Create new line terminations at Midlothian for the new Midlothian – Trabue 230 kV lines		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3684	Rebuild 12.4 miles of 115 kV line from Earleys to Kelford with a summer emergency rating of 262 MVA. Replace structures as needed to support the new conductor. Upgrade breaker switch 13668 at Earleys from 1200 A to 2000 A		Dominion (100%)
b3685	Install a 33 MVAR cap bank at Cloud 115 kV bus along with a 115 kV breaker. Add 115 kV circuit breaker for 115 kV Line #38		Dominion (100%)
b3686	Purchase land close to the bifurcation point of 115 kV Line #4 (where the line is split into two sections) and build a new 115 kV switching station called Duncan Store. The new switching station will require space for an ultimate transmission interconnection consisting of a 115 kV six-breaker ring bus (with three breakers installed initially)		Dominion (100%)
b3687	Rebuild approximately 15.1 miles line segment between Bristers and Minnieville D.P. with 2-768 ACSS and 4000 A supporting equipment from Bristers to Ox to allow for future 230 kV capability of 115 kV Line #183. The continuous summer normal rating will be 523 MVA for line Ox – Minnieville. The continuous summer normal rating will be 786 MVA for Minnieville – Bristers line		Dominion (100%)
b3689.1	Reconductor approximately 24.42 miles of 230 kV Line #2114 Remington CT– Elk Run – Gainesville to achieve a summer rating of 1574 MVA by fully reconductoring the line and upgrading the wave trap and substation conductor at Remington CT and Gainesville 230 kV stations		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3689.2	Replace 230 kV breakers SC102, H302, H402 and 218302 at Brambleton substation with 4000A 80 kA breakers and associated equipment including breaker leads as necessary to address breaker duty issues identified in short circuit analysis	Dominion (100%)
b3690	Reconductor approximately 1.07 miles of 230 kV Line #2008 segment from Cub Run to Walney to achieve a summer rating of 1574 MVA. Replace line switch 200826 with a 4000A switch	Dominion (100%)
b3691	Reconductor approximately 1.4 miles of 230 kV Line #2141 from Lakeview to Carolina to achieve a summer rating of 1047 MVA	Dominion (100%)
b3692	Rebuild approximately 27.7 miles of 500 kV transmission line from Elmont to Chickahominy with current 500 kV standards construction practices to achieve a summer rating of 4330 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3693	Expand substation and install approximately 294 MVAR cap bank at 500 kV Lexington substation along with a 500 kV breaker. Adjust the tap positions associated with the two 230/69 kV transformers at Harrisonburg to neutral position and lock them	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3694.1	Convert 115 kV Line #29 Aquia Harbour to Possum Point to 230 kV (Extended Line #2104) and swap Line #2104 and converted Line #29 at Aquia Harbour backbone termination. Upgrade terminal equipment at Possum Point to terminate converted Line #29 (now extended line #2104). (Line #29 from Fredericksburg to Aquia Harbour is being rebuilt under baseline b2981 to 230 kV standards)	<p>Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.2	Upgrade Aquia Harbour terminal equipment to not limit 230 kV Line #9281 conductor rating	Dominion (100%)
b3694.3	Upgrade Fredericksburg terminal equipment by rearranging 230 kV bus configuration to terminate converted Line #29 (now becoming 9281). The project will add a new breaker at the 230 kV bay and reconfigure line termination of 230 kV Line #2157, #2090 and #2083	Dominion (100%)
b3694.4	Reconductor/rebuild approximately 7.6 miles of 230 kV Line #2104 Cranes Corner – Stafford to achieve a summer rating of 1047 MVA. Reconductor/rebuild approximately 0.34 miles of 230 kV Line #2104 Stafford – Aquia Harbour to achieve a summer rating of 1047 MVA. Upgrade terminal equipment at Cranes Corner to not limit the new conductor rating	Dominion (100%)
b3694.5	Upgrade wave trap and line leads at 230 kV Line #2090 Ladysmith CT terminal to achieve 4000A rating	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.6	Upgrade Fuller Road substation to feed Quantico substation via 115 kV radial line. Install four-breaker ring bus and break 230 kV Line #252 into two new lines: 1) Line #252 between Aquia Harbour and Fuller Road and 2) Line #9282 between Fuller Road and Possum Point. Install a 230/115 kV transformer which will serve Quantico substation	Dominion (100%)
b3694.7	Energize in-service spare 500/230 kV Carson Transformer #1	Dominion (100%)
b3694.8	Partial wreck and rebuild 10.34 miles of 230 kV Line #249 Carson – Locks to achieve a minimum summer emergency rating of 1047 MVA. Upgrade terminal equipment at Carson and Locks stations to not limit the new conductor rating	Dominion (100%)
b3694.9	Wreck and rebuild 5.4 miles of 115 kV Line #100 Locks – Harrowgate to achieve a minimum summer emergency rating of 393 MVA. Upgrade terminal equipment at Locks and Harrowgate stations to not limit the new conductor rating and perform Line #100 Chesterfield terminal relay work	Dominion (100%)
b3694.10	Reconductor approximately 2.9 miles of 230 kV Line #211 Chesterfield – Hopewell to achieve a minimum summer emergency rating of 1046 MVA	Dominion (100%)
b3694.11	Reconductor approximately 2.9 miles of 230 kV Line #228 Chesterfield – Hopewell to achieve a minimum summer emergency rating of 1046 MVA	Dominion (100%)
b3694.12	Upgrade equipment at Chesterfield 230 kV substation to not limit ratings on Line #211 and #228	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.13	Upgrade equipment at Hopewell 230 kV substation to not limit ratings on Line #211 and #228	Dominion (100%)
b3702	Install one 13.5 Ohm series reactor to control the power flow on the 230 kV Line #2054 from Charlottesville substation to Proffit Rd. 230 kV line	AEC (1.59%) / APS (8.85%) / ATSI (5.54%) / BGE (10.79%) / ComEd (1.86%) / Dayton (0.21%) / DEOK (1.16%) / Dominion (18.99%) / DPL (3.68%) / DL (1.16%) / ECP** (0.27%) / HTP*** (0.22%) / JCPL (4.53%) / ME (1.73%) / NEPTUNE* (0.68%) / PECO (6.95%) / PENELEC (4.75%) / PEPCO (9.69%) / PPL (9.78%) / PSEG (7.28%) / RE (0.29%)
b3707.1	Reconductor approximately 0.57 mile of 115 kV Line #1021 from Harmony Village to Greys Point with 768 ACSS to achieve a summer emergency rating of 237 MVA. The current conductor is 477 ACSR	Dominion (100%)
b3707.2	Reconductor approximately 0.97 mile of 115 kV Line #65 from Rappahannock to White Stone with 768 ACSS to achieve a summer emergency rating of 237 MVA. The current conductor is 477 ACSR	Dominion (100%)
b3759	Reconductor approximately 10.5 miles of 115 kV Line #23 segment from Oak Ridge to AC2-079 Tap to minimum emergency ratings of 393 MVA Summer / 412 MVA Winter	Dominion (100%)

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\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3779	Cut existing 230 kV line #2183 and extend from Poland Road substation to Evergreen Mills substation. Approximately 0.59 miles of new line will be built from the cut-in to the Evergreen Mills substation. Cut and extend the existing 230 kV line #2183 creating a new line #2210 from Brambleton substation to be terminated at Evergreen Mills substation. Approximately 0.59 miles of new line will be built from the cut-in to the Evergreen Mills substation	Dominion (100%)
b3800.118	<u>Line work for terminating Doubs to Bismark line into Woodside 500 kV substation (DOM Portion)</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPCO (7.42%)</u></p>

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**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.120</u>	<u>Aspen substation work to terminate the new NextEra 500 kV line. Include Aspen 500 kV substation portion build</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</u></p>
<u>b3800.200</u>	<u>Build a new 500 kV line from Aspen - Golden on 500/230 kV double circuit structures with substation upgrades at Aspen and Golden. New conductor to have a minimum summer normal rating of 4357 MVA</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (100%)</u></p>
<u>b3800.201</u>	<u>Install two 500/230 kV transformer at Golden substation</u>	<u>Dominion (100%)</u>
<u>b3800.202</u>	<u>Install one 500/230 kV transformer at Aspen substation</u>	<u>Dominion (86.28%) / PEPCO (13.72%)</u>

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**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.203</u>	<u>Install a second 500/230 kV 1440 MVA transformer at Mars substation</u>	<u>Dominion (100%)</u>
<u>b3800.204</u>	<u>Reconductor 0.5 mile section of 230 kV line No. 2150 Golden - Paragon Park Circuit 1 to achieve a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.205</u>	<u>Reconductor 0.5 mile section of 230 kV line No. 2081 Golden - Paragon Park Circuit 2 to achieve a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.206</u>	<u>Upgrade Paragon Park substation line conductors to 4000A continuous current rating for 230 kV lines No. 2081 and No. 2150</u>	<u>Dominion (100%)</u>
<u>b3800.207</u>	<u>Reconductor 230 kV line No. 2207 Paragon Park -- BECO to achieve a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.208</u>	<u>Upgrade Paragon Park substation conductor and line leads to 4000A continuous current rating for 230 kV line No. 2207</u>	<u>Dominion (100%)</u>
<u>b3800.209</u>	<u>Upgrade BECO substation equipment to 4000A continuous current rating for 230 kV line No.2207</u>	<u>Dominion (100%)</u>
<u>b3800.210</u>	<u>Build a new 230 kV line from Mars - Lockridge on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Mars and Lockridge substations</u>	<u>Dominion (100%)</u>
<u>b3800.211</u>	<u>Build a new 230 kV line from Lockridge - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Lockridge substations</u>	<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<p><u>b3800.212</u></p>	<p><u>Build a new 500 kV line from Mars - Golden on 500/230 kV double circuit structures with substation upgrades at Golden and Mars. New conductor to have a minimum summer normal rating of 4357 MVA</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (99.96%) / Dominion (0.04%)</u></p>
<p><u>b3800.213</u></p>	<p><u>Cut 500 kV line No. 558 Brambleton - Goose Creek into Aspen substation. Upgrade 500 kV terminal equipment at Aspen and Goose Creek to 5000A continuous rating current. At Goose Creek, replace circuit breakers 59582 and 55882, and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (99.39%) / Dominion (0.61%)</u></p>

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**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.214</u>	<u>Build a new 500 kV line from Aspen - Goose Creek to achieve a summer rating of 4357 MVA. Install new 500 kV terminal equipment at Aspen</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (99.39%) / Dominion (0.61%)</u></p>
<u>b3800.215</u>	<u>Cut 230 kV line No. 2150 Sterling Park - Paragon Park Circuit 1 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2150 to 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.216</u>	<u>Cut 230 kV line No. 2081 Sterling Park - Paragon Park Circuit 2 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2081 to 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.217</u>	<u>Build a new 230 kV line from Aspen - Sycolin Creek on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations</u>	<u>Dominion (86.28%) / PEPCO (13.72%)</u>

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**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.218</u>	<u>Build a new 230 kV line from Sycolin Creek - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations</u>	<u>Dominion (100%)</u>
<u>b3800.219</u>	<u>Replace seven overduited 230 kV breakers at Beaumeade substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.220</u>	<u>Replace four overduited 230 kV breakers at BECO substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.221</u>	<u>Replace four overduited 230 kV breakers at Belmont substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.222</u>	<u>Replace one overduited 230 kV breaker at Discovery substation with 80 kA breaker</u>	<u>Dominion (100%)</u>
<u>b3800.223</u>	<u>Replace one overduited 230 kV breaker at Pleasant View substation with 80 kA breaker</u>	<u>Dominion (100%)</u>
<u>b3800.224</u>	<u>Replace two overduited 230 kV breakers at Shellhorn substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.225</u>	<u>Change 500 kV line No. 558 destination at Brambleton to Aspen substation and upgrade line protection relays</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (5.20%) / DL (0.46%) / Dominion (91.40%) / ME (0.59%) / PEPCO (2.35%)</u></p>

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**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.226</u> <u>Change 230 kV lines No. 2081 and No. 2150 at Paragon Park substation destination to Golden substation and upgrade line protection relays</u>		<u>Dominion (100%)</u>
<u>b3800.227</u> <u>Change 230 kV lines No. 2081 and No. 2150 at Sterling Park substation destination to Golden substation and upgrade line protection relays</u>		<u>Dominion (100%)</u>
<u>b3800.228</u> <u>Reconductor 1.47 miles of 230 kV lines No. 2081 and No. 2150 from Sterling Park to Golden substation. Upgrade terminal equipment at Sterling Park to 4000A continuous current</u>		<u>Dominion (100%)</u>
<u>b3800.229</u> <u>Reconductor 0.67 miles of 230 kV lines No. 2194 and No. 9231 from Davis Drive to Sterling Park substation. Terminal equipment at remote end substations will be installed or upgraded to 4000A continuous current rating to support new conductor ratings</u>		<u>Dominion (100%)</u>
<u>b3800.230</u> <u>Reset relays at Breezy Knoll for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton</u>		<u>Dominion (100%)</u>
<u>b3800.231</u> <u>Reset relays at Dry Mill for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton</u>		<u>Dominion (100%)</u>
<u>b3800.232</u> <u>Reset relays at Hamilton for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton</u>		<u>Dominion (100%)</u>
<u>b3800.233</u> <u>Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 2098 wreck and rebuild. Replace circuit breakers 274T2098 &amp; 2098T2180 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating</u>		<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.234</u>	<u>Wreck and rebuild approximately one mile of 230 kV line No. 2098 between Pleasant View and structure 2098/9, where line No. 2098 turns towards Hamilton substation</u>	<u>Dominion (100%)</u>
<u>b3800.235</u>	<u>Replace five overdutied 230 kV breakers at Loudoun substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.236</u>	<u>Replace two overdutied 230 kV breakers at Ox substation with 63 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.237</u>	<u>Replace two overdutied 230 kV breakers at Pleasant View substation with 63 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.238</u>	<u>Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 203 rebuild. Replace circuit breakers 203T274 &amp; L3T203 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating</u>	<u>APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)</u>
<u>b3800.239</u>	<u>Wreck and rebuild 230 kV line No. 203 between Pleasant View and structure 203/15 using double circuit 500/230 kV structures. The 500 kV line is from Aspen - Doubs</u>	<u>APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)</u>

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.240</u></p>	<p><u>Build a new 500 kV line from Aspen - Doubs using double circuit 500/230 kV structures. The 230 kV line is from Pleasant View - structure 203/15. Install terminal equipment at Aspen for a 5000A line to Doubs. This includes GIS breakers, GIS-to-AIS transition equipment, and metering CCVTs and CTs for the tie line</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)</u></p>
<p><u>b3800.241</u></p>	<p><u>Rebuild 500 kV line No. 514 from Goose Creek - Doubs using 500/230 kV double circuit structures. The new double circuit towers will accommodate 230 kV line No. 2098 between Pleasant View substation and structure 2098/9. Upgrade equipment at Goose Creek to 5000A continuous current rating in support of line No. 514 wreck and rebuild. Replace circuit breakers 514T595 &amp; 51482 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</u></p>
<p><u>b3800.242</u></p>	<p><u>Upgrading switches 20366M and 20369M and line leads to 4000A continuous current rating of 230 kV line No. 203 at Edwards Ferry substation</u></p>	<p><u>APS (11.45%) / BGE (14.14%) / Dominion (42.82%) / PEPCO (31.59%)</u></p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.300</u> <u>Rebuild 230 kV line No. 2135 Hollymeade Junction – Cash’s Corner using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project)</u>		<u>Dominion (100%)</u>
<u>b3800.301</u> <u>Rebuild 230 kV line No. 2135 Cash’s Corner - Gordonsville using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project)</u>		<u>Dominion (100%)</u>
<u>b3800.302</u> <u>Upgrade Cash’s Corner switches 213576 and 213579 and line leads to 4000A continuous current rating of 230 kV line No. 2135</u>		<u>Dominion (100%)</u>
<u>b3800.303</u> <u>Upgrade Gordonsville substation line leads to 4000A continuous current rating of 230 kV line No. 2135</u>		<u>Dominion (100%)</u>
<u>b3800.304</u> <u>Upgrade Hollymeade substation switch 213549 and line leads to 4000A continuous current rating of 230 kV line No. 2135</u>		<u>Dominion (100%)</u>
<u>b3800.305</u> <u>Install one 230 kV 300 MVAR STATCOM and associated equipment at Beaumeade 230 kV substation</u>		<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.306</u>	<u>Install one 500 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Morrisville substation. This addition will require a control house expansion to accommodate for two new panels</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (100%)</u></p>
<u>b3800.307</u>	<u>Install one 500 kV, 300 MVAR STATCOM and associated equipment at Mars substation</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (100%)</u></p>
<u>b3800.308</u>	<u>Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Mars substation</u>	<u>Dominion (100%)</u>
<u>b3800.309</u>	<u>Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Wishing Star substation</u>	<u>Dominion (100%)</u>

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**Virginia Electric and Power Company (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.310</u></p>	<p><u>Install one 500 kV, 293.8 MVAR Shunt Capacitor Bank &amp; associated equipment at Wishing Star substation</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (100%)</u></p>
<p><u>b3800.311</u></p>	<p><u>Rebuild 500 kV line No. 545 Bristers - Morrisville as a single circuit monopole line to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (91.07%) / PEPCO (8.93%)</u></p>

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.312</u></p>	<p><u>Rebuild 500 kV line No. 569 Loudoun - Morrisville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (11.72%) / Dominion (88.28%)</u></p>
<p><u>b3800.313</u></p>	<p><u>Rebuild approximately 10.29 miles 500 kV line segment of line No. 535 (Meadow Brook to Loudoun) to accommodate the new 500 kV line in the existing ROW</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)</u></p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.314</u></p>	<p><u>Rebuild approximately 4.83 miles of 500 kV line No. 546 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 546</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)</u></p>
<p><u>b3800.315</u></p>	<p><u>Rebuild approximately 4.59 miles of 500 kV line No. 590 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 590</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)</u></p>
<p><u>b3800.316</u></p>	<p><u>Rebuild approximately 6.17 miles of 230 kV line No. 2030 Gainesville - Mint Springs to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u></p>	<p><u>Dominion (100%)</u></p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.317</u>	<u>Rebuild approximately 1.58 miles of 230 kV line No. 2030 Mint Springs - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.318</u>	<u>Rebuild approximately 4.2 miles of 230 kV line No. 2045 Loudoun - North Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.319</u>	<u>Rebuild approximately 0.88 miles of 230 kV line No. 2045 North Star - Brambleton to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.320</u>	<u>Rebuild approximately 1.22 miles of 230 kV line No. 2227 Brambleton - Racefield to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.321</u>	<u>Rebuild approximately 3.69 miles of 230 kV line No. 2094 Racefield - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.322</u>	<u>Rebuild approximately 9.16 miles of 230 kV line No. 2101 Bristers - Nokesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.323</u>	<u>Rebuild approximately 2.89 miles of 230 kV line No. 2101 Nokesville - Vint Hill TP to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.324</u>	<u>Rebuild approximately 0.33 miles of 230 kV line No. 2101 Vint Hill TP - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.325</u>	<u>Rebuild approximately 3.32 miles of 230 kV line No. 2114 Rollins Ford - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.326</u>	<u>Rebuild approximately 10.09 miles of 230 kV line No. 2114 Vint Hill - Elk Run to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.327</u>	<u>Rebuild approximately 4.43 miles of 230 kV line No. 2140 Heathcote - Catharpin to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.328</u>	<u>Rebuild approximately 2.88 miles of 230 kV line No. 2140 Catharpin - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.329</u>	<u>Rebuild approximately 0.25 miles of 230 kV line No. 2151 Railroad DP - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.330</u>	<u>Rebuild approximately 4.14 miles of 230 kV line No. 2163 Vint Hill - Liberty to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.331</u>	<u>Rebuild approximately 0.48 miles of 230 kV line No. 2176 Heathcote - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.332</u>	<u>Rebuild approximately 1.11 miles of 230 kV line No. 2222 Rollins Ford - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.333</u>	<u>Rebuild approximately 1.65 miles of 115 kV line No. 183 Bristers - Ox to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA</u>	<u>Dominion (100%)</u>
<u>b3800.334</u>	<u>Replace four overdutied 230 kV breakers at Loudoun Substation with 80 kA breakers</u>	<u>Dominion (100%)</u>
<u>b3800.335</u>	<u>Replace one overdutied 500 kV breaker at Ox Substation with a 63 kA breaker</u>	<u>Dominion (100%)</u>
<u>b3800.336</u>	<u>Upgrade and install equipment at Bristers substation to support the new conductor 5000A rating for 500 kV line No. 545</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (91.07%) / PEPSCO (8.93%)</u></p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<u>b3800.337</u>	<u>Upgrade and install equipment at Brambleton substation to support the new conductor termination. All terminal equipment for 230 kV lines No. 2045 and No. 2094 to be rated for 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.338</u>	<u>Revise relay settings at Dawkins Branch 230 kV station</u>	<u>Dominion (100%)</u>
<u>b3800.339</u>	<u>Upgrade and install equipment at Gainesville 230 kV substation to support the new conductor termination. All terminal equipment for 230 kV line No. 2030 to be rated for 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.340</u>	<u>Revise relay settings at Heathcote 230 kV station</u>	<u>Dominion (100%)</u>
<u>b3800.341</u>	<u>Upgrade and install equipment at Loudoun substation for 230 kV line No. 2094 Loudoun - Racefield to be rated for 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.342</u>	<u>Upgrade and install equipment at Loudoun substation for 230 kV line No. 2045 Loudoun - North Star to be rated for 4000A continuous current rating</u>	<u>Dominion (100%)</u>
<u>b3800.343</u>	<u>Upgrade and install equipment at Loudoun substation for 230 kV line No. 2030 Loudoun - Mint Springs to be rated for 4000A continuous current rating</u>	<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
b3800.344	<u>Upgrade and install equipment at Loudoun substation to support the new conductor 5000A rating for 500 kV line No. 569 Loudoun - Morrisville</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (11.72%) / Dominion (88.28%)</u></p>
b3800.345	<u>Revise relay settings at 230 kV Mint Springs station</u>	<u>Dominion (100%)</u>
b3800.346	<u>Upgrade and install equipment at Morrisville substation to support the new 500 kV conductor termination. All terminal equipment to be rated for 5000A for 500 kV line No. 545 and No. 569. Upgrade 500 kV bus 2 to 5000A</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (11.72%) / Dominion (88.28%)</u></p>
b3800.347	<u>Revise relay settings at North Star 230 kV station</u>	<u>Dominion (100%)</u>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.348</u>	<u>Revise relay settings at Racefield 230 kV station</u>	<u>Dominion (100%)</u>
<u>b3800.349</u>	<u>Revise relay settings at Railroad 230 kV station</u>	<u>Dominion (100%)</u>
<u>b3800.350</u>	<u>Install terminal equipment at Vint Hill 500 kV substation to support a 5000A line to 500 kV Morrisville substation. Update relay settings for 230 kV lines No. 2101, No. 2163, and 500 kV line No. 535</u>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.79%) / Dominion (90.21%)</u></p>
<u>b3800.351</u>	<u>Update relay settings at Vint Hill for 230 kV line No. 2101 Vint Hill - Bristers</u>	<u>Dominion (100%)</u>
<u>b3800.352</u>	<u>Update relay settings at Vint Hill for 230 kV line No. 2163 Vint Hill - Liberty</u>	<u>Dominion (100%)</u>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.353</u></p>	<p><u>Update relay settings at Vint Hill for 500 kV line No. 535 Vint Hill - Loudoun</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)</u></p>
<p><u>b3800.354</u></p>	<p><u>Install terminal equipment at Wishing Star 500 kV substation to support a 5000A line to Vint Hill. Update relay settings for 500 kV lines No. 546 and No. 590</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (21.45%) / Dominion (78.55%)</u></p>
<p><u>b3800.355</u></p>	<p><u>Revise relay settings at Youngs Branch 230 kV station</u></p>	<p><u>Dominion (100%)</u></p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p><u>b3800.356</u></p>	<p><u>Build a new 500 kV line from Vint Hill to Wishing Star. The line will be supported on single circuit monopoles. New conductor to have a summer rating of 4357 MVA. Line length is approximately 16.59 miles</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (21.45%) / Dominion (78.55%)</u></p>
<p><u>b3800.357</u></p>	<p><u>Build a new 500 kV line from Morrisville to Vint Hill. New conductor to have a summer rating of 4357 MVA. Line length is approximately 19.71 miles</u></p>	<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.79%) / Dominion (90.21%)</u></p>
<p><u>b3800.358</u></p>	<p><u>Replace single unit Locks 230/115 kV 168 MVA transformer TX No.7 with new single unit transformer with a rating of 224 MVA. Lead lines at the 115 kV level will be upgraded to 2000A</u></p>	<p><u>Dominion (100%)</u></p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.359</u> <u>Wreck and rebuild 230 kV line No. 2090 Ladysmith CT - Summit D.P. segment as a double circuit 230 kV line to achieve a summer rating of 1573 MVA. Only one circuit will be wired at this stage. Upgrade circuit breaker leads, switches and line leads at Ladysmith CT to 4000A</u>		<u>Dominion (100%)</u>
<u>b3800.360</u> <u>Rebuild 230 kV line No. 2054 Charlottesville - Proffit DP using double-circuit capable 500/230 kV poles. (The 500 kV circuit will not be wired as part of this project)</u>		<u>Dominion (100%)</u>
<u>b3800.361</u> <u>Rebuild 230 kV line No. 233 Charlottesville - Hydraulic Road - Barracks Road - Crozet-Dooms</u>		<u>Dominion (100%)</u>
<u>b3800.362</u> <u>Rebuild 230 kV line No. 291 segment from Charlottesville - Barracks Road</u>		<u>Dominion (100%)</u>
<u>b3800.363</u> <u>Rebuild 230 kV line No. 291 segment from Barracks Road - Crozet</u>		<u>Dominion (100%)</u>
<u>b3800.364</u> <u>Rebuild 230 kV line No. 291 segment Crozet - Dooms</u>		<u>Dominion (100%)</u>
<u>b3800.365</u> <u>Hollymeade substation Relay Revision for 230 kV line No. 2054 Charlottesville - Hollymeade</u>		<u>Dominion (100%)</u>
<u>b3800.366</u> <u>Upgrade the terminal equipment at 230 kV Charlottesville station to 4000A for 230 kV line No. 2054 (Charlottesville - Hollymeade)</u>		<u>Dominion (100%)</u>
<u>b3800.367</u> <u>Proffit DP substation Relay revision for 230 kV line No. 2054 Charlottesville - Hollymeade</u>		<u>Dominion (100%)</u>
<u>b3800.368</u> <u>Barracks Road substation relay reset to accommodate the rebuilt line 230 kV lines No. 233 and No. 291</u>		<u>Dominion (100%)</u>
<u>b3800.369</u> <u>Crozet substation relay reset to accommodate the rebuilt 230 kV lines No. 233 and No. 291</u>		<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.370</u>	<u>Charlottesville 230 kV substation terminal equipment upgrade for 230 kV lines No. 233 and No. 291 rebuild</u>	<u>Dominion (100%)</u>
<u>b3800.371</u>	<u>Upgrade Hydraulic Road substation equipment for 230 kV line No. 233 and No. 291 rebuild</u>	<u>Dominion (100%)</u>
<u>b3800.372</u>	<u>Dooms substation terminal equipment upgrade for 230 kV line No. 233 and No. 291 rebuild</u>	<u>Dominion (100%)</u>
<u>b3800.373</u>	<u>Wreck and rebuild approximately 7.14 miles of 230 kV line No. 256 from St. Johns to structure 256/108 to achieve a summer rating of 1573 MVA. Line switch 25666 at St. Johns to be upgraded to 4000A</u>	<u>Dominion (100%)</u>
<u>b3800.374</u>	<u>Reconductor approximately 5.30 miles of 230 kV line No. 256 from Ladysmith CT to structure 256/107 to achieve a summer rating of 1573 MVA. Terminal equipment at remote end substations will be upgraded to 4000A</u>	<u>Dominion (100%)</u>
<u>b3800.401</u>	<u>Replace Ashburn 230 kV breaker SC432 with a breaker rated 63 kA</u>	<u>Dominion (100%)</u>
<u>b3800.402</u>	<u>Replace Beaumeade 230 kV breaker 227T2152 with a breaker rated 80 kA</u>	<u>Dominion (100%)</u>
<u>b3800.403</u>	<u>Replace BECO 230 kV breakers 215012 and H12T2150 with breakers rated 63 kA</u>	<u>Dominion (100%)</u>
<u>b3800.404</u>	<u>Replace Belmont 230 kV breaker 227T2180 with a breaker rated 80 kA</u>	<u>Dominion (100%)</u>
<u>b3800.405</u>	<u>Replace Brambleton 230 kV breakers 20102, 20602, 204502, 209402, 201T2045, 206T2094 with breakers rated 80 kA</u>	<u>Dominion (100%)</u>
<u>b3800.406</u>	<u>Replace Gainesville 230 kV breaker 216192 with a breaker rated 80 kA</u>	<u>Dominion (100%)</u>

**Virginia Electric and Power Company (cont.)**

<u>Required Transmission Enhancements</u>	<u>Annual Revenue Requirement</u>	<u>Responsible Customer(s)</u>
<u>b3800.407</u> <u>Replace Loudoun 230 kV breakers 204552, 217352 with breakers rated 80 kA</u>		<u>Dominion (100%)</u>
<u>b3800.408</u> <u>Replace Ox 230 kV breakers 22042, 24342, 24842, 220T2063, 243T2097, 248T2013, H342 with breakers rated 80 kA</u>		<u>Dominion (100%)</u>
<u>b3800.409</u> <u>Replace Paragon Park 230 kV breakers 208132, 215032, 2081T2206, 2150T2207 with breakers rated 80 kA</u>		<u>Dominion (100%)</u>
<u>b3800.410</u> <u>Replace Reston 230 kV breaker 264T2015 with a breaker rated 63 kA</u>		<u>Dominion (100%)</u>
<u>b3800.411</u> <u>Replace Stonewater 230 kV breakers 20662-1, 20662-2, 217862-1, 217862-2 with breakers rated 80 kA</u>		<u>Dominion (100%)</u>
<u>b3800.412</u> <u>Replace Waxpool 230 kV breakers 214922-5, 214922-6, 216622-5, 216622-6 with breakers rated 63 kA</u>		<u>Dominion (100%)</u>

**SCHEDULE 12 – APPENDIX A**

**(28) Transource, LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.1	Tap the Conemaugh – Hunterstown 500 kV line & create new Rice 500 kV & 230 kV stations. Install two 500/230 kV transformers operated together	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2743.5	Build new 230 kV double circuit line between Rice and Ringgold 230 kV, operated as a single circuit	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2752.1	Tap the Peachbottom – TMI 500 kV line & create new Furnace Run 500 kV & 230 kV stations. Install two 500/230 kV transformers, operated together	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2752.5	Build new 230 kV double circuit line between Furnace Run and Conastone 230 kV, operated as a single circuit	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)

**Transource, LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3737.47</u><sup>+</sup></p>	<p><u>Build a new North Delta 500 kV substation with four bay breaker and half configuration. The substation will include 12 500 kV breakers and one 500/230 kV transformers, will allow the termination of six 500 kV lines</u></p>		<p><b><u>Reliability Driver (26.73%):</u></b></p> <p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <p><b><u>DFAX Allocation:</u></b>  <u>PECO (100%)</u></p> <hr/> <p><b><u>Public Policy Driver (73.27%):</u></b>  <u>AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)</u></p>
<p><u>b3800.48</u></p>	<p><u>North Delta termination for the North Delta - High Ridge 500 kV line (Transource work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</u></p>

<sup>+</sup> b3737.47 is an Incremental Multi-Driver Project that includes both a reliability driver and a public policy driver. Accordingly, b3737.47 is included on both Tariff, Schedule 12–Appendix A, section 28 and Tariff, Schedule 12–Appendix C, section 1.

**Transource, LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.48</u></p>	<p><u>North Delta termination for the North Delta - High Ridge 500 line (Transource work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) /</u>  <u>APS (5.76%) / ATSI (8.04%) /</u>  <u>BGE (4.11%) / ComEd (13.39%) /</u>  <u>Dayton (2.12%) / DEOK (3.25%) /</u>  <u>DL (1.71%) / Dominion (13.32%)</u>  <u>/ DPL (2.60%) / EKPC (1.89%) /</u>  <u>JCPL (3.86%) / ME (1.90%) /</u>  <u>NEPTUNE* (0.42%) / OVEC</u>  <u>(0.08%) / PECO (5.40%) /</u>  <u>PENELEC (1.78%) / PEPCO</u>  <u>(3.67%) / PPL (4.72%) / PSEG</u>  <u>(6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>Dominion (60.85%) / DPL</u>  <u>(0.01%) / PECO (0.01%) / PEPCO</u>  <u>(29.24%) / PSEG (9.48%) / RE</u>  <u>(0.41%)</u></p>
<p><u>b3800.49</u></p>	<p><u>North Delta 500 kV termination for the Calpine generator</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) /</u>  <u>APS (5.76%) / ATSI (8.04%) /</u>  <u>BGE (4.11%) / ComEd (13.39%) /</u>  <u>Dayton (2.12%) / DEOK (3.25%) /</u>  <u>DL (1.71%) / Dominion (13.32%)</u>  <u>/ DPL (2.60%) / EKPC (1.89%) /</u>  <u>JCPL (3.86%) / ME (1.90%) /</u>  <u>NEPTUNE* (0.42%) / OVEC</u>  <u>(0.08%) / PECO (5.40%) /</u>  <u>PENELEC (1.78%) / PEPCO</u>  <u>(3.67%) / PPL (4.72%) / PSEG</u>  <u>(6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>PECO (100%)</u></p>

\*Neptune Regional Transmission System, LLC

**Transource, LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.50</u></p>	<p><u>North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (Transource work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / NEPTUNE* (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)</u></p>
<p><u>b3800.51</u></p>	<p><u>North Delta 500 kV termination for the new Peach Bottom - North Delta 500 kV line (Transource work)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</u></p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(32) NextEra Energy Transmission LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.1 Outside of the Green Acres substation, swap the NIPSCO Green Acre Tap towers from the St. John – Green Acres – Olive 345 kV line to the University Park N – Olive 345 kV line to create University Park N – Green Acres – Olive and St. John – Olive 345 kV lines		<b>Reliability Driver:</b> ComEd (54.45%) / Dayton (45.55%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPSCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)
b3775.2 Reconductor NextEra Energy’s (NEET’s) section of Crete (IN/IL border) – St. John 345 kV line (6.95 miles)		<b>Reliability Driver:</b> ComEd (62.41%) / Dayton (37.59%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPSCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**SCHEDULE 12 – APPENDIX A**

**(32) NextEra Energy Transmission LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.8	Upgrade the existing terminal equipment (substation conductor) at St. John on the existing Crete to St. John 345 kV line with bundled 2x1590 ACSR Lapwing	<p align="center"><b>Reliability Driver:</b> ComEd (62.41%) / Dayton (37.59%)</p> <p align="center"><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>
b3775.9	Upgrade the existing terminal equipment (substation conductor) at Green Acres on the existing St. John to Green Acres 345 kV line with bundled 2x1590 ACSR Lapwing	<p align="center"><b>Reliability Driver:</b> ComEd (54.45%) / Dayton (45.55%)</p> <p align="center"><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**NextEra Energy Transmission LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.102</u></p>	<p><u>New 500 kV line from existing 502 Junction substation to Woodside 500 kV substation (bypass Black Oak) (NEET Portion)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</u></p>
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\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.106</u></p>	<p><u>Woodside 500 kV substation, except terminations, transformer, Cap Banks and Static Synchronous Compensator (STATCOM)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (100%)</u></p>
<p><u>b3800.107</u></p>	<p><u>Line Termination work at Woodside 500 kV substation for 502 Junction to Woodside 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</u></p>

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.108</u></p>	<p><u>Line termination work at Woodside 500 kV substation for Woodside to Aspen 500 kV line</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</u></p>
<p><u>b3800.109</u></p>	<p><u>Termination work for two 500/138 kV transformers at Woodside 500 kV substation</u></p>		<p><u>APS (100%)</u></p>
<p><u>b3800.110</u></p>	<p><u>Two 500/138 kV transformers at Woodside 500 kV substation</u></p>		<p><u>APS (100%)</u></p>

**\*Neptune Regional Transmission System, LLC**

**NextEra Energy Transmission LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.113</u></p>	<p><u>Two 150 MVAR Cap banks and one +500/-300 MVAR STATCOM at Woodside 500 kV substation</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (100%)</u></p>
<p><u>b3800.115</u></p>	<p><u>Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation (NEET Portion)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)</u></p>

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

**Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)**

<p><u>b3800.117</u></p>	<p><u>Line work for terminating Doubs to Bismark line for Bismark side for Woodside 500 kV substation (NEET Portion)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPCO (7.42%)</u></p>
<p><u>b3800.119</u></p>	<p><u>New 500kV transmission line from Woodside substation to Aspen substation (in DOM zone) (NEET Portion)</u></p>		<p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <hr/> <p><b><u>DFAX Allocation:</u></b>  <u>APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</u></p>

\*Neptune Regional Transmission System, LLC

## **Schedule 12 - Appendix C**

### **State Agreement Public Policy Projects Constructed Pursuant to the State Agreement Approach**

This Schedule 12 - Appendix C applies only to the assignment of cost responsibility of State Agreement Public Policy Projects constructed in accordance with Operating Agreement, Schedule 6, section 1.5.9 among Responsible Customers.

**(1) Rate Schedule FERC No. 49, State Agreement Approach Agreement By and Among PJM Interconnection, L.L.C. and New Jersey Board of Public Utilities**

In accordance with the FERC order in Docket Nos. ER22-2690-000 and -001, 181 FERC ¶ 61,178 (2022), cost responsibility for the State Agreement Public Policy Projects shall be assigned annually on a load-ratio share basis among Network Customers in the State of New Jersey determined in accordance with Schedule 12, section (c)(4), and customers using Point-to-Point Transmission Service with a Point of Delivery within the State of New Jersey determined in accordance with Schedule 12, section (c)(5), as follows:

With respect to each Zone located in the State of New Jersey, using, consistent with Tariff, Part III, section 34.1, the applicable zonal loads at the time of such Zone’s annual peak load from the 12-month period ending October 31 preceding the calendar year for which the annual cost responsibility allocation is determined.

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.1	Reconfigure Larrabee 230 kV substation	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.2	Larrabee substation – 230 kV equipment for direct connection	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.3	Lakewood Generator substation – Update relay settings on the Larrabee 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.4	B54 Larrabee – South Lockwood 34.5 kV line transfer	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.5	Larrabee Collector station – Larrabee 230 kV new line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.6	Larrabee Collector station – Smithburg No.1 500 kV line (new asset). New 500 kV line will be built double circuit to accommodate a 500 kV line and a 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.7	Rebuild G1021 Atlantic – Smithburg 230 kV line between the Larrabee and Smithburg substations as a double circuit 500 kV/230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.8	Smithburg substation 500 kV expansion to 4-breaker ring	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.9	Larrabee substation upgrades	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.10	Atlantic 230 kV substation – Convert to double-breaker double-bus	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.11	Freneau substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.12	Smithburg substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.13	Oceanview substation – Update relay settings on the Atlantic 230 kV lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.14	Red Bank substation – Update relay settings on the Atlantic 230 kV lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.15	South River substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.16	Larrabee substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.17	Atlantic substation – Construct a new 230 kV line terminal position to accept the generator lead line from the offshore wind Larrabee Collector station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.18	G1021 (Atlantic – Smithburg) 230 kV upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.19	R1032 (Atlantic – Larrabee) 230 kV upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.20	New Larrabee Collector station – Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.21	Larrabee – Oceanview 230 kV line upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.22	Construct the Larrabee Collector station AC switchyard, composed of a 230 kV 3 bay breaker and a half substation with a nominal current rating of 4000 A and four single phase 500/230 kV 450 MVA autotransformers to step up the voltage for connection to the Smithburg substation. Procure land adjacent to the AC switchyard, and prepare the site for construction of future AC to DC converters for future interconnection of DC circuits from offshore wind generation. Land should be suitable to accommodate installation of four individual converters to accommodate circuits with equivalent rating of 1400 MVA at 400 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.23	Rebuild the underground portion of Richmond – Waneeta 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.24	Upgrade Cardiff – Lewis 138 kV by replacing 1590 kcmil strand bus inside Lewis substation	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.25	Upgrade Lewis No. 2 – Lewis No. 1 138 kV by replacing its bus tie with 2000 A circuit breaker	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.26	Upgrade Cardiff – New Freedom 230 kV by modifying existing relay setting to increase relay limit	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.27	Rebuild approximately 0.8 miles of the D1018 (Clarksville –Lawrence 230 kV) line between Lawrence substation (PSEG) and structure No. 63	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.28	Reconductor Kilmer I – Lake Nelson I 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.29	Convert the six-wired East Windsor – Smithburg E2005 230 kV line (9.0 miles) to two circuits: One a 500 kV line and the other a 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.30	Add third Smithburg 500/230 kV transformer	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.31	Additional reconductoring required for Lake Nelson I –Middlesex 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.32	Rebuild Larrabee – Smithburg No. 1 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.33	Reconductor Red Oak A – Raritan River 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.34	Reconductor Red Oak B – Raritan River 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.35	Reconductor small section of Raritan River – Kilmer I 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.36	Replace substation conductor at Kilmer and reconductor Raritan River – Kilmer W 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.37	Add a third set of submarine cables, rerate the overhead segment, and upgrade terminal equipment to achieve a higher rating for the Silver Run – Hope Creek 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.38	Linden subproject: Install a new 345/230 kV transformer at the Linden 345 kV switching station, and relocate the Linden – Tosco 230 kV (B-2254) line from the Linden 230 kV to the existing 345/230 kV transformer at Linden 345 kV station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.39	Bergen subproject: Upgrade the Bergen 138 kV ring bus by installing a 80 kA breaker along with the foundation, piles, and relays to the existing ring bus, install breaker isolation switches on existing foundations and modify and extend bus work	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.40	Windsor to Clarksville subproject: Create a paired conductor path between Clarksville 230 kV and JCPL Windsor Switch 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.41	Windsor to Clarksville subproject: Upgrade all terminal equipment at Windsor 230 kV and Clarksville 230 kV as necessary to create a paired conductor path between Clarksville and JCPL East Windsor Switch 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.42	Upgrade inside plant equipment at Lake Nelson I 230 kV station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.43	Upgrade Kilmer W – Lake Nelson W 230 kV line drop and strain bus connections at Lake Nelson 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.44	Upgrade Lake Nelson – Middlesex – Greenbrook W 230 kV line drop and strain bus connections at Lake Nelson 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.45	Reconductor 0.33 miles of PPL’s portion of the Gilbert –Springfield 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.46	Install a new breaker at Graceton 230 kV substation to terminate a new 230 kV line from the new greenfield North Delta station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.47 <sup>±</sup>	<p><u>Build a new greenfield North Delta station with two 500/230 kV 1500 MVA transformers and nine 63 kA breakers (four high side and five low side breakers in ring bus configuration)</u></p> <p><u>Build a new North Delta 500 kV substation with four bay breaker and half configuration. The substation will include 12 500 kV breakers and one 500/230 kV transformers, will allow the termination of six 500 kV lines</u></p>	<p><b><u>Reliability Driver (26.73%):</u></b></p> <p><b><u>Load-Ratio Share Allocation:</u></b>  <u>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</u></p> <p><b><u>DFAX Allocation:</u></b>  <u>PECO (100%)</u></p> <p><b><u>Public Policy Driver (73.27%):</u></b>  <u>AEC (<del>13.64</del><u>13.55</u>%) / JCPL (<del>31.98</del><u>31.74</u>%) / PSEG (<del>52.17</del><u>52.60</u>%) / RE (<del>2.21</del><u>2.11</u>%)</u></p>
b3737.48	Build a new North Delta – Graceton 230 kV line by rebuilding 6.07 miles of the existing Cooper – Graceton 230 kV line to double circuit	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.49	Bring the Cooper – Graceton 230 kV line “in and out” of North Delta by constructing a new double-circuit North Delta – Graceton 230 kV (0.3 miles) and a new North Delta – Cooper 230 kV (0.4 miles) cut-in lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

+ b3737.47 is an Incremental Multi-Driver Project that includes both a reliability driver and a public policy driver. Accordingly, b3737.47 is included on both Tariff, Schedule 12–Appendix A, section 28 and Tariff, Schedule 12–Appendix C, section 1.

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.50	Bring the Peach Bottom – Delta Power Plant 500 kV line “in and out” of North Delta by constructing a new Peach Bottom – North Delta 500 kV (0.3 miles) cut-in and cut-out lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.51	Replace four 63 kA circuit breakers "205," "235," "225" and "255" at Peach Bottom 500 kV with 80 kA	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.52	Replace one 63 kA circuit breaker "B4" at Conastone 230 kV with 80 kA	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.53	Remove the existing E83 115 kV line (not in-service) to accommodate the new 500 kV/230 kV lines (approximately 7.7 miles)	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.54	Remove the existing H2008 Larrabee – Smithburg No. 2 230 kV line to accommodate the new 500 kV/230 kV lines	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.55	Middlesex substation 230 kV – Replace the 2000A circuit switcher at Middlesex switch point for the Lake Nelson I1023 230 kV exit	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.56	Build a new North Delta – Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper – Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO and BGE. This subproject is for BGE's portion of the line rebuild, which is 2.16 miles	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.59	Windsor to Clarksville subproject: Upgrade terminal equipment at Windsor 230 kV station	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.60	Perform a Pre-build Infrastructure evaluation study in alignment with the NJBPU Solicitation Guidance Document requirements	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)

# **Attachment C**

Schedule 12 – Appendix A and  
Appendix C of the PJM Open Access  
Transmission Tariff

(Clean Format)

**SCHEDULE 12 – APPENDIX A**

**(2) Baltimore Gas and Electric Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2219	Install a 115 kV tie breaker at Wagner to create a separation from line 110535 and transformer 110-2	BGE (100%)
b2220	Install four 115 kV breakers at Chestnut Hill	BGE (100%)
b2221	Install an SPS to trip approximately 19 MW load at Green St. and Concord	BGE (100%)
b2307	Install a 230/115 kV transformer at Raphael Rd and construct approximately 3 miles of 115 kV line from Raphael Rd. to Joppatowne. Construct a 115 kV three breaker ring at Joppatowne	BGE (100%)
b2308	Build approximately 3 miles of 115 kV underground line from Bestgate tap to Waugh Chapel. Create two breaker bay at Waugh Chapel to accommodate the new underground circuit	BGE (100%)
b2396	Build a new Camp Small 115 kV station and install 30 MVAR capacitor	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2396.1	Install a tie breaker at Mays Chapel 115 kV substation	BGE (100%)
b2567	Upgrade the Riverside 115 kV substation strain bus conductors on circuits 115012 and 115011 with double bundled 1272 ACSR to achieve ratings of 491/577 MVA SN/SE on both transformer leads	BGE (100%)
b2568	Reconductor Northwest – Northwest #2 115 kV 110574 substation tie circuit with 2167 ACSR to achieve ratings of 400/462 MVA SN/SE	BGE (100%)
b2752.6	Conastone 230 kV substation tie-in work (install a new circuit breaker at Conastone 230 kV and upgrade any required terminal equipment to terminate the new circuit)	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPSCO (20.88%)
b2752.7	Reconductor/Rebuild the two Conastone – Northwest 230 kV lines and upgrade terminal equipment on both ends	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPSCO (20.88%)
b2752.8	Replace the Conastone 230 kV ‘2322 B5’ breaker with a 63 kA breaker	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2752.9	Replace the Conastone 230 kV '2322 B6' breaker with a 63 kA breaker		BGE (100%)
b2766.1	Upgrade substation equipment at Conastone 500 kV to increase facility rating to 2826 MVA normal and 3525 MVA emergency		<p><b>Load-Ratio Share Allocation:</b>            AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>            APS (3.98%) / ATSI (0.03%) / BGE (20.98%) / DL (0.01%) / Dominion (32.06%) / DPL (0.02%) / JCPL (7.05%) / NEPTUNE* (0.81%) / PEPCO (17.70%) / PPL (2.72%) / PSEG (14.07%) / RE (0.57%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2816	Re-connect the Crane – Windy Edge 110591 & 110592 115 kV circuits into the Northeast Substation with the addition of a new 115 kV 3-breaker bay	BGE (100%)
b2992.1	Reconductor the Conastone to Graceton 230 kV 2323 & 2324 circuits. Replace 7 disconnect switches at Conastone substation	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPCO (20.53%)
b2992.2	Add Bundle conductor on the Graceton – Bagley – Raphael Road 2305 & 2313 230 kV circuits	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPCO (20.53%)
b2992.3	Replacing short segment of substation conductor on the Windy Edge to Glenarm 110512 115 kV circuit	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPCO (20.53%)
b2992.4	Reconductor the Raphael Road – Northeast 2315 & 2337 230 kV circuits	AEP (2.25%) / APS (2.58%) / BGE (44.61%) / ComEd (0.51%) / Dayton (0.40%) / DEOK (1.39%) / DL (0.14%) / Dominion (27.05%) / EKPC (0.52%) / PENELEC (0.02%) / PEPCO (20.53%)
b3228	Replace two (2) relays at Center substation to increase ratings on the Westport to Center 110552 115 kV circuit	BGE (100%)
b3305	Replace Pumphrey 230/115 kV transformer	BGE (100%)

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3668	Upgrade Windy Edge 115 kV substation conductor to increase ratings of the Windy Edge – Chesco Park 110501 115 kV line		BGE (100%)
b3770	Rebuild 1.4 miles of existing single circuit 230 kV tower line between BGE's Graceton substation to the Brunner Island PPL tie-line at the MD/PA state line to double circuit steel pole line with one circuit installed to uprate 2303 circuit		BGE (99.98%) / ME (0.01%) / PPL (0.01%)
b3771	Reconductor two (2) 230 kV circuits from Conastone to Northwest #2		BGE (70.70%) / PEPSCO (29.30%)
b3780.4	Peach Bottom to Graceton (BGE) 500 kV transmission line. New rating is 4503 MVA SN/ 5022 MVA SE		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.03%) / BGE (28.40%) / DPL (0.02%) / Dominion (33.36%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PEPSCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3780.5	Build 230 kV Solley Road substation and STATCOM. New STATCOM rating: 350 MVAR. Add 4x 230 kV breakers bays	BGE (100%)
b3780.6	Build 230 kV Granite substation and STATCOM. New STATCOM rating: 350 MVAR. Add 4x 230 kV breaker bays	BGE (100%)
b3780.7	Build Batavia Road 230 kV substation. Add 4x 230 kV breaker bays	BGE (100%)
b3780.8	Graceton 500 kV substation expansion: Add 3x 500 kV breaker bays, two 500/230 kV auto transformers, and one 250 MVAR capacitor. New transformer rating: 1559 MVA SN / 1940 MVA SE. New capacitor rating: 250 MVAR	BGE (81.92%) / PEPCO (18.08%)
b3780.9	Build Graceton to Batavia Road 230 kV double circuit line. New rating: 1331 MVA SN/ 1594 MVA SE	BGE (100%)
b3780.10	Install new 350 MVAR capacitor at Conastone 500 kV substation	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> BGE (100%)
b3780.13	Reconductor Batavia Road to Riverside 230 kV line. New rating: 1941 MVA SN / 2181 MVA SE	BGE (51.24%) / PEPCO (48.76%)

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.4	New Otter Creek to Doubs 500 kV line (MD Border - PSEG Demarcation Point). Rebuild and expand existing approximately 6 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 kV and 230 kV lines.	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPSCO (10.59%)</p>
b3800.26	Build High Ridge 500 kV substation - Three bay breaker and half configuration	This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.27 ~ b3800.33
b3800.27	High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Waugh Chapel side	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (70.66%) / PEPSCO (29.34%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.28	High Ridge 500 kV substation (cut into Brighton - Waugh Chapel 500 kV line) - Brighton side	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (0.68%) / BGE (97.41%) / Dominion (1.91%)</p>
b3800.29	High Ridge termination for the North Delta - High Ridge 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPCO (28.48%) / PSEG (9.24%) / RE (0.40%)</p>
b3800.30	High Ridge - Install two 500/230 kV transformers	BGE (62.75%) / PEPCO (37.25%)

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.32	Build new North Delta – High Ridge 500 kV line (approximately 59 miles)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (2.58%) / Dominion (59.28%) / DPL (0.02%) / PEPSCO (28.48%) / PSEG (9.24%) / RE (0.40%)</p>
b3800.34	Rebuild 5012 (existing Peach Bottom - Conastone) (new Graceton - Conastone) 500 kV line on single circuit structures within existing right-of-way (ROW) and cut into North Delta 500 kV and Graceton 500 kV stations	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / NEPTUNE* (0.88%) / PENELEC (1.60%) / PEPSCO (12.32%) / PSEG (14.57%) / RE (0.63%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.36	Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton BGE) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (51.35%) / Dominion (32.44%) / DPL (0.01%) / JCPL (0.01%) / PEPSCO (16.17%) / PSEG (0.02%)</p>
b3800.37	Replace terminal equipment limitations at Conastone 500 kV - on the existing Peach Bottom – Conastone, future Graceton – Conastone, 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (12.36%) / Dominion (24.57%) / DPL (25.17%) / JCPL (7.90%) / NEPTUNE* (0.88%) / PENELEC (1.60%) / PEPSCO (12.32%) / PSEG (14.57%) / RE (0.63%)</p>

\*Neptune Regional Transmission System, LLC

**Baltimore Gas and Electric Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.41	Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Conastone 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(3) Delmarva Power & Light Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2288	Build a new 138 kV line from Piney Grove – Wattsville	DPL (100%)
b2395	Reconductor the Harmony – Chapel St 138 kV circuit	DPL (100%)
b2569	Replace Terminal equipment at Silverside 69 kV substation	DPL (100%)
b2633.7	Implement high speed relaying utilizing OPGW on Red Lion – Hope Creek 500 kV line	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2633.10	Interconnect the new Silver Run 230 kV substation with existing Red Lion – Cartanza and Red Lion – Cedar Creek 230 kV lines	AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)

\*Neptune Regional Transmission System, LLC

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2695	Rebuild Worcester – Ocean Pine 69 kV ckt. 1 to 1400A capability summer emergency		DPL (100%)
b2946	Convert existing Preston 69 kV substation to DPL’s current design standard of a 3-breaker ring bus		DPL (100%)
b2947.1	Upgrade terminal equipment at DPL’s Naamans substation (Darley - Naamans 69 kV)		DPL (100%)
b2947.2	Reconductor 0.11 mile section of Darley - Naamans 69 kV circuit		DPL (100%)
b2948	Upgrade terminal equipment at DPL’s Silverside Road substation (Dupont Edge Moor – Silver R. 69 kV)		DPL (100%)
b2987	Install a 30 MVAR capacitor bank at DPL’s Cool Springs 69 kV substation. The capacitor bank would be installed in two separate 15 MVAR stages allowing DPL operational flexibility		DPL (100%)
b3143.1	Reconductor the Silverside Road – Darley 69 kV circuit		DPL (100%)
b3143.2	Reconductor the Darley – Naamans 69 kV circuit		DPL (100%)
b3143.3	Replace three (3) existing 1200 A disconnect switches with 2000 A disconnect switches and install three (3) new 2000 A disconnect switches at Silverside 69 kV station		DPL (100%)

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3143.4	Replace two (2) 1200 A disconnect switches with 2000 A disconnect switches. Replace existing 954 ACSR and 500 SDCU stranded bus with two (2) 954 ACSR stranded bus. Reconfigure four (4) CTs from 1200 A to 2000 A and install two (2) new 2000 A disconnect switches and two (2) new 954 ACSR stranded bus at Naamans 69 kV station		DPL (100%)
b3143.5	Replace four (4) 1200 A disconnect switches with 2000 A disconnect switches. Replace existing 954 ACSR and 1272 MCM AL stranded bus with two (2) 954 ACSR stranded bus. Reconfigure eight (8) CTs from 1200 A to 2000 A and install four (4) new 2000 A (310 MVA SE / 351 MVA WE) disconnect switches and two (2) new 954 ACSR (331 MVA SE / 369 MVA WE) stranded bus at Darley 69 kV station		DPL (100%)
b3155	Rebuild approx. 12 miles of Wye Mills – Stevensville line		DPL (100%)
b3224	Replace a disconnect switch and reconductor a short span of the Mt. Pleasant – Middletown tap 138 kV line		DPL (100%)

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3326	Rebuild the Vienna - Nelson 138 kV line		DPL (100%)
b3327	Upgrade the disconnect switch at Kent 69 kV station		DPL (100%)
b3328	Upgrade the disconnect switch and CT at Vienna 138 kV station		DPL (100%)
b3329	Rebuild the Farmview - Milford 138 kV line		DPL (100%)
b3330	Rebuild the Farmview - S. Harrington 138 kV line		DPL (100%)
b3331	Upgrade stranded bus and relay at Seaford 138 kV station		DPL (100%)
b3332	Rebuild the Steel - Milford 230 kV line		DPL (100%)
b3669.1	Replace terminal equipment (stranded bus, disconnect switch and circuit breaker) at Church 138 kV substation		DPL (100%)
b3669.2	Replace terminal equipment (circuit breaker) at Townsend 138 kV substation		DPL (100%)
b3670	Upgrade terminal equipment on the Loretto – Fruitland 69 kV circuit. Replace the 477 ACSR stranded bus on the 6711 line terminal inside Loretto 69 KV substation and the 500 SDCU stranded bus on the 6711 line terminal inside 69 kV Fruitland substation with 954 ACSR conductor		DPL (100%)
b3688	Replace the 4/0 SDCU stranded bus with 954 ACSR and a 600 A disconnect switch with a 1200 A disconnect switch on the 6716 line terminal inside Todd substation on Preston – Todd 69 kV line		DPL (100%)

**Delmarva Power & Light Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3749	Rebuild the New Church - Piney Grove 138 kV line		DPL (100%)
b3800.39	Red Lion - Hope Creek 500 kV - Replace terminal equipment at Red Lion substation		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  AEC (0.02%) / BGE (22.89%) / Dominion (48.61%) / DPL (9.46%) / JCPL (0.03%) / PEPCO (18.96%) / PSEG (0.03%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(5) Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2006.1.1	Loop the 2026 (TMI – Hosensack 500 kV) line in to the Lauschtown	<p align="center"><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p align="center"><b>DFAX Allocation:</b>                      BGE (24.31%) / PPL (75.69%)</p>
b2006.2.1	Upgrade relay at South Reading on the 1072 230 V line	ME (100%)
b2006.4	Replace the South Reading 69 kV ‘81342’ breaker with 40 kA breaker	ME (100%)
b2006.5	Replace the South Reading 69 kV ‘82842’ breaker with 40 kA breaker	ME (100%)
b2452	Install 2nd Hunterstown 230/115 kV transformer	APS (8.30%) / BGE (14.70%) / DEOK (0.48%) / Dominion (36.92%) / ME (23.85%) / PEPSCO (15.75%)

\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2452.1	Reconductor Hunterstown - Oxford 115 kV line	APS (8.30%) / BGE (14.70%) / DEOK (0.48%) / Dominion (36.92%) / ME (23.85%) / PEPCO (15.75%)
b2452.3	Replace the Hunterstown 115 kV breaker '96192' with 40 kA	ME (100%)
b2588	Install a 36.6 MVAR 115 kV capacitor at North Bangor substation	ME (100%)
b2637	Convert Middletown Junction 230 kV substation to nine bay double breaker configuration.	ME (100%)
b2644	Install a 28.8 MVAR 115 kV capacitor at the Mountain substation	ME (100%)
b2688.1	Lincoln Substation: Upgrade the bus conductor and replace CTs	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RE (0.12%)
b2688.2	Germantown Substation: Replace 138/115 kV transformer with a 135/180/224 MVA bank. Replace Lincoln 115 kV breaker, install new 138 kV breaker, upgrade bus conductor and adjust/replace CTs	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RE (0.12%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone  
(cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.4	Upgrade terminal equipment at Hunterstown 500 kV on the Conemaugh – Hunterstown 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.4	Upgrade terminal equipment and required relay communication at TMI 500 kV: on the Beach Bottom – TMI 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2749	Replace relay at West Boyertown 69 kV station on the West Boyertown – North Boyertown 69 kV circuit	ME (100%)
b2765	Upgrade bus conductor at Gardners 115 kv substation; Upgrade bus conductor and adjust CT ratios at Carlisle Pike 115 kV	ME (100%)
b2950	Upgrade limiting 115 kV switches on the 115 kV side of the 230/115 kV Northwood substation and adjust setting on limiting ZR relay	ME (100%)
b3136	Replace bus conductor at Smith 115 kV substation	ME (100%)
b3145	Rebuild the Hunterstown – Lincoln 115 kV Line No. 962 (approx. 2.6 miles). Upgrade limiting terminal equipment at Hunterstown and Lincoln	AEP (16.60%) / APS (8.09%) / BGE (2.74%) / Dayton (2.00%) / DEOK (0.35%) / DL (1.31%) / Dominion (52.77%) / EKPC (1.54%) / OVEC (0.06%) / PEPCO (14.54%)
b3311	Install a 120.75 kV 79.4 MVAR capacitor bank at Yorkana 115 kV	ME (100%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3671	Rebuild approximately 3.6 miles of North Boyertown - West Boyertown 69 kV line. Upgrade terminal equipment (circuit breaker, disconnect switches, substation conductor) and relays at North Boyertown and West Boyertown 69 kV substation	ME (100%)
b3715.3	Install a new Allen four breaker ring bus switchyard near the existing ME Allen substation on adjacent property presently owned by FirstEnergy. Terminate the Round Top-Allen and the Allen-PPGI (PPG Industries) 115 kV lines into the new switchyard	ME (100%)
b3768	Rebuild/Reconductor the Germantown – Lincoln 115 kV line. Upgrade limiting terminal equipment at Lincoln, Germantown and Straban stations	ME (100%)
b3769	Install second TMI 500/230 kV transformer with additional 500 kV and 230 kV bus expansions	ME (45.74%) / PPL (54.26%)

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.2	Break the existing Three Mile Island - Peach Bottom 500 kV line and terminate into adjacent Otter Creek 500 kV switchyard	<p style="text-align: center;"><b>Load-Ratio Share Allocation:</b></p> <p>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p style="text-align: center;"><b>DFAX Allocation:</b></p> <p>APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPSCO (10.59%) / PPL (0.22%)</p>

\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone  
(cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.6	Replace terminal equipment at TMI Peach Bottom - TMI 500 kV line	<p style="text-align: center;"><b>Load-Ratio Share Allocation:</b></p> <p>AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p style="text-align: center;"><b>DFAX Allocation:</b></p> <p>APS (7.41%) / BGE (15.50%) / Dominion (45.08%) / DPL (2.46%) / JCPL (0.80%) / ME (0.34%) / NEPTUNE* (0.09%) / PECO (10.72%) / PEPSCO (15.72%) / PPL (0.43%) / PSEG (1.39%) / RE (0.06%)</p>
b3800.10	Rebuild the Germantown - Lincoln 115 kV line for 230 kV double circuit construction	ME (100%)
b3800.11	Rebuild the Hunterstown - Lincoln 115 kV line for 230 kV double circuit construction	ME (100%)
b3800.12	Rebuild the Germantown - Carroll 138 kV line for 230 kV double circuit construction (MAIT Section)	ME (100%)
b3800.14	Construct new 230 kV Hunterstown - Carroll line (MAIT Section)	APS (99.86%) / ME (0.14%)

\* Neptune Regional Transmission System, LLC

**Mid-Atlantic Interstate Transmission, LLC for the Metropolitan Edison Company Zone  
(cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.18	Add a new 230 kV breaker at the Hunterstown 230 kV substation for the new Hunterstown - Carroll 230 kV termination	APS (99.86%) / ME (0.14%)
b3800.19	Reconductor Lincoln - Orrtanna 115 kV line	ME (100%)
b3800.22	Install DTT relaying at Straban 115 kV substation	ME (100%)
b3800.23	Revise Relay Settings at Lincoln 115 kV substation	ME (100%)
b3800.24	Revise Relay Settings at Germantown 115 kV substation	ME (100%)

**SCHEDULE 12 – APPENDIX A**

**(8) PECO Energy Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2130	Replace Waneeta 138 kV breaker '15' with 63 kA rated breaker	PECO (100%)
b2131	Replace Waneeta 138 kV breaker '35' with 63 kA rated breaker	PECO (100%)
b2132	Replace Waneeta 138 kV breaker '875' with 63 kA rated breaker	PECO (100%)
b2133	Replace Waneeta 138 kV breaker '895' with 63 kA rated breaker	PECO (100%)
b2134	Plymouth Meeting 230 kV breaker '115' with 63 kA rated breaker	PECO (100%)
b2222	Install a second Eddystone 230/138 kV transformer	PECO (100%)
b2222.1	Replace the Eddystone 138 kV #205 breaker with 63 kA breaker	PECO (100%)
b2222.2	Increase Rating of Eddystone #415 138 kV Breaker	PECO (100%)
b2236	50 MVAR reactor at Buckingham 230 kV	PECO (100%)
b2527	Replace Whitpain 230 kV breaker '155' with 80 kA breaker	PECO (100%)
b2528	Replace Whitpain 230 kV breaker '525' with 80 kA breaker	PECO (100%)
b2529	Replace Whitpain 230 kV breaker '175' with 80 kA breaker	PECO (100%)
b2549	Replace terminal equipment inside Chichester substation on the 220-36 (Chichester – Eddystone) 230 kV line	PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2550	Replace terminal equipment inside Nottingham substation on the 220-05 (Nottingham – Daleville- Bradford) 230 kV line	PECO (100%)
b2551	Replace terminal equipment inside Llanerch substation on the 130-45 (Eddystone to Llanerch) 138 kV line	PECO (100%)
b2572	Replace the Peach Bottom 500 kV ‘#225’ breaker with a 63 kA breaker	PECO (100%)
b2694	Increase ratings of Peach Bottom 500/230 kV transformer to 1479 MVA normal/1839 MVA emergency	AEC (3.97%)/ AEP (5.77%)/ APS (4.27%)/ ATSI (6.15%)/ BGE (1.63%)/ ComEd (0.72%)/ Dayton (1.06%)/ DEOK (1.97%)/ DL (2.25%)/ Dominion (0.35%)/ DPL (14.29%)/ ECP** (0.69%)/ EKPC (0.39%)/ HTP*** (0.96%)/ JCPL (6.84%) MetEd (3.28%)/ NEPTUNE* (2.14%)/ PECO (16.42%)/ PENELEC (3.94%)/ PPL (8.32%)/ PSEG (14.13%)/ RE (0.44%)
b2752.2	Tie in new Furnace Run substation to Peach Bottom – TMI 500 kV	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2752.3	Upgrade terminal equipment and required relay communication at Peach Bottom 500 kV: on the Beach Bottom – TMI 500 kV circuit	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)

\*Neptune Regional Transmission System, LLC

\*\* East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2766.2	Upgrade substation equipment at Peach Bottom 500 kV to increase facility rating to 2826 MVA normal and 3525 MVA emergency	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPSCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (0.72%) / APS (11.06%) / ATSI (1.43%) / BGE (34.25%) / DPL (1.83%) / PECO (1.80%) / PEPSCO (35.49%) / PSEG (12.92%) / RE (0.50%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2774	Reconductor the Emilie - Falls 138 kV line, and replace station cable and relay	PECO (100%)
b2775	Reconductor the Falls - U.S. Steel 138 kV line	PECO (100%)
b2850	Replace the Waneeta 230 kV "285" with 63 kA breaker	PECO (100%)
b2852	Replace the Chichester 230 kV "195" with 63 kA breaker	PECO (100%)
b2854	Replace the North Philadelphia 230 kV "CS 775" with 63 kA breaker	PECO (100%)
b2855	Replace the North Philadelphia 230 kV "CS 885" with 63 kA breaker	PECO (100%)
b2856	Replace the Parrish 230 kV "CS 715" with 63 kA breaker	PECO (100%)
b2857	Replace the Parrish 230 kV "CS 825" with 63 kA breaker	PECO (100%)
b2858	Replace the Parrish 230 kV "CS 935" with 63 kA breaker	PECO (100%)
b2859	Replace the Plymouth Meeting 230 kV "215" with 63 kA breaker	PECO (100%)
b2860	Replace the Plymouth Meeting 230 kV "235" with 63 kA breaker	PECO (100%)
b2861	Replace the Plymouth Meeting 230 kV "325" with 63 kA breaker	PECO (100%)
b2862	Replace the Grays Ferry 230 kV "705" with 63 kA breaker	PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)	
b2863	Replace the Grays Ferry 230 kV "985" with 63 kA breaker		PECO (100%)
b2864	Replace the Grays Ferry 230 kV "775" with 63 kA breaker		PECO (100%)
b2923	Replace the China Tap 230 kV 'CS 15' breaker with a 63 kA breaker		PECO (100%)
b2924	Replace the Emilie 230 kV 'CS 15' breaker with 63 kA breaker		PECO (100%)
b2925	Replace the Emilie 230 kV 'CS 25' breaker with 63 kA breaker		PECO (100%)
b2926	Replace the Chichester 230 kV '215' breaker with 63 kA breaker		PECO (100%)
b2927	Replace the Plymouth Meeting 230 kV '125' breaker with 63 kA breaker		PECO (100%)
b2985	Replace the 230 kV CB #225 at Linwood Substation (PECO) with a double circuit breaker (back to back circuit breakers in one device)		PECO (100%)
b3041	Peach Bottom – Furnace Run 500 kV terminal equipment		PECO (100%)
b3120	Replace the Whitpain 230 kV breaker "125" with a 63 kA breaker		PECO (100%)
b3138	Move 2 MVA load from the Roxborough to Bala substation. Adjust the tap setting on the Master 138/69 kV transformer #2		PECO (100%)
b3146	Upgrade the Richmond 69 kV breaker "140" with 40 kA breaker		PECO (100%)

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3697	Replace station conductor and metering inside Whitpain and Plymouth 230 kV substations to increase the ratings of the Whitpain – Plymouth 230 kV line	PECO (100%)
b3728.2	Replace 4 meters and bus work inside Peach Bottom substation on the 500 kV Line 5012 (Conastone – Peach Bottom)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPSCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      APS (3.94%) / ATSI (0.03%) / BGE (20.78%) / DL (0.01%) / DPL (0.02%) / Dominion (31.75%) / JCPL (6.99%) / NEPTUNE* (0.80%) / PECO (0.98%) / PEPSCO (17.52%) / PPL (2.69%) / PSEG (13.93%) / RE (0.56%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3780.1	Peach Bottom North upgrades – 500 kV substation work. Add 3x 500 kV breakers to form a breaker-and-a-half bay		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.02%) / BGE (28.40%) / Dominion (33.36%) / DPL (0.02%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PECO (0.01%) / PEPCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>
b3780.2	Peach Bottom to Graceton (PECO) new 500 kV transmission line. New rating: 4503 MVA SN/5022 MVA SE		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      ATSI (0.02%) / BGE (28.40%) / Dominion (33.36%) / DPL (0.02%) / JCPL (6.36%) / NEPTUNE* (0.73%) / PECO (0.01%) / PEPCO (17.90%) / PSEG (12.69%) / RE (0.51%)</p>
b3780.3	West Cooper substation work includes 3 breaker ring, 500/230 kV transformer, control house, substation build, and reconfigure Cooper distribution station feed. New transformer rating: 1559 MVA SN/ 1940 MVA SE		DPL (41.52%) / PECO (58.48%)

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.5	Replace terminal equipment at Peach Bottom on Peach Bottom - TMI 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      AEC (6.40%) / BGE (20.32%) / DPL (9.76%) / JCPL (17.57%) / NEPTUNE* (1.73%) / PECO (6.33%) / PEPCO (7.48%) / PSEG (29.15%) / RE (1.26%)</p>
b3800.31	Build new North Delta – High Ridge 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<p>b3800.35</p>	<p>Rebuild 5012 (existing Peach Bottom - Conastone) (new North Delta - Graceton PECO) 500 kV line on single circuit structures within existing ROW and cut into North Delta 500 kV and Graceton 500 kV stations</p>		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  BGE (49.42%) / Dominion (31.22%) / DPL (0.01%) / JCPL (0.01%) / PECO (3.75%) / PEPCO (15.57%) / PSEG (0.02%)</p>
<p>b3800.42</p>	<p>Peach Bottom North 500 kV bus upgrade - Replace 11 instances of strain bus conductor used for breaker drops or CT drops, seven 500 kV disconnect switches, seven Free Standing CTs, one 500 kV breaker, two breaker relays or meters</p>		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  BGE (62.82%) / DPL (7.25%) / JCPL (0.09%) / NEPTUNE* (0.01%) / PECO (0.01%) / PEPCO (29.63%) / PSEG (0.18%) / RE (0.01%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3800.44	North Delta termination for the North Delta - High Ridge 500 kV line (PECO work)		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</p>
b3800.45	North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO work)		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / NEPTUNE* (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)</p>

\*Neptune Regional Transmission System, LLC

**PECO Energy Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.46	North Delta 500 kV termination for the new Peach Bottom - North Delta 500 kV line (PECO work)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</p>
b3800.47	Build new Peach Bottom South - North Delta 500 kV line – cut in to Peach Bottom tie No.1 and extending line to North Delta (Approximately 1.25 miles new ROW)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(9) PPL Electric Utilities Corporation**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1813.12	Replace the Blooming Grove 230 kV breaker 'Peckville'	PPL (100%)
b2223	Rebuild and reconductor 2.6 miles of the Sunbury - Dauphin 69 kV circuit	PPL (100%)
b2224	Add a 2nd 150 MVA 230/69 kV transformer at Springfield	PPL (100%)
b2237	150 MVAR shunt reactor at Alburdis 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PPL (100%)
b2238	100 MVAR shunt reactor at Elimspport 230 kV	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2269 Rebuild approximately 23.7 miles of the Susquehanna - Jenkins 230 kV circuit. This replaces a temporary SPS that is already planned to mitigate the violation until this solution is implemented		PPL (100%)
b2282 Rebuild the Siegfried-Frackville 230 kV line		PPL (100%)
b2406.1 Rebuild Stanton-Providence 69 kV 2&3 9.5 miles with 795 SCSR		PPL (100%)
b2406.2 Reconductor 7 miles of the Lackawanna - Providence 69 kV #1 and #2 with 795 ACSR		PPL (100%)
b2406.3 Rebuild SUB2 Tap 1 (Lackawanna - Scranton 1) 69 kV 1.5 miles 556 ACSR		PPL (100%)
b2406.4 Rebuild SUB2 Tap 2 (Lackawanna - Scranton 1) 69 kV 1.6 miles 556 ACSR		PPL (100%)
b2406.5 Create Providence - Scranton 69 kV #1 and #2, 3.5 miles with 795 ACSR		PPL (100%)
b2406.6 Rebuild Providence 69 kV switchyard		PPL (100%)
b2406.7 Install 2 - 10.8 MVAR capacitors at EYNO 69 kV		PPL (100%)
b2406.8 Rebuild Stanton 230 kV yard		PPL (100%)

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2446	Replace wave trap and protective relays at Montour	PPL (100%)
b2447	Replace wave trap and protective relays at Montour	PPL (100%)
b2448	Install a 2nd Sunbury 900 MVA 500-230 kV transformer and associated equipment	PPL (100%)
b2552.2	Reconductor the North Meshoppen - Oxbow – Lackawanna 230 kV circuit and upgrade terminal equipment (PPL portion)	PENELEC (72.85%) / PPL (27.15%)
b2574	Replace the Sunbury 230 kV ‘MONTOUR NORT’ breaker with a 63 kA breaker	PPL (100%)
b2690	Reconductor two spans of the Graceton – Safe Harbor 230 kV transmission line. Includes termination point upgrades	PPL (100%)
b2691	Reconductor three spans limiting Brunner Island – Yorkana 230 kV line, add 2 breakers to Brunner Island switchyard, upgrade associated terminal equipment	PPL (100%)

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2716	Add a 200 MVAR shunt reactor at Lackawanna 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      PPL (100%)</p>
b2754.1	Install 7 miles of optical ground wire (OPGW) between Gilbert and Springfield 230 kV substations	PPL (100%)
b2754.4	Use ~ 40 route miles of existing fibers on PPL 230 kV system to establish direct fiber circuits	PPL (100%)
b2754.5	Upgrade relaying at Martins Creek 230 kV	PPL (100%)
b2756	Install 2% reactors at Martins Creek 230 kV	PPL (100%)
b2813	Expand existing Lycoming 69 kV yard to double bus double breaker arrangement	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2824	Reconfigure/Expand the Lackawanna 500 kV substation by adding a third bay with three breakers	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      PPL (100%)</p>
b2838	Build a new 230/69 kV substation by tapping the Montour – Susquehanna 230 kV double circuits and Berwick – Hunlock & Berwick – Colombia 69 kV circuits	PPL (100%)
b2979	Replace Martins Creek 230 kV circuit breakers with 80 kA rating	PPL (100%)
b3221	Replace terminal equipment (bus conductor) on the 230 kV side of the Steel City 500/230 kV Transformer #1	PPL (100%)
b3222	Install one (1) 7.2 MVAR fixed cap bank on the Lock Haven – Reno 69 kV line and one (1) 7.2 MVAR fixed cap bank on the Lock Haven – Flemington 69 kV line near the Flemington 69/12 kV substation	PPL (100%)

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3664	Replace the limiting 230 kV T2 transformer leads, bay conductor and bus conductor with double bundle 1590 ACSR at the Juniata station; Replace the limiting 1200 A MODs on the bus tie breaker with 3000 A MODs	PPL (100%)
b3698	Reconductor the 14.2 miles of the existing Juniata –Cumberland 230 kV line with 1272 ACSS/TW HS285 "Pheasant" conductor	AEC (4.17%) / BGE (13.18%) / DEOK (1.22%) / Dominion (3.25%) / DPL (9.14%) / ECP** (0.11%) / EKPC (0.22%) / HTP*** (0.20%) /JCPL (1.15%) / ME (27.02%) / NEPTUNE* (0.64%) / PECO (18.88%) / PEPCO (4.68%) / PSEG (16.14%)
b3715.1	Install a new 300 MVA 230/115 kV transformer at the existing PPL Williams Grove substation	ME (100%)
b3715.2	Construct a new approximately 3.4 miles 115 kV single circuit transmission line from Williams Grove to Allen substation	ME (100%)

\* Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3774	Upgrade terminal equipment at Brunner Island station on Brunner Island – Yorkana 230 kV line	PPL (100%)
b3800.1	Build a New Otter Creek 500 kV (Collinsville) switching station with two bay three breaker configuration	<p><b>Load-Ratio Share Allocation:</b>            AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>            APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)</p>

\* Neptune Regional Transmission System, LLC

**PPL Electric Utilities Corporation (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.3	New Otter Creek (Collinsville) to Doubs 500 kV Line (Otter Creek 500 kV - MD Border). Rebuild and expand existing approximately 12 miles of Otter Creek - Conastone 230 kV line to become a double-circuit 500 and 230 kV lines	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.16%) / BGE (0.71%) / Dominion (74.28%) / DPL (0.36%) / PECO (0.68%) / PEPCO (10.59%) / PPL (0.22%)</p>

\* Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(10) Potomac Electric Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2279 Add two 100 MVAR reactors at Dickerson Station H and two 100 MVAR reactors at Brighton 230 kV substation		PEPCO (100%)
b2372 Upgrade the Chalk Point - T133TAP 230 kV Ck. 1 (23063) and Ckt. 2 (23065) to 1200 MVA ACCR		BGE (100%)
b3780.11 Add a 350 MVAR STATCOM and a 350 MVAR capacitor at Brighton 500 kV substation		<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PEPCO (100%)
b3780.12 Add a 250 MVAR capacitor at Burchess Hill 500 kV substation		<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> PEPCO (100%)

\*Neptune Regional Transmission System, LLC

The Annual Revenue Requirement associated with the Transmission Enhancement Charges are set forth and determined in Appendix A to Attachment H-9.

**Potomac Electric Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.33	Replace terminal equipment limitations at Brighton 500 kV - on the existing Brighton - Waugh Chapel 500 kV (5053) line or the new Brighton - High Ridge 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (0.68%) / BGE (86.77%) / Dominion (1.91%) / PEPCO (10.64%)</p>
b3800.38	Chalk Point - Cheltenham 500 kV line (5073 line) - Replace relay at Chalk Point 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (39.75%) / Dominion (59.03%) / PEPCO (1.22%)</p>

\*Neptune Regional Transmission System, LLC

**Potomac Electric Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.40	Conastone - Brighton 500 kV line (5011 line) - Replace terminal equipment limitations at Brighton 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      BGE (9.65%) / Dominion (63.04%) / DPL (0.02%) / PEPCO (27.29%)</p>
b3800.243	Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen (the 500 kV portion of the work)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)</p>
b3800.244	Rebuild 7.26 miles of existing 230 kV circuit from Dickerson Station H to Ed's Ferry area to accommodate the new 500 kV circuit between Doubs and Aspen (the 230 kV portion of the project)	<p>APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPCO (26.97%)</p>

\*Neptune Regional Transmission System, LLC

**Potomac Electric Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.245	Reconfigure Dickerson H 230 kV substation and upgrade terminal equipment	APS (9.78%) / BGE (12.07%) / Dominion (51.18%) / PEPSCO (26.97%)

**SCHEDULE 12 – APPENDIX A**

**(12) Public Service Electric and Gas Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2218	Rebuild 4 miles of overhead line from Edison - Meadow Rd - Metuchen (Q 1317)	PSEG (100%)
b2239	50 MVAR reactor at Saddlebrook 230 kV	PSEG (100%)
b2240	50 MVAR reactor at Athenia 230 kV	PSEG (100%)
b2241	50 MVAR reactor at Bergen 230 kV	PSEG (100%)
b2242	50 MVAR reactor at Hudson 230 kV	PSEG (100%)
b2243	Two 50 MVAR reactors at Stanley Terrace 230 kV	PSEG (100%)
b2244	50 MVAR reactor at West Orange 230 kV	PSEG (100%)
b2245	50 MVAR reactor at Aldene 230 kV	PSEG (100%)
b2246	150 MVAR reactor at Camden 230 kV	PSEG (100%)
b2247	150 MVAR reactor at Gloucester 230 kV	PSEG (100%)
b2248	50 MVAR reactor at Clarksville 230 kV	PSEG (100%)
b2249	50 MVAR reactor at Hinchmans 230 kV	PSEG (100%)
b2250	50 MVAR reactor at Beaverbrook 230 kV	PSEG (100%)
b2251	50 MVAR reactor at Cox's Corner 230 kV	PSEG (100%)

The Annual Revenue Requirement for all Public Service Electric and Gas Company Projects (Required Transmission Enhancements) in this Section 12 shall be as specified in Attachment 7 of Attachment H-10A and under the procedures detailed in Attachment H-10B.

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)	
b2276	Eliminate the Sewaren 138 kV bus by installing a new 230 kV bay at Sewaren 230 kV		PSEG (100%)
b2276.1	Convert the two 138 kV circuits from Sewaren – Metuchen to 230 kV circuits including Lafayette and Woodbridge substation		PSEG (100%)
b2276.2	Reconfigure the Metuchen 230 kV station to accommodate the two converted circuits		PSEG (100%)
b2290	Replace disconnect switches at Kilmer, Lake Nilson and Greenbrook 230 kV substations on the Raritan River - Middlesex (I-1023) circuit		PSEG (100%)
b2291	Replace circuit switcher at Lake Nelson 230 kV substation on the Raritan River - Middlesex (W-1037) circuit		PSEG (100%)
b2295	Replace the Salem 500 kV breaker 10X with 63 kA breaker		PSEG (100%)
b2421	Install all 69 kV lines to interconnect Plainfield, Greenbrook, and Bridgewater stations and establish the 69 kV network		PSEG (100%)
b2421.1	Install two 18 MVAR capacitors at Plainfield and S. Second St substation		PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2421.2	Install a second four (4) breaker 69 kV ring bus at Bridgewater Switching Station	PSEG (100%)
b2436.10	Convert the Bergen – Marion 138 kV path to double circuit 345 kV and associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>
b2436.21	Convert the Marion - Bayonne "L" 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.22	Convert the Marion - Bayonne "C" 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.33	Construct a new Bayway – Bayonne 345 kV circuit and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2436.34	Construct a new North Ave – Bayonne 345 kV circuit and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.50	Construct a new North Ave - Airport 345 kV circuit and any associated substation upgrades	PSEG (100%)
b2436.60	Relocate the underground portion of North Ave - Linden "T" 138 kV circuit to Bayway, convert it to 345 kV, and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2436.70	Construct a new Airport - Bayway 345 kV circuit and any associated substation upgrades	PSEG (100%)
b2436.81	Relocate the overhead portion of Linden - North Ave "T" 138 kV circuit to Bayway, convert it to 345 kV, and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>            AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>            PSEG (96.26%) / RE (3.74%)</p>

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.83	Convert the Bayway - Linden "Z" 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.84	Convert the Bayway – Linden “W” 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2436.85	Convert the Bayway – Linden “M” 138 kV circuit to 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (96.26%) / RE (3.74%)</p>
b2436.90	Relocate Farragut - Hudson "B" and "C" 345 kV circuits to Marion 345 kV and any associated substation upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      PSEG (100%)</p>
b2436.91	Relocate the Hudson 2 generation to inject into the 345 kV at Marion and any associated upgrades	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2437.10	New Bergen 345/230 kV transformer and any associated substation upgrades	PSEG (100%)
b2437.11	New Bergen 345/138 kV transformer #1 and any associated substation upgrades	PSEG (100%)
b2437.20	New Bayway 345/138 kV transformer #1 and any associated substation upgrades	PSEG (100%)
b2437.21	New Bayway 345/138 kV transformer #2 and any associated substation upgrades	PSEG (100%)
b2437.30	New Linden 345/230 kV transformer and any associated substation upgrades	PSEG (96.26%) / RE (3.74%)
b2437.33	New Bayonne 345/69 kV transformer and any associated substation upgrades	PSEG (100%)
b2438	Install two reactors at Tosco 230 kV	PSEG (100%)
b2439	Replace the Tosco 138 kV breaker 'CB1/2 (CBT)' with 63 kA	PSEG (100%)
b2474	Rebuild Athenia 138 kV to 80 kA	PSEG (100%)
b2589	Install a 100 MVAR 230 kV shunt reactor at Mercer station	PSEG (100%)
b2590	Install two 75 MVAR 230 kV capacitors at Sewaren station	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.3	Install an SVC at New Freedom 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)</p>
b2633.4	Add a new 500 kV bay at Hope Creek (Expansion of Hope Creek substation)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)</p>

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.5	Add a new 500/230 kV autotransformer at Hope Creek and a new Hope Creek 230 kV substation	AEC (8.01%) / BGE (1.94%) / DPL (12.99%) / JCPL (13.85%) / ME (5.88%) / NEPTUNE* (3.45%) / PECO (17.62%) / PPL (14.85%) / PSEG (20.79%) / RE (0.62%)
b2633.8	Implement high speed relaying utilizing OPGW on Salem – Orchard 500 kV, Hope Creek – New Freedom 500 kV, New Freedom - Salem 500 kV, Hope Creek – Salem 500 kV, and New Freedom – Orchard 500 kV lines	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)</p> <p><b>DFAX Allocation:</b>                      AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)</p>

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2633.91	Implement changes to the tap settings for the two Salem units' step up transformers	AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2633.92	Implement changes to the tap settings for the Hope Creek unit's step up transformers	AEC (0.01%) / DPL (99.98%) / JCPL (0.01%)
b2702	Install a 350 MVAR reactor at Roseland 500 kV	<b>Load-Ratio Share Allocation:</b> AEC (1.67%) / AEP (13.94%) / APS (5.64%) / ATSI (8.02%) / BGE (4.12%) / ComEd (13.46%) / Dayton (2.12%) / DEOK (3.37%) / DL (1.76%) / DPL (2.55%) / Dominion (12.97%) / EKPC (1.81%) / JCPL (3.92%) / ME (1.95%) / NEPTUNE* (0.24%) / OVEC (0.07%) / PECO (5.39%) / PENELEC (1.84%) / PEPCO (3.71%) / PPL (4.78%) / PSEG (6.40%) / RE (0.27%)
		<b>DFAX Allocation:</b> PSEG (100%)
b2703	Install a 100 MVAR reactor at Bergen 230 kV	PSEG (100%)
b2704	Install a 150 MVAR reactor at Essex 230 kV	PSEG (100%)
b2705	Install a 200 MVAR reactor (variable) at Bergen 345 kV	PSEG (100%)
b2706	Install a 200 MVAR reactor (variable) at Bayway 345 kV	PSEG (100%)
b2707	Install a 100 MVAR reactor at Bayonne 345 kV	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2712	Replace the Bergen 138 kV '40P' breaker with 80 kA breaker	PSEG (100%)
b2713	Replace the Bergen 138 kV '90P' breaker with 80 kA breaker	PSEG (100%)
b2722	Reconductor the 1 mile Bergen – Bergen GT 138 kV circuit (B-1302)	PSEG (100%)
b2755	Build a third 345 kV source into Newark Airport	PSEG (100%)
b2810.1	Install second 230/69 kV transformer at Cedar Grove	PSEG (100%)
b2810.2	Build a new 69 kV circuit from Cedar Grove to Great Notch	PSEG (100%)
b2811	Build 69 kV circuit from Locust Street to Delair	PSEG (100%)
b2812	Construct River Road to Tonnelle Avenue 69kV Circuit	PSEG (100%)
b2825.1	Install 2X50 MVAR shunt reactors at Kearny 230 kV substation	PSEG (100%)
b2825.2	Increase the size of the Hudson 230 kV, 2X50 MVAR shunt reactors to 2X100 MVAR	PSEG (100%)
b2825.3	Install 2X100 MVAR shunt reactors at Bayway 345 kV substation	PSEG (100%)
b2825.4	Install 2X100 MVAR shunt reactors at Linden 345 kV substation	PSEG (100%)
b2835	Convert the R-1318 and Q1317 (Edison – Metuchen) 138 kV circuits to one 230 kV circuit	See sub-IDs for cost allocations

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2835.1	Convert the R-1318 and Q-1317 (Edison – Metuchen) 138 kV circuits to one 230 kV circuit (Brunswick – Meadow Road)	AEC (30.19%) / PECO (69.81%)
b2835.2	Convert the R-1318 and Q-1317 (Edison - Metuchen) 138 kV circuits to one 230 kV circuit (Meadow Road - Pierson Ave)	AEC (30.21%) / PECO (69.79%)
b2835.3	Convert the R-1318 and Q-1317 (Edison - Metuchen) 138 kV circuits to one 230 kV circuit (Pierson Ave - Metuchen)	AEC (30.21%) / PECO (69.79%)
b2836	Convert the N-1340 and T-1372/D-1330 (Brunswick – Trenton) 138 kV circuits to 230 kV circuits	See sub-IDs for cost allocations
b2836.1	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Hunterglen)	AEC (100%)
b2836.2	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Hunterglen - Trenton)	AEC (49.19%) / NEPTUNE* (50.81%)
b2836.3	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Devils Brook)	PSEG (100%)
b2836.4	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Devils Brook - Trenton)	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2837	Convert the F-1358/Z-1326 and K1363/Y-1325 (Trenton – Burlington) 138 kV circuits to 230 kV circuits	See sub-IDs for cost allocations
b2837.1	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Trenton - Yardville K)	NEPTUNE* (100%)
b2837.2	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Yardville - Ward Ave K)	NEPTUNE* (8.89%) / PSEG (87.70%) / RE (3.41%)
b2837.3	Convert the N-1340 and T-1372/D-1330 (Brunswick - Trenton) 138 kV circuits to 230 kV circuits (Brunswick - Devils Brook)	NEPTUNE* (8.27%) / PSEG (88.30%) / RE (3.43%)
b2837.4	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Crosswicks - Bustleton Y)	NEPTUNE* (6.79%) / PSEG (89.73%) / RE (3.48%)
b2837.5	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Bustleton - Burlington Y)	NEPTUNE* (5.62%) / PSEG (90.85%) / RE (3.53%)
b2837.6	Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Trenton - Yardville F)	NEPTUNE* (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2837.7 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Yardville - Ward Ave F)		NEPTUNE* (100%)
b2837.8 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Ward Ave - Crosswicks Z)		NEPTUNE* (100%)
b2837.9 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Crosswicks - Williams Z)		NEPTUNE* (8.22%) / PSEG (88.35%) / RE (3.43%)
b2837.10 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Williams - Bustleton Z)		NEPTUNE* (6.71%) / PSEG (89.80%) / RE (3.49%)
b2837.11 Convert the F-1358/Z-1326 and K-1363/Y-1325 (Trenton - Burlington) 138 kV circuits to 230 kV circuits (Bustleton - Burlington Z)		NEPTUNE* (5.20%) / PSEG (91.26%) / RE (3.54%)
b2870 Build new 138/26 kV Newark GIS station in a building (layout #1A) located adjacent to the existing Newark Switch and demolish the existing Newark Switch		PSEG (100%)
b2933 Third Source for Springfield Rd. and Stanley Terrace Stations		See sub-IDs for cost allocations

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2933.1	Construct a 230/69 kV station at Springfield	PSEG (100%)
b2933.2	Construct a 230/69 kV station at Stanley Terrace	PSEG (100%)
b2933.31	Construct a 69 kV network between Front Street, Springfield and Stanley Terrace (Front Street - Springfield)	NEPTUNE* (100%)
b2933.32	Construct a 69 kV network between Front Street, Springfield and Stanley Terrace (Springfield – Stanley Terrace)	PSEG (100%)
b2934	Build a new 69 kV line between Hasbrouck Heights and Carlstadt	PSEG (100%)
b2935	Third Supply for Runnemede 69 kV and Woodbury 69 kV	PSEG (100%)
b2935.1	Build a new 230/69 kV switching substation at Hilltop utilizing the PSE&G property and the K-2237 230 kV line	PSEG (100%)
b2935.2	Build a new line between Hilltop and Woodbury 69 kV providing the 3rd supply	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2935.3	Convert Runnemedede’s straight bus to a ring bus and construct a 69 kV line from Hilltop to Runnemedede 69 kV	PSEG (100%)
b2955	Wreck and rebuild the VFT – Warinanco – Aldene 230 kV circuit with paired conductor	JCPL (91.73%) / NEPTUNE* (8.27%)
b2956	Replace existing cable on Cedar Grove - Jackson Rd. with 5000 kcmil XLPE cable	PSEG (100%)
b2982	Construct a 230/69 kV station at Hillsdale Substation and tie to Paramus and Dumont at 69 kV	PSEG (100%)
b2982.1	Install a 69 kV ring bus and one (1) 230/69 kV transformer at Hillsdale	PSEG (100%)
b2982.2	Construct a 69 kV network between Paramus, Dumont, and Hillsdale Substation using existing 69 kV circuits	PSEG (100%)
b2983	Convert Kuller Road to a 69/13 kV station	PSEG (100%)
b2983.1	Install 69 kV ring bus and two (2) 69/13 kV transformers at Kuller Road	PSEG (100%)
b2983.2	Construct a 69 kV network between Kuller Road, Passaic, Paterson, and Harvey (new Clifton area switching station)	PSEG (100%)
b2986	Replace the existing Roseland – Branchburg – Pleasant Valley 230 kV corridor with new structures	See sub-IDs for cost allocations

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2986.11	Roseland-Branchburg 230 kV corridor rebuild (Roseland - Readington)	PSEG (100%)
b2986.12	Roseland-Branchburg 230 kV corridor rebuild (Readington - Branchburg)	JCPL (100%)
b2986.21	Branchburg-Pleasant Valley 230 kV corridor rebuild (Branchburg - East Flemington)	PECO (100%)
b2986.22	Branchburg-Pleasant Valley 230 kV corridor rebuild (East Flemington - Pleasant Valley)	NEPTUNE* (0.77%) / PECO (99.23%)
b2986.23	Branchburg-Pleasant Valley 230 kV corridor rebuild (Pleasant Valley - Rocktown)	JCPL (31.39%) / NEPTUNE* (5.26%) / PECO (6.68%) / PSEG (54.43%) / RE (2.23%)
b2986.24	Branchburg-Pleasant Valley 230 kV corridor rebuild (the PSEG portion of Rocktown - Buckingham)	JCPL (37.95%) / NEPTUNE* (4.70%) / PECO (5.38%) / PSEG (49.92%) / RE (2.05%)
b3003	Construct a 230/69 kV station at Maywood	PSEG (100%)
b3003.1	Purchase properties at Maywood to accommodate new construction	PSEG (100%)
b3003.2	Extend Maywood 230 kV bus and install one (1) 230 kV breaker	PSEG (100%)
b3003.3	Install one (1) 230/69 kV transformer at Maywood	PSEG (100%)

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**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3003.4	Install Maywood 69 kV ring bus	PSEG (100%)
b3003.5	Construct a 69 kV network between Spring Valley Road, Hasbrouck Heights, and Maywood	PSEG (100%)
b3004	Construct a 230/69/13 kV station by tapping the Mercer – Kuser Rd 230 kV circuit	PSEG (100%)
b3004.1	Install a new Clinton 230 kV ring bus with one (1) 230/69 kV transformer Mercer - Kuser Rd 230 kV circuit	PSEG (100%)
b3004.2	Expand existing 69 kV ring bus at Clinton Ave with two (2) additional 69 kV breakers	PSEG (100%)
b3004.3	Install two (2) 69/13 kV transformers at Clinton Ave	PSEG (100%)
b3004.4	Install 18 MVAR capacitor bank at Clinton Ave 69 kV	PSEG (100%)
b3025	Construct two (2) new 69/13 kV stations in the Doremus area and relocate the Doremus load to the new stations	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3025.1	Install a new 69/13 kV station (Vauxhall) with a ring bus configuration	PSEG (100%)
b3025.2	Install a new 69/13 kV station (19th Ave) with a ring bus configuration	PSEG (100%)
b3025.3	Construct a 69 kV network between Stanley Terrace, Springfield Road, McCarter, Federal Square, and the two new stations (Vauxhall & 19th Ave)	PSEG (100%)
b3703	Construct a third 69 kV supply line from Penns Neck substation to West Windsor substation	PSEG (100%)
b3704	Replace the Lawrence switching station 230/69 kV Transformer No. 220-4 and its associated circuit switchers with a new larger capacity transformer with load tap changer (LTC) and new dead tank circuit breaker. Install a new 230 kV gas insulated breaker, associated disconnects, overhead bus and other necessary equipment to complete the bay within the Lawrence 230 kV switchyard	PSEG (100%)
b3705	Replace existing 230/138 kV Athenia Transformer No. 220-1	PSEG (100%)
b3706	Replace Fair Lawn 230/138 kV transformer No. 220-1 with an existing O&M system spare at Burlington	PSEG (100%)
b3716	Construct a third 69 kV supply line from Totowa substation to the customer's substation	PSEG (100%)

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3719	Replace the two existing 1200A Bergen 138 kV circuit switchers with two 138 kV disconnect switches to achieve a minimum summer normal device rating of 298 MVA and a minimum summer emergency rating of 454 MVA	PSEG (100%)
b3757	Convert existing Medford 69 kV straight bus to seven-breaker ring bus, construct a new 230/69 kV transformer at Cox's Corner station and a new 69 kV line from Cox's Corner station to Medford station	PSEG (100%)
b3800.7	Construct 38 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (BGE zone portion)	<p><b>Load-Ratio Share Allocation:</b>            AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>            APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)</p>

\*Neptune Regional Transmission System, LLC

**Public Service Electric and Gas Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.43	Construct 31.5 miles of 500 kV overhead AC line between the Conastone vicinity and the Doubs substations (APS Section)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPCO (10.59%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(14) Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2117	Reconductor 0.33 miles of the Parkersburg - Belpre line and upgrade Parkersburg terminal equipment	APS (100%)
b2118	Add 44 MVAR Cap at New Martinsville	APS (100%)
b2120	Six-Wire Lake Lynn - Lardin 138 kV circuits	APS (100%)
b2142	Replace Weirton 138 kV breaker “Wylie Ridge 210” with 63 kA breaker	APS (100%)
b2143	Replace Weirton 138 kV breaker “Wylie Ridge 216” with 63 kA breaker	APS (100%)
b2174.8	Replace relays at Mitchell substation	APS (100%)
b2174.9	Replace primary relay at Piney Fork substation	APS (100%)
b2174.10	Perform relay setting changes at Bethel Park substation	APS (100%)
b2213	Armstrong Substation: Relocate 138 kV controls from the generating station building to new control building	APS (100%)
b2214	Albright Substation: Install a new control building in the switchyard and relocate controls and SCADA equipment from the generating station building the new control center	APS (100%)
b2215	Rivesville Switching Station: Relocate controls and SCADA equipment from the generating station building to new control building	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2216	Willow Island: Install a new 138 kV cross bus at Belmont Substation and reconnect and reconfigure the 138 kV lines to facilitate removal of the equipment at Willow Island switching station	APS (100%)
b2235	130 MVAR reactor at Monocacy 230 kV	APS (100%)
b2260	Install a 32.4 MVAR capacitor at Bartonville	APS (100%)
b2261	Install a 33 MVAR capacitor at Damascus	APS (100%)
b2267	Replace 1000 Cu substation conductor and 1200 amp wave trap at Marlowe	APS (100%)
b2268	Reconductor 6.8 miles of 138kV 336 ACSR with 336 ACSS from Double Toll Gate to Riverton	APS (100%)
b2299	Reconductor from Collins Ferry - West Run 138 kV with 556 ACSS	APS (100%)
b2300	Reconductor from Lake Lynn - West Run 138 kV	APS (100%)
b2341	Install 39.6 MVAR Capacitor at Shaffers Corner 138 kV Substation	APS (100%)
b2342	Construct a new 138 kV switching station (Shuman Hill substation), which is next the Mobley 138 kV substation and install a 31.7 MVAR capacitor	APS (100%)
b2343	Install a 31.7 MVAR capacitor at West Union 138 kV substation	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2362	Install a 250 MVAR SVC at Squab Hollow 230 kV	APS (100%)
b2362.1	Install a 230 kV breaker at Squab Hollow 230 kV substation	APS (100%)
b2363	Convert the Shingletown 230 kV bus into a 6 breaker ring bus	APS (100%)
b2364	Install a new 230/138 kV transformer at Squab Hollow 230 kV substation. Loop the Forest - Elko 230 kV line into Squab Hollow. Loop the Brookville - Elko 138 kV line into Squab Hollow	APS (100%)
b2412	Install a 44 MVAR 138 kV capacitor at the Hempfield 138 kV substation	APS (100%)
b2433.1	Install breaker and a half 138 kV substation (Waldo Run) with 4 breakers to accommodate service to MarkWest Sherwood Facility including metering which is cut into Glen Falls Lamberton 138 kV line	APS (100%)
b2433.2	Install a 70 MVAR SVC at the new WaldoRun 138 kV substation	APS (100%)
b2433.3	Install two 31.7 MVAR capacitors at the new WaldoRun 138 kV substation	APS (100%)
b2424	Replace the Weirton 138 kV breaker 'WYLIE RID210' with 63 kA breakers	APS (100%)
b2425	Replace the Weirton 138 kV breaker 'WYLIE RID216' with 63 kA breakers	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2426	Replace the Oak Grove 138 kV breaker 'OG1' with 63 kA breakers	APS (100%)
b2427	Replace the Oak Grove 138 kV breaker 'OG2' with 63 kA breakers	APS (100%)
b2428	Replace the Oak Grove 138 kV breaker 'OG3' with 63 kA breakers	APS (100%)
b2429	Replace the Oak Grove 138 kV breaker 'OG4' with 63 kA breakers	APS (100%)
b2430	Replace the Oak Grove 138 kV breaker 'OG5' with 63 kA breakers	APS (100%)
b2431	Replace the Oak Grove 138 kV breaker 'OG6' with 63 kA breakers	APS (100%)
b2432	Replace the Ridgeley 138 kV breaker 'RC1' with a 40 kA rated breaker	APS (100%)
b2440	Replace the Cabot 138kV breaker 'C9-KISKI VLY' with 63kA	APS (100%)
b2472	Replace the Ringgold 138 kV breaker 'RCM1' with 40kA breakers	APS (100%)
b2473	Replace the Ringgold 138 kV breaker '#4 XMFR' with 40kA breakers	APS (100%)
b2475	Construct a new line between Oak Mound 138 kV substation and Waldo Run 138 kV substation	APS (100%)
b2545.1	Construct a new 138 kV substation (Shuman Hill substation) connected to the Fairview –Willow Island (84) 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2545.2	Install a ring bus station with five active positions and two 52.8 MVAR capacitors with 0.941 mH reactors	APS (100%)
b2545.3	Install a +90/-30 MVAR SVC protected by a 138 kV breaker	APS (100%)
b2545.4	Remove the 31.7 MVAR capacitor bank at Mobley 138 kV	APS (100%)
b2546	Install a 51.8 MVAR (rated) 138 kV capacitor at Nyswaner 138 kV substation	APS (100%)
b2547.1	Construct a new 138 kV six breaker ring bus Hillman substation	APS (100%)
b2547.2	Loop Smith- Imperial 138 kV line into the new Hillman substation	APS (100%)
b2547.3	Install +125/-75 MVAR SVC at Hillman substation	APS (100%)
b2547.4	Install two 31.7 MVAR 138 kV capacitors	APS (100%)
b2548	Eliminate clearance de-rate on Wylie Ridge – Smith 138 kV line and upgrade terminals at Smith 138 kV, new line ratings 294 MVA (Rate A)/350 MVA (Rate B)	APS (100%)
b2612.1	Relocate All Dam 6 138 kV line and the 138 kV line to AE units 1&2	APS (100%)
b2612.2	Install 138 kV, 3000A bus-tie breaker in the open bus-tie position next to the Shaffers corner 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2612.3	Install a 6-pole manual switch, foundation, control cable, and all associated facilities	APS (100%)
b2666	Yukon 138 kV Breaker Replacement	APS (100%)
b2666.1	Replace Yukon 138 kV breaker “Y-11(CHARL1)” with an 80 kA breaker	APS (100%)
b2666.2	Replace Yukon 138 kV breaker “Y-13(BETHEL)” with an 80 kA breaker	APS (100%)
b2666.3	Replace Yukon 138 kV breaker “Y-18(CHARL2)” with an 80 kA breaker	APS (100%)
b2666.4	Replace Yukon 138 kV breaker “Y-19(CHARL2)” with an 80 kA breaker	APS (100%)
b2666.5	Replace Yukon 138 kV breaker “Y-4(4B-2BUS)” with an 80 kA breaker	APS (100%)
b2666.6	Replace Yukon 138 kV breaker “Y-5(LAYTON)” with an 80 kA breaker	APS (100%)
b2666.7	Replace Yukon 138 kV breaker “Y-8(HUNTING)” with an 80 kA breaker	APS (100%)
b2666.8	Replace Yukon 138 kV breaker “Y-9(SPRINGD)” with an 80 kA breaker	APS (100%)
b2666.9	Replace Yukon 138 kV breaker “Y-10(CHRL-SP)” with an 80 kA breaker	APS (100%)
b2666.10	Replace Yukon 138 kV breaker “Y-12(1-1BUS)” with an 80 kA breaker	APS (100%)
b2666.11	Replace Yukon 138 kV breaker “Y-14(4-1BUS)” with an 80 kA breaker	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2666.12	Replace Yukon 138 kV breaker “Y-2(1B-BETHE)” with an 80 kA breaker	APS (100%)
b2666.13	Replace Yukon 138 kV breaker “Y-21(SHEPJ)” with an 80 kA breaker	APS (100%)
b2666.14	Replace Yukon 138 kV breaker “Y-22(SHEPHJT)” with an 80 kA breaker	APS (100%)
b2672	Change CT Ratio at Seneca Caverns from 120/1 to 160/1 and adjust relay settings accordingly	APS (100%)
b2688.3	Carroll Substation: Replace the Germantown 138 kV wave trap, upgrade the bus conductor and adjust CT ratios	AEP (12.91%) / APS (19.04%) / ATSI (1.24%) / ComEd (0.35%) / Dayton (1.45%) / DEOK (2.30%) / DL (1.11%) / Dominion (44.85%) / EKPC (0.78%) / PEPCO (15.85%) / RECO (0.12%)
b2689.3	Upgrade terminal equipment at structure 27A	APS (100%)
b2696	Upgrade 138 kV substation equipment at Butler, Shanor Manor and Krendale substations. New rating of line will be 353 MVA summer normal/422 MVA emergency	APS (100%)
b2700	Remove existing Black Oak SPS	APS (100%)
b2743.6	Reconfigure the Ringgold 230 kV substation to double bus double breaker scheme	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.6.1	Replace the two Ringgold 230/138 kV transformers	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2743.7	Rebuild/Reconductor the Ringgold – Catoctin 138 kV circuit and upgrade terminal equipment on both ends	AEP (6.46%) / APS (8.74%) / BGE (19.74%) / ComEd (2.16%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.95%) / EKPC (0.45%) / PEPCO (20.88%)
b2747.1	Relocate the FirstEnergy Pratts 138 kV terminal CVTs at Gordonsville substation to allow for the installation of a new motor operated switch being installed by Dominion	APS (100%)
b2763	Replace the breaker risers and wave trap at Bredinville 138 kV substation on the Cabrey Junction 138 kV terminal	APS (100%)
b2764	Upgrade Fairview 138 kV breaker risers and disconnect leads; Replace 500 CU breaker risers and 556 ACSR disconnect leads with 795 ACSR	APS (100%)
b2964.1	Replace terminal equipment at Pruntytown and Glen Falls 138 kV station	APS (100%)
b2964.2	Reconductor approximately 8.3 miles of the McAlpin - White Hall Junction 138 kV circuit	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2965	Reconductor the Charleroi – Allenport 138 kV line with 954 ACSR conductor. Replace breaker risers at Charleroi and Allenport	APS (37.15%) / DL (62.85%)
b2966	Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV line with 795 ACSS conductor. Replace Line Disconnect Switch at Yukon	APS (100%)
b2966.1	Reconductor the Yukon - Smithton - Shepler Hill Jct 138 kV line and replace terminal equipment as necessary to achieve required rating	APS (100%)
b2967	Convert the existing 6 wire Butler - Shanor Manor - Krendale 138 kV line into two separate 138 kV lines. New lines will be Butler - Keisters and Butler - Shanor Manor - Krendale 138 kV	APS (100%)
b2970	Ringgold – Catoctin Solution	APS (100%)
b2970.1	Install two new 230 kV positions at Ringgold for 230/138 kV transformers	APS (100%)
b2970.2	Install new 230 kV position for Ringgold – Catoctin 230 kV line	APS (100%)
b2970.3	Install one new 230 kV breaker at Catoctin substation	APS (100%)
b2970.4	Install new 230/138 kV transformer at Catoctin substation. Convert Ringgold – Catoctin 138 kV line to 230 kV operation	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2970.5	Convert Garfield 138/12.5 kV substation to 230/12.5 kV	APS (100%)
b2996	Construct new Flint Run 500/138 kV substation	See sub-IDs for cost allocations
b2996.1	Construct a new 500/138 kV substation as a 4-breaker ring bus with expansion plans for double-breaker-double-bus on the 500 kV bus and breaker-and-a-half on the 138 kV bus to provide EHV source to the Marcellus shale load growth area. Projected load growth of additional 160 MVA to current plan of 280 MVA, for a total load of 440 MVA served from Waldo Run substation. Construct additional 3-breaker string at Waldo Run 138 kV bus. Relocate the Sherwood #2 line terminal to the new string. Construct two single circuit Flint Run - Waldo Run 138 kV lines using 795 ACSR (approximately 3 miles). After terminal relocation on new 3-breaker string at Waldo Run, terminate new Flint Run 138 kV lines onto the two open terminals	APS (100%)
b2996.2	Loop the Belmont – Harrison 500 kV line into and out of the new Flint Run 500 kV substation (less than 1 mile). Replace primary relaying and carrier sets on Belmont and Harrison 500 kV remote end substations	APS (100%)
b2996.3	Upgrade two (2) existing 138 kV breakers (Rider 50 and #1/4 transformer breaker) at Glen Falls with 63 kA 3000A units	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3005	Reconductor 3.1 mile 556 ACSR portion of Cabot to Butler 138 kV with 556 ACSS and upgrade terminal equipment. 3.1 miles of line will be reconducted for this project. The total length of the line is 7.75 miles	APS (100%)
b3006	Replace four Yukon 500/138 kV transformers with three transformers with higher rating and reconfigure 500 kV bus	APS (63.21%) / DL (36.79%)
b3007.1	Reconductor the Blairsville East to Social Hall 138 kV line and upgrade terminal equipment - AP portion. 4.8 miles total. The new conductor will be 636 ACSS replacing the existing 636 ACSR conductor. At Social Hall, meters, relays, bus conductor, a wave trap, circuit breaker and disconnects will be replaced	APS (100%)
b3010	Replace terminal equipment at Keystone and Cabot 500 kV buses. At Keystone, bus tubing and conductor, a wave trap, and meter will be replaced. At Cabot, a wave trap and bus conductor will be replaced	APS (100%)
b3011.1	Construct new Route 51 substation and connect 10 138 kV lines to new substation	DL (100%)
b3011.2	Upgrade terminal equipment at Yukon to increase rating on Yukon to Charleroi #2 138 kV line (New Yukon to Route 51 #4 138 kV line)	APS (22.82%) / DL (77.18%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3011.3	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #1 138 kV line		DL (100%)
b3011.4	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #2 138 kV line		DL (100%)
b3011.5	Upgrade terminal equipment at Yukon to increase rating on Yukon to Route 51 #3 138 kV line		APS (22.82%) / DL (77.18%)
b3011.6	Upgrade remote end relays for Yukon – Allenport – Iron Bridge 138 kV line		DL (100%)
b3012.1	Construct two new 138 kV ties with the single structure from APS’s new substation to Duquesne’s new substation. The estimated line length is approximately 4.7 miles. The line is planned to use multiple ACSS conductors per phase		ATSI (38.21%) / DL (61.79%)
b3012.3	Construct a new Elrama – Route 51 138 kV No.3 line: reconductor 4.7 miles of the existing line, and construct 1.5 miles of a new line to the reconducted portion. Install a new line terminal at APS Route 51 substation		DL (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3013	Reconductor Vasco Tap to Edgewater Tap 138 kV line. 4.4 miles. The new conductor will be 336 ACSS replacing the existing 336 ACSR conductor	APS (100%)
b3015.6	Reconductor Elrama to Mitchell 138 kV line – AP portion. 4.2 miles total. 2x 795 ACSS/TW 20/7	DL (100%)
b3015.8	Upgrade terminal equipment at Mitchell for Mitchell – Elrama 138 kV line	APS (100%)
b3028	Upgrade substation disconnect leads at William 138 kV substation	APS (100%)
b3051.1	Ronceverte cap bank and terminal upgrades	APS (100%)
b3052	Install a 138 kV capacitor (29.7 MVAR effective) at West Winchester 138 kV	APS (100%)
b3064.3	Upgrade line relaying at Piney Fork and Bethel Park for Piney For – Elrama 138 kV line and Bethel Park – Elrama 138 kV	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3068	Reconductor the Yukon – Westraver 138 kV line (2.8 miles), replace the line drops and relays at Yukon 138 kV and replace switches at Westraver 138 kV bus	APS (100%)
b3069	Reconductor the Westraver – Route 51 138 kV line (5.63 miles) and replace line switches at Westraver 138 kV bus	APS (100%)
b3070	Reconductor the Yukon – Route 51 #1 138 kV line (8 miles), replace the line drops, relays and line disconnect switch at Yukon 138 kV bus	APS (100%)
b3071	Reconductor the Yukon – Route 51 #2 138 kV line (8 miles) and replace relays at Yukon 138 kV bus	APS (100%)
b3072	Reconductor the Yukon – Route 51 #3 138 kV line (8 miles) and replace relays at Yukon 138 kV bus	APS (100%)
b3074	Reconductor the 138 kV bus at Armstrong substation	APS (100%)
b3075	Replace the 500/138 kV transformer breaker and reconductor 138 kV bus at Cabot substation	APS (100%)
b3076	Reconductor the Edgewater – Loyalhanna 138 kV line (0.67 mile)	APS (100%)
b3079	Replace the Wylie Ridge 500/345 kV transformer #7	ATSI (72.30%) / DL (27.70%)
b3083	Reconductor the 138 kV bus at Butler and reconductor the 138 kV bus and replace line trap at Karns City	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3128	Relocate 34.5 kV lines from generating station roof R. Paul Smith 138 kV station	APS (100%)
b3214.1	Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV Line. Upgrade terminal equipment at Yukon and replace line relaying at Mitchell and Charleroi	APS (12.21%) / DL (87.79%)
b3214.2	Reconductor the Smithton – Shepler Hill Jct 138 kV Line	APS (4.74%) / DL (95.26%)
b3230	At Enon substation install a second 138 kV, 28.8 MVAR nameplate, capacitor and the associated 138 kV capacitor switcher	APS (100%)
b3240	Upgrade Cherry Run and Morgan terminals to make the transmission line the limiting component	APS (100%)
b3241	Install 138 kV, 36 MVAR capacitor and a 5 uF reactor protected by a 138 kV capacitor switcher. Install a breaker on the 138 kV Junction terminal. Install a 138 kV 3.5 uF reactor on the existing Hardy 138 kV capacitor	APS (100%)
b3242	Reconfigure Stonewall 138 kV substation from its current configuration to a six-breaker, breaker-and-a-half layout and add two (2) 36 MVAR capacitors with capacitor switchers	APS (100%)
b3318	Reconductor the Shanor Manor - Butler 138 kV line with an upgraded circuit breaker at Butler 138 kV station	APS (100%)
b3325	Reconductor the Charleroi - Union 138 kV line and upgrade terminal equipment at Charleroi 138 kV station	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3681	Upgrade the Shingletown #82 230/46 kV Transformer circuit by installing a 230 kV breaker and disconnect switches, removing existing 230 kV switches, replacing 46 kV disconnect switches, replacing limiting substation conductor, and installing/replacing relays	APS (100%)
b3683	Reconductor the existing 556.5 ACSR line segments on the Messick Road – Ridgeley 138 kV line with 954 45/7 ACSR to achieve 308/376 MVA SN/SE and 349/445 MVA WN/WE ratings. Replace the remote end equipment for the line. The total length of the line is 5.02 miles	APS (100%)
b3701	Replace terminal equipment at French's Mill and Junction 138 kV substations	APS (100%)
b3710	Reconductor AA2-161 to Yukon 138 kV Lines #1 and #2 with 954 ACSS conductor	APS (100%)
b3738	Replace limiting terminal equipment on Charleroi – Dry Run 138 kV line	APS (100%)
b3739	Replace limiting terminal equipment on Dry Run – Mitchell 138 kV line	APS (100%)
b3740	Replace limiting terminal equipment on Glen Falls – Bridgeport 138 kV line	APS (100%)
b3741	Replace limiting terminal equipment on Yukon - Charleroi #1 138 kV line	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3742	Replace limiting terminal equipment on Yukon - Charleroi #2 138 kV line		APS (100%)
b3743	At Bedington substation: Replace substation conductor, wave trap, Current Transformers (CT's) and upgrade relaying At Cherry Run substation: Replace substation conductor, wave trap, CT's, disconnect switches, circuit breaker and upgrade relaying At Marlowe substation: Replace substation conductor, wave trap, CT's and upgrade relaying		APS (100%)
b3744	Replace one span of 1272 ACSR from Krendale substation to structure 35 (approximately 630 feet) Replace one span of 1272 ACSR from Shanor Manor to structure 21 (approximately 148 feet) Replace 1272 ACSR risers at Krendale and Shanor Manor substations Replace 1272 ACSR substation conductor at Krendale substation Replace relaying at Krendale substation Revise relay settings at Butler and Shanor Manor substations		APS (100%)
b3745	Install redundant relaying at Carbon Center 230 kV substation		APS (100%)
b3746	Install redundant relaying at Meadow Brook 500 kV substation		APS (100%)
b3747	Install redundant relaying at Bedington 500 kV substation		APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3761	Install 138 kV breaker on the Ridgway 138/46 kV #2 Transformer		APS (100%)
b3772	Reconductor 27.3 miles of the Messick Road – Morgan 138 kV line from 556 ACSR to 954 ACSR. At Messick Road substation, replace 138 kV wave trap, circuit breaker, CT's, disconnect switch, and substation conductor and upgrade relaying. At Morgan substation, upgrade relaying		APS (100%)
b3773	Install 33 MVAR switched capacitor, 138 kV breaker, and associated relaying at McConnellsburg 138 kV substation		APS (100%)
b3717.3	Relay work at Springdale 138 kV station		APS (100%)
b3717.4	Transmission line work – a new transmission structure and necessary tower work to handle the change in tension at Cheswick 138 kV station		APS (100%)
b3781	Replace line drops to Doubs Transformer 3. New transformer rating: 721 MVA SN / 862 MVA SE		APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.8	Reconfigure Doubs 500 kV station and upgrade terminal equipment to new line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.16%) / BGE (0.79%) / Dominion (74.28%) / DPL (0.41%) / PECO (0.77%) / PEPSCO (10.59%)</p>
b3800.9	Rebuild the existing Hunterstown - Carroll 115/138 kV Corridor as double circuit using 230 kV construction standards. New circuit will be operated at 230 kV. Existing circuit to remain at 115/138 kV	This upgrade ID is only for tracking purpose. Cost allocation details are available from b3800.10 ~ b3800.18

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.13	Rebuild the Germantown - Carroll 138 kV line to 230 kV double circuit construction (APS - PE Section)	APS (82.49%) / ME (17.51%)
b3800.15	Construct new 230 kV Hunterstown - Carroll line (APS - PE Section)	APS (99.86%) / ME (0.14%)
b3800.16	Expand Carroll 230 kV substation to ring bus	APS (99.86%) / ME (0.14%)
b3800.17	Network upgrade at Carroll 230 kV substation	APS (99.86%) / ME (0.14%)
b3800.20	Fayetteville - Grand Point 138 kV - Replace line trap at Grand Point 138 kV station	APS (100%)
b3800.21	Reid - Ringgold 138 kV line - Replace line trap, substation conductor, breaker, relaying and CTs at Ringgold station	APS (100%)
b3800.25	Taneytown 138 kV substation terminal upgrade	APS (100%)

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.101	502 Junction substation two 500 kV circuit breaker expansion	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.103	Rebuild approximately 16 miles of the Gore - Stonewall 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPSCO (12.68%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.104	Rebuild approximately 15 miles of the Stonewall - Millville 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.105	Rebuild approximately 6 miles of the Millville - Doubs 138 kV line with 500 kV overbuild (502 Junction to Woodside 500 kV line section)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</p>
b3800.111	Construct the Woodside - Stonewall 138 kV No. 1 line	APS (100%)
b3800.112	Construct the Woodside - Stonewall 138 kV No. 2 line	APS (100%)
b3800.114	Stonewall 138 kV substation two 138 kV breaker expansion	APS (100%)

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**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.116	Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation (FE Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.122	Rebuild 500 kV line No. 514 from Doubs - Goose Creek 500 kV line. The Doubs - Goose Creek 500 kV line will be rebuilt and the Doubs - Dickerson 230 kV will be relocated and underbuilt on the same structure	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.123	<p>Doubs substation work - Re-terminate the rebuilt Doubs - Goose Creek 500 kV line in its existing bay, terminate the new Doubs - Aspen 500 kV line in the open bay at Doubs, Replace three 500 kV breakers, Replace 500 kV terminal equipment including disconnect switches, CTs and substation conductor &amp; Replace relaying (APS Portion)</p>	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</p>

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.124	New Doubs to Aspen 500 kV line (APS Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</p>
b3800.125	Rebuild the Doubs - Dickerson 230 kV line. This will be underbuilt on the new Doubs - Goose Creek 500 kV line (APS Portion)	PEPCO (100%)
b3800.126	Rebuild the Doubs - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line (APS Portion)	PEPCO (100%)

\*Neptune Regional Transmission System, LLC

**Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3800.127	Rebuild the Dickerson - Aqueduct 230 kV line. This will be underbuilt on the new Doubs - Aspen 500 kV line (APS Portion)		PEPCO (100%)
b3800.413	Replace Double Toll Gate 138 kV breaker MDT 138 OCB with a breaker rated 40 kA		APS (100%)
b3800.414	Replace Doubs 500 kV breaker DL-55 522LIN with a breaker rated 60 kA		APS (100%)

**SCHEDULE 12 – APPENDIX A**

- (17) American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1570.4	Add a 345 kV breaker at Marysville station and a 0.1 mile 345 kV line extension from Marysville to the new 345/69 kV Dayton transformer	AEP (100%)
b1660.1	Cloverdale: install 6-765 kV breakers, incremental work for 2 additional breakers, reconfigure and relocate miscellaneous facilities, establish 500 kV station and 500 kV tie with 765 kV station	<b>Load-Ratio Share Allocation:</b> AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)
		<b>DFAX Allocation:</b> AEP (0.10%) / BGE (43.26%) / DEOK (0.10%) / EKPC (0.06%) / PEPCO (56.48%)

\*Neptune Regional Transmission System, LLC

**American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1797.1	Reconductor the AEP portion of the Cloverdale - Lexington 500 kV line with 2-1780 ACSS	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP ( 0.28%) / ATSI (0.18%) / BGE (43.01%) / Dayton (0.07%) / DEOK (0.17%) / EKPC (0.10%) / PEPCO (56.19%)</p>
b2055	Upgrade relay at Brues station	AEP (100%)
b2122.3	Upgrade terminal equipment at Howard on the Howard - Brookside 138 kV line to achieve ratings of 252/291 (SN/SE)	AEP (100%)
b2122.4	Perform a sag study on the Howard - Brookside 138 kV line	AEP (100%)
b2229	Install a 300 MVAR reactor at Dequine 345 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2230	Replace existing 150 MVAR reactor at Amos 765 kV substation on Amos - N. Proctorville - Hanging Rock with 300 MVAR reactor	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>
b2231	Install 765 kV reactor breaker at Dumont 765 kV substation on the Dumont - Wilton Center line	AEP (100%)
b2232	Install 765 kV reactor breaker at Marysville 765 kV substation on the Marysville - Maliszewski line	AEP (100%)
b2233	Change transformer tap settings for the Baker 765/345 kV transformer	AEP (100%)
b2252	Loop the North Muskingum - Crooksville 138 kV line into AEP's Philo 138 kV station which lies approximately 0.4 miles from the line	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2253	Install an 86.4 MVAR capacitor bank at Gorsuch 138 kV station in Ohio	AEP (100%)
b2254	Rebuild approximately 4.9 miles of Corner - Degussa 138 kV line in Ohio	AEP (100%)
b2255	Rebuild approximately 2.8 miles of Maliszewski - Polaris 138 kV line in Ohio	AEP (100%)
b2256	Upgrade approximately 36 miles of 138 kV through path facilities between Harrison 138 kV station and Ross 138 kV station in Ohio	AEP (100%)
b2257	Rebuild the Pokagon - Corey 69 kV line as a double circuit 138 kV line with one side at 69 kV and the other side as an express circuit between Pokagon and Corey stations	AEP (100%)
b2258	Rebuild 1.41 miles of #2 CU 46 kV line between Tams Mountain - Slab Fork to 138 kV standards. The line will be strung with 1033 ACSR	AEP (100%)
b2259	Install a new 138/69 kV transformer at George Washington 138/69 kV substation to provide support to the 69 kV system in the area	AEP (100%)

**American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2286	Rebuild 4.7 miles of Muskingum River - Wolf Creek 138 kV line and remove the 138/138 kV transformer at Wolf Creek Station		AEP (100%)
b2287	Loop in the Meadow Lake - Olive 345 kV circuit into Reynolds 765/345 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2344.1	Establish a new 138/12 kV station, transfer and consolidate load from its Nicholasville and Marcellus 34.5 kV stations at this new station	AEP (100%)
b2344.2	Tap the Hydramatic – Valley 138 kV circuit (~ structure 415), build a new 138 kV line (~3.75 miles) to this new station	AEP (100%)
b2344.3	From this station, construct a new 138 kV line (~1.95 miles) to REA’s Marcellus station	AEP (100%)
b2344.4	From REA’s Marcellus station construct new 138 kV line (~2.35 miles) to a tap point on Valley – Hydramatic 138 kV ckt (~structure 434)	AEP (100%)
b2344.5	Retire sections of the 138 kV line in between structure 415 and 434 (~ 2.65 miles)	AEP (100%)
b2344.6	Retire AEP’s Marcellus 34.5/12 kV and Nicholasville 34.5/12 kV stations and also the Marcellus – Valley 34.5 kV line	AEP (100%)
b2345.1	Construct a new 69 kV line from Hartford to Keeler (~8 miles)	AEP (100%)
b2345.2	Rebuild the 34.5 kV lines between Keeler - Sister Lakes and Glenwood tap switch to 69 kV (~12 miles)	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2345.3	Implement in - out at Keeler and Sister Lakes 34.5 kV stations	AEP (100%)
b2345.4	Retire Glenwood tap switch and construct a new Rothadew station. These new lines will continue to operate at 34.5 kV	AEP (100%)
b2346	Perform a sag study for Howard - North Bellville - Millwood 138 kV line including terminal equipment upgrades	AEP (100%)
b2347	Replace the North Delphos 600A switch. Rebuild approximately 18.7 miles of 138 kV line North Delphos - S073. Reconductor the line and replace the existing tower structures	AEP (100%)
b2348	Construct a new 138 kV line from Richlands Station to intersect with the Hales Branch - Grassy Creek 138 kV circuit	AEP (100%)
b2374	Change the existing CT ratios of the existing equipment along Bearskin - Smith Mountain 138kV circuit	AEP (100%)
b2375	Change the existing CT ratios of the existing equipment along East Danville-Banister 138kV circuit	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2376	Replace the Turner 138 kV breaker 'D'	AEP (100%)
b2377	Replace the North Newark 138 kV breaker 'P'	AEP (100%)
b2378	Replace the Sporn 345 kV breaker 'DD'	AEP (100%)
b2379	Replace the Sporn 345 kV breaker 'DD2'	AEP (100%)
b2380	Replace the Muskingum 345 kV breaker 'SE'	AEP (100%)
b2381	Replace the East Lima 138 kV breaker 'E1'	AEP (100%)
b2382	Replace the Delco 138 kV breaker 'R'	AEP (100%)
b2383	Replace the Sporn 345 kV breaker 'AA2'	AEP (100%)
b2384	Replace the Sporn 345 kV breaker 'CC'	AEP (100%)
b2385	Replace the Sporn 345 kV breaker 'CC2'	AEP (100%)
b2386	Replace the Astor 138 kV breaker '102'	AEP (100%)
b2387	Replace the Muskingum 345 kV breaker 'SH'	AEP (100%)
b2388	Replace the Muskingum 345 kV breaker 'SI'	AEP (100%)
b2389	Replace the Hyatt 138 kV breaker '105N'	AEP (100%)
b2390	Replace the Muskingum 345 kV breaker 'SG'	AEP (100%)
b2391	Replace the Hyatt 138 kV breaker '101C'	AEP (100%)
b2392	Replace the Hyatt 138 kV breaker '104N'	AEP (100%)
b2393	Replace the Hyatt 138 kV breaker '104S'	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2394	Replace the Sporn 345 kV breaker 'CC1'	AEP (100%)
b2409	Install two 56.4 MVAR capacitor banks at the Melmore 138 kV station in Ohio	AEP (100%)
b2410	Convert Hogan Mullin 34.5 kV line to 138 kV, establish 138 kV line between Jones Creek and Strawton, rebuild existing Mullin Elwood 34.5 kV and terminate line into Strawton station, retire Mullin station	AEP (100%)
b2411	Rebuild the 3/0 ACSR portion of the Hadley - Kroemer Tap 69 kV line utilizing 795 ACSR conductor	AEP (100%)
b2423	Install a 300 MVAR shunt reactor at AEP's Wyoming 765 kV station	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>  AEP (100%)</p>

\*Neptune Regional Transmission System, LLC

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2444	Willow - Eureka 138 kV line: Reconductor 0.26 mile of 4/0 CU with 336 ACSS		AEP (100%)
b2445	Complete a sag study of Tidd - Mahans Lake 138 kV line		AEP (100%)
b2449	Rebuild the 7-mile 345 kV line between Meadow Lake and Reynolds 345 kV stations		AEP (100%)
b2462	Add two 138 kV circuit breakers at Fremont station to fix tower contingency '408 2'		AEP (100%)
b2501	Construct a new 138/69 kV Yager station by tapping 2-138 kV FE circuits (Nottingham-Cloverdale, Nottingham-Harmon)		AEP (100%)
b2501.2	Build a new 138 kV line from new Yager station to Azalea station		AEP (100%)
b2501.3	Close the 138 kV loop back into Yager 138 kV by converting part of local 69 kV facilities to 138 kV		AEP (100%)
b2501.4	Build 2 new 69 kV exits to reinforce 69 kV facilities and upgrade conductor between Irish Run 69 kV Switch and Bowerstown 69 kV Switch		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2502.1	Construct new 138 kV switching station Nottingham tapping 6-138 kV FE circuits (Holloway-Brookside, Holloway-Harmon #1 and #2, Holloway-Reeds, Holloway-New Stacy, Holloway-Cloverdale). Exit a 138 kV circuit from new station to Freebyrd station	AEP (100%)
b2502.2	Convert Freebyrd 69 kV to 138 kV	AEP (100%)
b2502.3	Rebuild/convert Freebyrd-South Cadiz 69 kV circuit to 138 kV	AEP (100%)
b2502.4	Upgrade South Cadiz to 138 kV breaker and a half	AEP (100%)
b2530	Replace the Sporn 138 kV breaker 'G1' with 80 kA breaker	AEP (100%)
b2531	Replace the Sporn 138 kV breaker 'D' with 80 kA breaker	AEP (100%)
b2532	Replace the Sporn 138 kV breaker 'O1' with 80 kA breaker	AEP (100%)
b2533	Replace the Sporn 138 kV breaker 'P2' with 80 kA breaker	AEP (100%)
b2534	Replace the Sporn 138 kV breaker 'U' with 80 kA breaker	AEP (100%)
b2535	Replace the Sporn 138 kV breaker 'O' with 80 kA breaker	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2536	Replace the Sporn 138 kV breaker 'O2' with 80 kA breaker		AEP (100%)
b2537	Replace the Robinson Park 138 kV breakers A1, A2, B1, B2, C1, C2, D1, D2, E1, E2, and F1 with 63 kA breakers		AEP (100%)
b2555	Reconductor 0.5 miles Tiltonsville – Windsor 138 kV and string the vacant side of the 4.5 mile section using 556 ACSR in a six wire configuration		AEP (100%)
b2556	Install two 138 kV prop structures to increase the maximum operating temperature of the Clinch River- Clinch Field 138 kV line		AEP (100%)
b2581	Temporary operating procedure for delay of upgrade b1464. Open the Corner 138 kV circuit breaker 86 for an overload of the Corner – Washington MP 138 kV line. The tower contingency loss of Belmont – Trissler 138 kV and Belmont – Edgelawn 138 kV should be added to Operational contingency		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2591	Construct a new 69 kV line approximately 2.5 miles from Colfax to Drewry's. Construct a new Drewry's station and install a new circuit breaker at Colfax station.		AEP (100%)
b2592	Rebuild existing East Coshocton – North Coshocton double circuit line which contains Newcomerstown – N. Coshocton 34.5 kV Circuit and Coshocton – North Coshocton 69 kV circuit		AEP (100%)
b2593	Rebuild existing West Bellaire – Glencoe 69 kV line with 138 kV & 69 kV circuits and install 138/69 kV transformer at Glencoe Switch		AEP (100%)
b2594	Rebuild 1.0 mile of Brantley – Bridge Street 69 kV Line with 1033 ACSR overhead conductor		AEP (100%)
b2595.1	Rebuild 7.82 mile Elkhorn City – Haysi S.S 69 kV line utilizing 1033 ACSR built to 138 kV standards		AEP (100%)
b2595.2	Rebuild 5.18 mile Moss – Haysi SS 69 kV line utilizing 1033 ACSR built to 138 kV standards		AEP (100%)
b2596	Move load from the 34.5 kV bus to the 138 kV bus by installing a new 138/12 kV XF at New Carlisle station in Indiana		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2597	Rebuild approximately 1 mi. section of Dragoon-Virgil Street 34.5 kV line between Dragoon and Dodge Tap switch and replace Dodge switch MOAB to increase thermal capability of Dragoon-Dodge Tap branch		AEP (100%)
b2598	Rebuild approximately 1 mile section of the Kline-Virgil Street 34.5 kV line between Kline and Virgil Street tap. Replace MOAB switches at Beiger, risers at Kline, switches and bus at Virgil Street		AEP (100%)
b2599	Rebuild approximately 0.1 miles of 69 kV line between Albion and Albion tap		AEP (100%)
b2600	Rebuild Fremont – Pound line as 138 kV		AEP (100%)
b2601	Fremont Station Improvements		AEP (100%)
b2601.1	Replace MOAB towards Beaver Creek with 138 kV breaker		AEP (100%)
b2601.2	Replace MOAB towards Clinch River with 138 kV breaker		AEP (100%)
b2601.3	Replace 138 kV Breaker A with new bus-tie breaker		AEP (100%)
b2601.4	Re-use Breaker A as high side protection on transformer #1		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2601.5	Install two (2) circuit switchers on high side of transformers # 2 and 3 at Fremont Station		AEP (100%)
b2602.1	Install 138 kV breaker E2 at North Proctorville		AEP (100%)
b2602.2	Construct 2.5 Miles of 138 kV 1033 ACSR from East Huntington to Darrah 138 kV substations		AEP (100%)
b2602.3	Install breaker on new line exit at Darrah towards East Huntington		AEP (100%)
b2602.4	Install 138 kV breaker on new line at East Huntington towards Darrah		AEP (100%)
b2602.5	Install 138 kV breaker at East Huntington towards North Proctorville		AEP (100%)
b2603	Boone Area Improvements		AEP (100%)
b2603.1	Purchase approximately a 200X300 station site near Slaughter Creek 46 kV station (Wilbur Station)		AEP (100%)
b2603.2	Install 3 138 kV circuit breakers, Cabin Creek to Hernshaw 138 kV circuit		AEP (100%)
b2603.3	Construct 1 mi. of double circuit 138 kV line on Wilbur – Boone 46 kV line with 1590 ACSS 54/19 conductor @ 482 Degree design temp. and 1-159 12/7 ACSR and one 86 Sq.MM. 0.646” OPGW Static wires		AEP (100%)
b2604	Bellefonte Transformer Addition		AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Indiana Michigan Transmission Company, AEP Ohio Transmission Company, AEP West Virginia Transmission Company, Appalachian Power Company, Indiana Michigan Power Company, Kingsport Power Company, Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2604.1	Remove approximately 11.32 miles of the 69 kV line between Millbrook Park and Franklin Furnace		AEP (100%)
b2604.2	At Millbrook Park station, add a new 138/69 kV Transformer #2 (90 MVA) with 3000 A 40 kA breakers on the high and low side. Replace the 600 A MOAB switch and add a 3000 A circuit switcher on the high side of Transformer #1		AEP (100%)
b2604.3	Replace Sciotoville 69 kV station with a new 138/12 kV in-out station (Cottrell) with 2000 A line MOABs facing Millbrook Park and East Wheelersburg 138 kV station		AEP (100%)
b2604.4	Tie Cottrell switch into the Millbrook Park – East Wheelersburg 138 kV circuit by constructing 0.50 mile of line using 795 ACSR 26/7 Drake (SE 359 MVA)		AEP (100%)
b2604.5	Install a new 2000 A 3-way PoP switch outside of Texas Eastern 138 kV substation (Sadiq switch)		AEP (100%)
b2604.6	Replace the Wheelersburg 69 kV station with a new 138/12 kV in-out station (Sweetgum) with a 3000 A 40 kA breaker facing Sadiq switch and a 2000 A 138 kV MOAB facing Althea		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2604.7	Build approximately 1.4 miles of new 138 kV line using 795 ACSR 26/7 Drake (SE 359 MVA) between the new Sadiq switch and the new Sweetgum 138 kV station	AEP (100%)
b2604.8	Remove the existing 69 kV Hayport Road switch	AEP (100%)
b2604.9	Rebuild approximately 2.3 miles along existing Right-Of-Way from Sweetgum to the Hayport Road switch 69 kV location as 138 kV single circuit and rebuild approximately 2.0 miles from the Hayport Road switch to Althea 69 kV with double circuit 138 kV construction, one side operated at 69 kV to continue service to K.O. Wheelersburg, using 795 ACSR 26/7 Drake (SE 359 MVA)	AEP (100%)
b2604.10	Build a new station (Althea) with a 138/69 kV, 90 MVA transformer. The 138 kV side will have a single 2000 A 40 kA circuit breaker and the 69 kV side will be a 2000 A 40 kA three breaker ring bus	AEP (100%)
b2604.11	Remote end work at Hanging Rock, East Wheelersburg and North Haverhill 138 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2605	Rebuild and reconductor Kammer – George Washington 69 kV circuit and George Washington – Moundsville ckt #1, designed for 138 kV. Upgrade limiting equipment at remote ends and at tap stations	AEP (100%)
b2606	Convert Bane – Hammondsville from 23 kV to 69 kV operation	AEP (100%)
b2607	Pine Gap Relay Limit Increase	AEP (100%)
b2608	Richlands Relay Upgrade	AEP (100%)
b2609	Thorofare – Goff Run – Powell Mountain 138 kV Build	AEP (100%)
b2610	Rebuild Pax Branch – Scaraboro as 138 kV	AEP (100%)
b2611	Skin Fork Area Improvements	AEP (100%)
b2611.1	New 138/46 kV station near Skin Fork and other components	AEP (100%)
b2611.2	Construct 3.2 miles of 1033 ACSR double circuit from new Station to cut into Sundial-Baileysville 138 kV line	AEP (100%)
b2634.1	Replace metering BCT on Tanners Creek CB T2 with a slip over CT with higher thermal rating in order to remove 1193 MVA limit on facility (Miami Fort-Tanners Creek 345 kV line)	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2643	Replace the Darrah 138 kV breaker 'L' with 40 kA rated breaker	AEP (100%)
b2645	Ohio Central 138 kV Loop	AEP (100%)
b2667	Replace the Muskingum 138 kV bus # 1 and 2	AEP (100%)
b2668	Reconductor Dequine to Meadow Lake 345 kV circuit #1 utilizing dual 954 ACSR 54/7 cardinal conductor	AEP (99.89%) / OVEC (0.11%)
b2668.1	Replace the bus/risers at Dequine 345 kV station	AEP (100%)
b2669	Install a second 345/138 kV transformer at Desoto	AEP (100%)
b2670	Replace switch at Elk Garden 138 kV substation (on the Elk Garden – Lebanon 138 kV circuit)	AEP (100%)
b2671	Replace/upgrade/add terminal equipment at Bradley, Mullensville, Pinnacle Creek, Itmann, and Tams Mountain 138 kV substations. Sag study on Mullens – Wyoming and Mullens – Tams Mt. 138 kV circuits	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2687.1	Install a +/- 450 MVAR SVC at Jacksons Ferry 765 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2687.2	Install a 300 MVAR shunt line reactor on the Broadford end of the Broadford – Jacksons Ferry 765 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      AEP (100%)</p>
b2697.1	Mitigate violations identified by sag study to operate Fieldale-Thornton-Franklin 138 kV overhead line conductor at its max. operating temperature. 6 potential line crossings to be addressed	AEP (100%)
b2697.2	Replace terminal equipment at AEP’s Danville and East Danville substations to improve thermal capacity of Danville – East Danville 138 kV circuit	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2698	Replace relays at AEP's Cloverdale and Jackson's Ferry substations to improve the thermal capacity of Cloverdale – Jackson's Ferry 765 kV line		AEP (100%)
b2701.1	Construct Herlan station as breaker and a half configuration with 9-138 kV CB's on 4 strings and with 2-28.8 MVAR capacitor banks		AEP (100%)
b2701.2	Construct new 138 kV line from Herlan station to Blue Racer station. Estimated approx. 3.2 miles of 1234 ACSS/TW Yukon and OPGW		AEP (100%)
b2701.3	Install 1-138 kV CB at Blue Racer to terminate new Herlan circuit		AEP (100%)
b2714	Rebuild/upgrade line between Glencoe and Willow Grove Switch 69 kV		AEP (100%)
b2715	Build approximately 11.5 miles of 34.5 kV line with 556.5 ACSR 26/7 Dove conductor on wood poles from Flushing station to Smyrna station		AEP (100%)
b2727	Replace the South Canton 138 kV breakers 'K', 'J', 'J1', and 'J2' with 80 kA breakers		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2731	Convert the Sunnyside – East Sparta – Malvern 23 kV sub-transmission network to 69 kV. The lines are already built to 69 kV standards	AEP (100%)
b2733	Replace South Canton 138 kV breakers ‘L’ and ‘L2’ with 80 kA rated breakers	AEP (100%)
b2750.1	Retire Betsy Layne 138/69/43 kV station and replace it with the greenfield Stanville station about a half mile north of the existing Betsy Layne station	AEP (100%)
b2750.2	Relocate the Betsy Layne capacitor bank to the Stanville 69 kV bus and increase the size to 14.4 MVAR	AEP (100%)
b2753.1	Replace existing George Washington station 138 kV yard with GIS 138 kV breaker and a half yard in existing station footprint. Install 138 kV revenue metering for new IPP connection	AEP (100%)
b2753.2	Replace Dilles Bottom 69/4 kV Distribution station as breaker and a half 138 kV yard design including AEP Distribution facilities but initial configuration will constitute a 3 breaker ring bus	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
<p>b2753.3</p> <p>Connect two 138 kV 6-wired circuits from “Point A” (currently de-energized and owned by FirstEnergy) in circuit positions previously designated Burger #1 &amp; Burger #2 138 kV. Install interconnection settlement metering on both circuits exiting Holloway</p>		<p>AEP (100%)</p>
<p>b2753.6</p> <p>Build double circuit 138 kV line from Dilles Bottom to “Point A”. Tie each new AEP circuit in with a 6-wired line at Point A. This will create a Dilles Bottom – Holloway 138 kV circuit and a George Washington – Holloway 138 kV circuit</p>		<p>AEP (100%)</p>
<p>b2753.7</p> <p>Retire line sections (Dilles Bottom – Bellaire and Moundsville – Dilles Bottom 69 kV lines) south of FirstEnergy 138 kV line corridor, near “Point A”. Tie George Washington – Moundsville 69 kV circuit to George Washington – West Bellaire 69 kV circuit</p>		<p>AEP (100%)</p>
<p>b2753.8</p> <p>Rebuild existing 69 kV line as double circuit from George Washington – Dilles Bottom 138 kV. One circuit will cut into Dilles Bottom 138 kV initially and the other will go past with future plans to cut in</p>		<p>AEP (100%)</p>

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2760	Perform a Sag Study of the Saltville – Tazewell 138 kV line to increase the thermal rating of the line		AEP (100%)
b2761.2	Perform a Sag Study of the Hazard – Wooten 161 kV line to increase the thermal rating of the line		AEP (100%)
b2761.3	Rebuild the Hazard – Wooten 161 kV line utilizing 795 26/7 ACSR conductor (300 MVA rating)		AEP (100%)
b2762	Perform a Sag Study of Nagel – West Kingsport 138 kV line to increase the thermal rating of the line		AEP (100%)
b2776	Reconductor the entire Dequine – Meadow Lake 345 kV circuit #2		AEP (99.89%) / OVEC (0.11%)
b2777	Reconductor the entire Dequine – Eugene 345 kV circuit #1		AEP (5.96%) / EKPC (89.89%) / OVEC (4.15%)
b2779.1	Construct a new 138 kV station, Campbell Road, tapping into the Grabill – South Hicksville 138 kV line		AEP (100%)
b2779.2	Reconstruct sections of the Butler-N.Hicksville and Auburn-Butler 69 kV circuits as 138 kV double circuit and extend 138 kV from Campbell Road station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2779.3	Construct a new 345/138 kV SDI Wilmington Station which will be sourced from Collingwood 345 kV and serve the SDI load at 345 kV and 138 kV, respectively		AEP (100%)
b2779.4	Loop 138 kV circuits in-out of the new SDI Wilmington 138 kV station resulting in a direct circuit to Auburn 138 kV and an indirect circuit to Auburn and Rob Park via Dunton Lake, and a circuit to Campbell Road; Reconductor 138 kV line section between Dunton Lake – SDI Wilmington		AEP (100%)
b2779.5	Expand Auburn 138 kV bus		AEP (100%)
b2779.6	Construct a 345 kV ring bus at Dunton Lake to serve Steel Dynamics, Inc. (SDI) load at 345 kV via two (2) circuits		AEP (100%)
b2779.7	Retire Collingwood 345 kV station		AEP (100%)
b2787	Reconductor 0.53 miles (14 spans) of the Kaiser Jct. - Air Force Jct. Sw section of the Kaiser - Heath 69 kV circuit/line with 336 ACSR to match the rest of the circuit (73 MVA rating, 78% loading)		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b2788	Install a new 3-way 69 kV line switch to provide service to AEP's Barnesville distribution station. Remove a portion of the #1 copper T-Line from the 69 kV through-path		AEP (100%)
b2789	Rebuild the Brues - Glendale Heights 69 kV line section (5 miles) with 795 ACSR (128 MVA rating, 43% loading)		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2790	Install a 3 MVAR, 34.5 kV cap bank at Caldwell substation	AEP (100%)
b2791	Rebuild Tiffin – Howard, new transformer at Chatfield	AEP (100%)
b2791.1	Rebuild portions of the East Tiffin - Howard 69 kV line from East Tiffin to West Rockaway Switch (0.8 miles) using 795 ACSR Drake conductor (129 MVA rating, 50% loading)	AEP (100%)
b2791.2	Rebuild Tiffin - Howard 69 kV line from St. Stephen’s Switch to Hinesville (14.7 miles) using 795 ACSR Drake conductor (90 MVA rating, non-conductor limited, 38% loading)	AEP (100%)
b2791.3	New 138/69 kV transformer with 138/69 kV protection at Chatfield	AEP (100%)
b2791.4	New 138/69 kV protection at existing Chatfield transformer	AEP (100%)
b2792	Replace the Elliott transformer with a 130 MVA unit, reconductor 0.42 miles of the Elliott – Ohio University 69 kV line with 556 ACSR to match the rest of the line conductor (102 MVA rating, 73% loading) and rebuild 4 miles of the Clark Street – Strouds R	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2793	Energize the spare Fremont Center 138/69 kV 130 MVA transformer #3. Reduces overloaded facilities to 46% loading	AEP (100%)
b2794	Construct new 138/69/34 kV station and 1-34 kV circuit (designed for 69 kV) from new station to Decliff station, approximately 4 miles, with 556 ACSR conductor (51 MVA rating)	AEP (100%)
b2795	Install a 34.5 kV 4.8 MVAR capacitor bank at Killbuck 34.5 kV station	AEP (100%)
b2796	Rebuild the Malvern - Oneida Switch 69 kV line section with 795 ACSR (1.8 miles, 125 MVA rating, 55% loading)	AEP (100%)
b2797	Rebuild the Ohio Central - Conesville 69 kV line section (11.8 miles) with 795 ACSR conductor (128 MVA rating, 57% loading). Replace the 50 MVA Ohio Central 138/69 kV XFMR with a 90 MVA unit	AEP (100%)
b2798	Install a 14.4 MVAR capacitor bank at West Hicksville station. Replace ground switch/MOAB at West Hicksville with a circuit switcher	AEP (100%)
b2799	Rebuild Valley - Almena, Almena - Hartford, Riverside - South Haven 69 kV lines. New line exit at Valley Station. New transformers at Almena and Hartford	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2799.1	Rebuild 12 miles of Valley – Almena 69 kV line as a double circuit 138/69 kV line using 795 ACSR conductor (360 MVA rating) to introduce a new 138 kV source into the 69 kV load pocket around Almena station		AEP (100%)
b2799.2	Rebuild 3.2 miles of Almena to Hartford 69 kV line using 795 ACSR conductor (90 MVA rating)		AEP (100%)
b2799.3	Rebuild 3.8 miles of Riverside – South Haven 69 kV line using 795 ACSR conductor (90 MVA rating)		AEP (100%)
b2799.4	At Valley station, add new 138 kV line exit with a 3000 A 40 kA breaker for the new 138 kV line to Almena and replace CB D with a 3000 A 40 kA breaker		AEP (100%)
b2799.5	At Almena station, install a 90 MVA 138/69 kV transformer with low side 3000 A 40 kA breaker and establish a new 138 kV line exit towards Valley		AEP (100%)
b2799.6	At Hartford station, install a second 90 MVA 138/69 kV transformer with a circuit switcher and 3000 A 40 kA low side breaker		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2817	Replace Delaware 138 kV breaker 'P' with a 40 kA breaker	AEP (100%)
b2818	Replace West Huntington 138 kV breaker 'F' with a 40 kA breaker	AEP (100%)
b2819	Replace Madison 138 kV breaker 'V' with a 63 kA breaker	AEP (100%)
b2820	Replace Sterling 138 kV breaker 'G' with a 40 kA breaker	AEP (100%)
b2821	Replace Morse 138 kV breakers '103', '104', '105', and '106' with 63 kA breakers	AEP (100%)
b2822	Replace Clinton 138 kV breakers '105' and '107' with 63 kA breakers	AEP (100%)
b2826.1	Install 300 MVAR reactor at Ohio Central 345 kV substation	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2826.2	Install 300 MVAR reactor at West Bellaire 345 kV substation	AEP (100%)
b2831.1	Upgrade the Tanner Creek – Miami Fort 345 kV circuit (AEP portion)	<b>DFAX Allocation:</b> AEP (27.09%) / Dayton (38.64%) / DEOK (34.27%)
b2832	Six wire the Kyger Creek – Sporn 345 kV circuits #1 and #2 and convert them to one circuit	AEP (100%)
b2833	Reconductor the Maddox Creek – East Lima 345 kV circuit with 2-954 ACSS Cardinal conductor	<b>DFAX Allocation:</b> AEP (76.06%) / Dayton (23.94%)
b2834	Reconductor and string open position and sixwire 6.2 miles of the Chemical – Capitol Hill 138 kV circuit	AEP (100%)
b2872	Replace the South Canton 138 kV breaker ‘K2’ with a 80 kA breaker	AEP (100%)
b2873	Replace the South Canton 138 kV breaker “M” with a 80 kA breaker	AEP (100%)
b2874	Replace the South Canton 138 kV breaker “M2” with a 80 kA breaker	AEP (100%)
b2878	Upgrade the Clifty Creek 345 kV risers	AEP (100%)
b2880	Rebuild approximately 4.77 miles of the Cannonsburg – South Neal 69 kV line section utilizing 795 ACSR conductor (90 MVA rating)	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2881	Rebuild ~1.7 miles of the Dunn Hollow – London 46 kV line section utilizing 795 26/7 ACSR conductor (58 MVA rating, non-conductor limited)	AEP (100%)
b2882	Rebuild Reusens - Peakland Switch 69 kV line. Replace Peakland Switch	AEP (100%)
b2882.1	Rebuild the Reusens - Peakland Switch 69 kV line (approximately 0.8 miles) utilizing 795 ACSR conductor (86 MVA rating, non-conductor limited)	AEP (100%)
b2882.2	Replace existing Peakland S.S with new 3 way switch phase over phase structure	AEP (100%)
b2883	Rebuild the Craneco – Pardee – Three Forks – Skin Fork 46 kV line section (approximately 7.2 miles) utilizing 795 26/7 ACSR conductor (108 MVA rating)	AEP (100%)
b2884	Install a second transformer at Nagel station, comprised of 3 single phase 250 MVA 500/138 kV transformers. Presently, TVA operates their end of the Boone Dam – Holston 138 kV interconnection as normally open preemptively for the loss of the existing Nagel	AEP (100%)
b2885	New delivery point for City of Jackson	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2885.1	Install a new Ironman Switch to serve a new delivery point requested by the City of Jackson for a load increase request	AEP (100%)
b2885.2	Install a new 138/69 kV station (Rhodes) to serve as a third source to the area to help relieve overloads caused by the customer load increase	AEP (100%)
b2885.3	Replace Coalton Switch with a new three breaker ring bus (Heppner)	AEP (100%)
b2886	Install 90 MVA 138/69 kV transformer, new transformer high and low side 3000 A 40 kA CBs, and a 138 kV 40 kA bus tie breaker at West End Fostoria	AEP (100%)
b2887	Add 2-138 kV CB's and relocate 2-138 kV circuit exits to different bays at Morse Road. Eliminate 3 terminal line by terminating Genoa - Morse circuit at Morse Road	AEP (100%)
b2888	Retire Poston substation. Install new Lemaster substation	AEP (100%)
b2888.1	Remove and retire the Poston 138 kV station	AEP (100%)
b2888.2	Install a new greenfield station, Lemaster 138 kV Station, in the clear	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2888.3	Relocate the Trimble 69 kV AEP Ohio radial delivery point to 138 kV, to be served off of the Poston – Strouds Run – Crooksville 138 kV circuit via a new three-way switch. Retire the Poston - Trimble 69 kV line	AEP (100%)
b2889	Expand Cliffview station	AEP (100%)
b2889.1	Cliffview Station: Establish 138 kV bus. Install two 138/69 kV XFRs (130 MVA), six 138 kV CBs (40 kA 3000 A) and four 69 kV CBs (40 kA 3000 A)	AEP (100%)
b2889.2	Byllesby – Wythe 69 kV: Retire all 13.77 miles (1/0 CU) of this circuit (~4 miles currently in national forest)	AEP (100%)
b2889.3	Galax – Wythe 69 kV: Retire 13.53 miles (1/0 CU section) of line from Lee Highway down to Byllesby. This section is currently double circuited with Byllesby – Wythe 69 kV. Terminate the southern 3/0 ACSR section into the newly opened position at Byllesby	AEP (100%)
b2889.4	Cliffview Line: Tap the existing Pipers Gap – Jubal Early 138 kV line section. Construct double circuit in/out (~2 miles) to newly established 138 kV bus, utilizing 795 26/7 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2890.1	Rebuild 23.55 miles of the East Cambridge – Smyrna 34.5 kV circuit with 795 ACSR conductor (128 MVA rating) and convert to 69 kV	AEP (100%)
b2890.2	East Cambridge: Install a 2000 A 69 kV 40 kA circuit breaker for the East Cambridge – Smyrna 69 kV circuit	AEP (100%)
b2890.3	Old Washington: Install 69 kV 2000 A two way phase over phase switch	AEP (100%)
b2890.4	Install 69 kV 2000 A two way phase over phase switch	AEP (100%)
b2891	Rebuild the Midland Switch to East Findlay 34.5 kV line (3.31 miles) with 795 ACSR (63 MVA rating) to match other conductor in the area	AEP (100%)
b2892	Install new 138/12 kV transformer with high side circuit switcher at Leon and a new 138 kV line exit towards Ripley. Establish 138 kV at the Ripley station with a new 138/69 kV 130 MVA transformer and move the distribution load to 138 kV service	AEP (100%)
b2936.1	Rebuild approximately 6.7 miles of 69 kV line between Mottville and Pigeon River using 795 ACSR conductor (129 MVA rating). New construction will be designed to 138 kV standards but operated at 69 kV	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2936.2	Pigeon River Station: Replace existing MOAB Sw. 'W' with a new 69 kV 3000 A 40 kA breaker, and upgrade existing relays towards HMD station. Replace CB H with a 3000 A 40 kA breaker		AEP (100%)
b2937	Replace the existing 636 ACSR 138 kV bus at Fletchers Ridge with a larger 954 ACSR conductor		AEP (100%)
b2938	Perform a sag mitigations on the Broadford – Wolf Hills 138 kV circuit to allow the line to operate to a higher maximum temperature		AEP (100%)
b2958.1	Cut George Washington – Tidd 138 kV circuit into Sand Hill and reconfigure Brues & Warton Hill line entrances		AEP (100%)
b2958.2	Add 2 138 kV 3000 A 40 kA breakers, disconnect switches, and update relaying at Sand Hill station		AEP (100%)
b2968	Upgrade existing 345 kV terminal equipment at Tanner Creek station		AEP (100%)
b2969	Replace terminal equipment on Maddox Creek - East Lima 345 kV circuit		AEP (100%)
b2976	Upgrade terminal equipment at Tanners Creek 345 kV station. Upgrade 345 kV bus and risers at Tanners Creek for the Dearborn circuit		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2988	Replace the Twin Branch 345 kV breaker “JM” with 63 kA breaker and associated substation works including switches, bus leads, control cable and new DICM	AEP (100%)
b2993	Rebuild the Torrey – South Gambrinus Switch – Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR ‘Curlew’ conductor and steel poles	AEP (100%)
b3000	Replace South Canton 138 kV breaker ‘N’ with an 80 kA breaker	AEP (100%)
b3001	Replace South Canton 138 kV breaker ‘N1’ with an 80 kA breaker	AEP (100%)
b3002	Replace South Canton 138 kV breaker ‘N2’ with an 80 kA breaker	AEP (100%)
b3036	Rebuild 15.6 miles of Haviland - North Delphos 138 kV line	AEP (100%)
b3037	Upgrades at the Natrium substation	AEP (100%)
b3038	Reconductor the Capitol Hill – Coco 138 kV line section	AEP (100%)
b3039	Line swaps at Muskingum 138 kV station	AEP (100%)
b3040.1	Rebuild Ravenswood – Racine tap 69 kV line section (~15 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3040.2	Rebuild existing Ripley – Ravenswood 69 kV circuit (~9 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor	AEP (100%)
b3040.3	Install new 3-way phase over phase switch at Sarah Lane station to replace the retired switch at Cottageville	AEP (100%)
b3040.4	Install new 138/12 kV 20 MVA transformer at Polymer station to transfer load from Mill Run station to help address overload on the 69 kV network	AEP (100%)
b3040.5	Retire Mill Run station	AEP (100%)
b3040.6	Install 28.8 MVAR cap bank at South Buffalo station	AEP (100%)
b3051.2	Adjust CT tap ratio at Ronceverte 138 kV	AEP (100%)
b3085	Reconductor Kammer – George Washington 138 kV line (approx. 0.08 mile). Replace the wave trap at Kammer 138 kV	AEP (100%)
b3086.1	Rebuild New Liberty – Findlay 34 kV line Str’s 1–37 (1.5 miles), utilizing 795 26/7 ACSR conductor	AEP (100%)
b3086.2	Rebuild New Liberty – North Baltimore 34 kV line Str’s 1-11 (0.5 mile), utilizing 795 26/7 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3086.3	Rebuild West Melrose – Whirlpool 34 kV line Str’s 55–80 (1 mile), utilizing 795 26/7 ACSR conductor	AEP (100%)
b3086.4	North Findlay station: Install a 138 kV 3000A 63kA line breaker and low side 34.5 kV 2000A 40 kA breaker, high side 138 kV circuit switcher on T1	AEP (100%)
b3086.5	Ebersole station: Install second 90 MVA 138/69/34 kV transformer. Install two low side (69 kV) 2000A 40 kA breakers for T1 and T2	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3095	Rebuild Lakin – Racine Tap 69 kV line section (9.2 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor		AEP (100%)
b3099	Install a 138 kV 3000A 40 kA circuit switcher on the high side of the existing 138/34.5 kV transformer No.5 at Holston station		AEP (100%)
b3100	Replace the 138 kV MOAB switcher “YY” with a new 138 kV circuit switcher on the high side of Chemical transformer No.6		AEP (100%)
b3101	Rebuild the 1/0 Cu. conductor sections (approx. 1.5 miles) of the Fort Robinson – Moccasin Gap 69 kV line section (approx. 5 miles) utilizing 556 ACSR conductor and upgrade existing relay trip limit (WN/WE: 63 MVA, line limited by remaining conductor sections)		AEP (100%)
b3102	Replace existing 50 MVA 138/69 kV transformers #1 and #2 (both 1957 vintage) at Fremont station with new 130 MVA 138/69 kV transformers		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3103.1	Install a 138/69 kV transformer at Royerton station. Install a 69 kV bus with one 69 kV breaker toward Bosman station. Rebuild the 138 kV portion into a ring bus configuration built for future breaker and a half with four 138 kV breakers	AEP (100%)
b3103.2	Rebuild the Bosman/Strawboard station in the clear across the road to move it out of the flood plain and bring it up to 69 kV standards	AEP (100%)
b3103.3	Retire 138 kV breaker L at Delaware station and re-purpose 138 kV breaker M for the Jay line	AEP (100%)
b3103.4	Retire all 34.5 kV equipment at Hartford City station. Re-purpose breaker M for the Bosman line 69 kV exit	AEP (100%)
b3103.5	Rebuild the 138 kV portion of Jay station as a 6 breaker, breaker and a half station re-using the existing breakers "A", "B", and "G." Rebuild the 69 kV portion of this station as a 6 breaker ring bus re-using the 2 existing 69 kV breakers. Install a new 138/69 kV transformer	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3103.6	Rebuild the 69 kV Hartford City – Armstrong Cork line but instead of terminating it into Armstrong Cork, terminate it into Jay station		AEP (100%)
b3103.7	Build a new 69 kV line from Armstrong Cork – Jay station		AEP (100%)
b3103.8	Rebuild the 34.5 kV Delaware – Bosman line as the 69 kV Royerton – Strawboard line. Retire the line section from Royerton to Delaware stations		AEP (100%)
b3104	Perform a sag study on the Polaris – Westerville 138 kV line (approx. 3.6 miles) to increase the summer emergency rating to 310 MVA		AEP (100%)
b3105	Rebuild the Delaware – Hyatt 138 kV line (approx. 4.3 miles) along with replacing conductors at both Hyatt and Delaware substations		AEP (100%)
b3106	Perform a sag study (6.8 miles of line) to increase the SE rating to 310 MVA. Note that results from the sag study could cover a wide range of outcomes, from no work required to a complete rebuild		AEP (100%)
b3109	Rebuild 5.2 miles Bethel – Sawmill 138 kV line including ADSS		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3112	Construct a single circuit 138 kV line (approx. 3.5 miles) from Amlin to Dublin using 1033 ACSR Curlew (296 MVA SN), convert Dublin station into a ring configuration, and re-terminating the Britton UG cable to Dublin station	AEP (100%)
b3116	Replace existing Mullens 138/46 kV 30 MVA transformer No.4 and associated protective equipment with a new 138/46 kV 90 MVA transformer and associated protective equipment	AEP (100%)
b3119.1	Rebuild the Jay – Pennville 138 kV line as double circuit 138/69 kV. Build a new 9.8 mile single circuit 69 kV line from near Pennville station to North Portland station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3119.2	Install three (3) 69 kV breakers to create the “U” string and add a low side breaker on the Jay transformer 2	AEP (100%)
b3119.3	Install two (2) 69 kV breakers at North Portland station to complete the ring and allow for the new line	AEP (100%)
b3129	At Conesville 138 kV station: Remove line leads to generating units, transfer plant AC service to existing station service feeds in Conesville 345/138 kV yard, and separate and reconfigure protection schemes	AEP (100%)
b3131	At East Lima and Haviland 138 kV stations, replace line relays and wavetrap on the East Lima – Haviland 138 kV facility	AEP (100%)
b3131.1	Rebuild approximately 12.3 miles of remaining Lark conductor on the double circuit line between Haviland and East Lima with 1033 54/7 ACSR conductor	AEP (100%)
b3132	Rebuild 3.11 miles of the LaPorte Junction – New Buffalo 69 kV line with 795 ACSR	AEP (100%)
b3139	Rebuild the Garden Creek – Whetstone 69 kV line (approx. 4 miles)	AEP (100%)
b3140	Rebuild the Whetstone – Knox Creek 69 kV line (approx. 3.1 miles)	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3141	Rebuild the Knox Creek – Coal Creek 69 kV line (approx. 2.9 miles)	AEP (100%)
b3148.1	Rebuild the 46 kV Bradley – Scarbro line to 96 kV standards using 795 ACSR to achieve a minimum rate of 120 MVA. Rebuild the new line adjacent to the existing one leaving the old line in service until the work is completed	AEP (100%)
b3148.2	Bradley remote end station work, replace 46 kV bus, install new 12 MVAR capacitor bank	AEP (100%)
b3148.3	Replace the existing switch at Sun substation with a 2-way SCADA-controlled motor-operated air-breaker switch	AEP (100%)
b3148.4	Remote end work and associated equipment at Scarbro station	AEP (100%)
b3148.5	Retire Mt. Hope station and transfer load to existing Sun station	AEP (100%)
b3149	Rebuild the 2.3 mile Decatur – South Decatur 69 kV line using 556 ACSR	AEP (100%)
b3150	Rebuild Ferguson 69/12 kV station in the clear as the 138/12 kV Bear station and connect it to an approx. 1 mile double circuit 138 kV extension from the Aviation – Ellison Road 138 kV line to remove the load from the 69 kV line	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3151.1	Rebuild the 30 mile Gateway – Wallen 34.5 kV circuit as the 27 mile Gateway – Wallen 69 kV line	AEP (100%)
b3151.2	Retire approx. 3 miles of the Columbia – Whitley 34.5 kV line	AEP (100%)
b3151.3	At Gateway station, remove all 34.5 kV equipment and install one (1) 69 kV circuit breaker for the new Whitley line entrance	AEP (100%)
b3151.4	Rebuild Whitley as a 69 kV station with two (2) lines and one (1) bus tie circuit breaker	AEP (100%)
b3151.5	Replace the Union 34.5 kV switch with a 69 kV switch structure	AEP (100%)
b3151.6	Replace the Eel River 34.5 kV switch with a 69 kV switch structure	AEP (100%)
b3151.7	Install a 69 kV Bobay switch at Woodland station	AEP (100%)
b3151.8	Replace the Carroll and Churubusco 34.5 kV stations with the 69 kV Snapper station. Snapper station will have two (2) line circuit breakers, one (1) bus tie circuit breaker and a 14.4 MVAR cap bank	AEP (100%)
b3151.9	Remove 34.5 kV circuit breaker “AD” at Wallen station	AEP (100%)
b3151.10	Rebuild the 2.5 miles of the Columbia – Gateway 69 kV line	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3151.11	Rebuild Columbia station in the clear as a 138/69 kV station with two (2) 138/69 kV transformers and 4-breaker ring buses on the high and low side. Station will reuse 69 kV breakers “J” & “K” and 138 kV breaker “D”	AEP (100%)
b3151.12	Rebuild the 13 miles of the Columbia – Richland 69 kV line	AEP (100%)
b3151.13	Rebuild the 0.5 mile Whitley – Columbia City No.1 line as 69 kV	AEP (100%)
b3151.14	Rebuild the 0.5 mile Whitley – Columbia City No.2 line as 69 kV	AEP (100%)
b3151.15	Rebuild the 0.6 mile double circuit section of the Rob Park – South Hicksville / Rob Park – Diebold Road as 69 kV	AEP (100%)
b3160.1	Construct an approx. 2.4 miles double circuit 138 kV extension using 1033 ACSR (Aluminum Conductor Steel Reinforced) to connect Lake Head to the 138 kV network	AEP (100%)
b3160.2	Retire the approx.2.5 miles 34.5 kV Niles – Simplicity Tap line	AEP (100%)
b3160.3	Retire the approx.4.6 miles Lakehead 69 kV Tap	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3160.4	Build new 138/69 kV drop down station to feed Lakehead with a 138 kV breaker, 138 kV switcher, 138/69 kV transformer and a 138 kV Motor-Operated Air Break		AEP (100%)
b3160.5	Rebuild the approx. 1.2 miles Buchanan South 69 kV Radial Tap using 795 ACSR (Aluminum Conductor Steel Reinforced)		AEP (100%)
b3160.6	Rebuild the approx.8.4 miles 69 kV Pletcher – Buchanan Hydro line as the approx. 9 miles Pletcher – Buchanan South 69 kV line using 795 ACSR (Aluminum Conductor Steel Reinforced)		AEP (100%)
b3160.7	Install a PoP (Point-of-Presence) switch at Buchanan South station with 2 line MOABs (Motor-Operated Air Break)		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3208		AEP (100%)
b3209		AEP (100%)
b3210		AEP (100%)
b3220		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3243	Replace risers at the Bass 34.5 kV station	AEP (100%)
b3244	Rebuild approximately 9 miles of the Robinson Park – Harlan 69 kV line	AEP (100%)
b3248	Install a low side 69 kV circuit breaker at the Albion 138/69 kV transformer #1	AEP (100%)
b3249	Rebuild the Chatfield – Melmore 138 kV line (approximately 10 miles) to 1033 ACSR conductor	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3253	Install a 3000A 40 kA 138 kV breaker on the high side of 138/69 kV transformer #5 at the Millbrook Park station. The transformer and associated bus protection will be upgraded accordingly	AEP (100%)
b3255	Upgrade 795 AAC risers at the Sand Hill 138 kV station towards Cricket Switch with 1272 AAC	AEP (100%)
b3256	Upgrade 500 MCM Cu risers at Tidd 138 kV station towards Wheeling Steel; replace with 1272 AAC conductor	AEP (100%)
b3257	Replace two spans of 336.4 26/7 ACSR on the Twin Branch – AM General #2 34.5 kV circuit	AEP (100%)
b3258	Install a 3000A 63 kA 138 kV breaker on the high side of 138/69 kV transformer #2 at Wagenhals station. The transformer and associated bus protection will be upgraded accordingly	AEP (100%)
b3259	At West Millersburg station, replace the 138 kV MOAB on the West Millersburg – Wooster 138 kV line with a 3000A 40 kA breaker	AEP (100%)
b3261	Upgrade circuit breaker “R1” at Tanners Creek 345 kV. Install Transient Recovery Voltage capacitor to increase the rating from 50 kA to 63 kA	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3269	At West New Philadelphia station, add a high side 138 kV breaker on the 138/69 kV Transformer #2 along with a 138 kV breaker on the line towards Newcomerstown	AEP (100%)
b3270	Install 1.7 miles of 795 ACSR 138 kV conductor along the other side of Dragoon Tap 138 kV line, which is currently double circuit tower with one position open. Additionally, install a second 138/34.5 kV transformer at Dragoon, install a high side circuit switcher on the current transformer at the Dragoon Station, and install two (2) 138 kV line breakers on the Dragoon – Jackson 138 kV and Dragoon – Twin Branch 138 kV lines	AEP (100%)
b3270.1	Replace Dragoon 34.5 kV breakers “B”, “C”, and “D” with 40 kA breakers	AEP (100%)
b3271	Install a 138 kV circuit breaker at Fremont station on the line towards Fremont Center and install a 9.6 MVAR 69 kV capacitor bank at Bloom Road station	AEP (100%)
b3272	Install two 138 kV circuit switchers on the high side of 138/34.5 kV Transformers #1 and #2 at Rockhill station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3273.1	Rebuild and convert the existing 17.6 miles East Leipsic – New Liberty 34.5 kV circuit to 138 kV using 795 ACSR		AEP (100%)
b3273.2	Convert the existing 34.5 kV equipment to 138 kV and expand the existing McComb station to the north and east to allow for new equipment to be installed. Install two (2) new 138 kV box bays to allow for line positions and two (2) new 138/12 kV transformers		AEP (100%)
b3273.3	Expand the existing East Leipsic 138 kV station to the north to allow for another 138 kV line exit to be installed. The new line exit will involve installing a new 138 kV circuit breaker, disconnect switches and the addition of a new dead end structure along with the extension of the existing 138 kV bus work		AEP (100%)
b3273.4	Add one (1) 138 kV circuit breaker and disconnect switches in order to add an additional line position at New Liberty 138 kV station. Install line relaying potential devices and retire the 34.5 kV breaker ‘F’		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3274	Rebuild approximately 8.9 miles of 69 kV line between Newcomerstown and Salt Fork Switch with 556 ACSR conductor	AEP (100%)
b3275.1	Rebuild the Kammer Station – Cresaps Switch 69 kV line, approximately 0.5 mile	AEP (100%)
b3275.2	Rebuild the Cresaps Switch – McElroy Station 69 kV, approximately 0.67 mile	AEP (100%)
b3275.3	Replace a single span of 4/0 ACSR from Moundsville - Natrium structure 93L to Carbon Tap switch 69 kV located between the Colombia Carbon and Conner Run stations. Remainder of the line is 336 ACSR	AEP (100%)
b3275.4	Rebuild from Colombia Carbon to Columbia Carbon Tap structure 93N 69 kV, approximately 0.72 mile. The remainder of the line between Colombia Carbon Tap structure 93N and Natrium station is 336 ACSR and will remain	AEP (100%)
b3275.5	Replace the Cresaps 69 kV 3-Way Phase-Over-Phase switch and structure with a new 1200A 3-Way switch and steel pole	AEP (100%)
b3275.6	Replace 477 MCM Alum bus and risers at McElroy 69 kV station	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3275.7	Replace Natrium 138 kV bus existing between CB-BT1 and along the 138 kV Main Bus #1 dropping to CBH1 from the 500 MCM conductors to a 1272 KCM AAC conductor. Replace the dead end clamp and strain insulators		AEP (100%)
b3276.1	Rebuild the 2/0 Copper section of the Lancaster – South Lancaster 69 kV line, approximately 2.9 miles of the 3.2 miles total length with 556 ACSR conductor. The remaining section has a 336 ACSR conductor		AEP (100%)
b3276.2	Rebuild the 1/0 Copper section of the line between Lancaster Junction and Ralston station 69 kV, approximately 2.3 miles of the 3.1 miles total length		AEP (100%)
b3276.3	Rebuild the 2/0 Copper portion of the line between East Lancaster Tap and Lancaster 69 kV, approximately 0.81 mile		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3278.1	Replace H.S. MOAB switches on the high side of the 138/69/34.5 kV transformer T1 with a H.S. circuit switcher at Saltville station		AEP (100%)
b3278.2	Replace existing 138/69/34.5 kV transformer T2 with a new 130 MVA 138/69/13 kV transformer at Meadowview station		AEP (100%)
b3279	Install a new 138 kV, 21.6 MVAR cap bank and circuit switcher at Apple Grove station		AEP (100%)
b3280	Rebuild the existing Cabin Creek – Kelly Creek 46 kV line (to Structure 366-44), approximately 4.4 miles. This section is double circuit with the existing Cabin Creek – London 46 kV line so a double circuit rebuild would be required		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3282.1	Install a second 138 kV circuit utilizing 795 ACSR conductor on the open position of the existing double circuit towers from East Huntington – North Proctorville. Remove the existing 34.5 kV line from East Huntington – North Chesapeake and rebuild this section to 138 kV served from a new PoP switch off the new East Huntington – North Proctorville 138 kV #2 line		AEP (100%)
b3282.2	Install a 138 kV 40 kA circuit breaker at North Proctorville station		AEP (100%)
b3282.3	Install a 138 kV 40 kA circuit breaker at East Huntington station		AEP (100%)
b3282.4	Convert the existing 34/12 kV North Chesapeake to a 138/12 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3284	Rebuild approximately 5.44 miles of 69 kV line from Lock Lane to Point Pleasant		AEP (100%)
b3285	Replace the Meigs 69 kV 4/0 Cu station riser towards Gavin and rebuild the section of the Meigs – Hemlock 69 kV circuit from Meigs to approximately Structure #40 (about 4 miles) replacing the line conductor 4/0 ACSR with the line conductor size 556.5 ACSR		AEP (100%)
b3286	Reconductor the first 3 spans from Merrimac station to Structure 464-3 of 3/0 ACSR conductor utilizing 336 ACSR on the existing Merrimac – Midway 69 kV circuit		AEP (100%)
b3287	Upgrade 69 kV risers at Moundsville station towards George Washington		AEP (100%)
b3289.1	Install high-side circuit switcher on 138/69/12 kV T5 at Roanoke station		AEP (100%)
b3289.2	Install high-side circuit switcher on 138/69/34.5 kV T1 at Huntington Court station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3290.1	Build 9.4 miles of single circuit 69 kV line from Roselms to near East Ottoville 69 kV switch		AEP (100%)
b3290.2	Rebuild 7.5 miles of double circuit 69 kV line between East Ottoville switch and Kalida station (combining with the new Roselms to Kalida 69 kV circuit)		AEP (100%)
b3290.3	At Roselms switch, install a new three way 69 kV, 1200 A phase-over-phase switch, with sectionalizing capability		AEP (100%)
b3290.4	At Kalida 69 kV station, terminate the new line from Roselms switch. Move the CS XT2 from high side of T2 to the high side of T1. Remove existing T2 transformer		AEP (100%)
b3291	Replace the Russ St. 34.5 kV switch		AEP (100%)
b3292	Replace existing 69 kV capacitor bank at Stuart station with a 17.2 MVAR capacitor bank		AEP (100%)
b3293	Replace 2/0 Cu entrance span conductor on the South Upper Sandusky 69 kV line and 4/0 Cu Risers/Bus conductors on the Forest line at Upper Sandusky 69 kV station		AEP (100%)
b3294	Replace existing 69 kV disconnect switches for circuit breaker "C" at Walnut Avenue station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3295	Grundy 34.5 kV: Install a 34.5 kV 9.6 MVAR cap bank	AEP (100%)
b3296	Rebuild the overloaded portion of the Concord – Whitaker 34.5 kV line (1.13 miles). Rebuild is double circuit and will utilize 795 ACSR conductor	AEP (100%)
b3297.1	Rebuild 4.23 miles of 69 kV line between Sawmill and Lazelle station, using 795 ACSR 26/7 conductor	AEP (100%)
b3297.2	Rebuild 1.94 miles of 69 kV line between Westerville and Genoa stations, using 795 ACSR 26/7 conductor	AEP (100%)
b3297.3	Replace risers and switchers at Lazelle, Westerville, and Genoa 69 kV stations. Upgrade associated relaying accordingly	AEP (100%)
b3298	Rebuild 0.8 mile of double circuit 69 kV line between South Toronto and West Toronto. Replace 219 ACSR with 556 ACSR	AEP (100%)
b3298.1	Replace the 69 kV breaker D at South Toronto station with 40 kA breaker	AEP (100%)
b3299	Rebuild 0.2 mile of the West End Fostoria - Lumberjack Switch 69 kV line with 556 ACSR (Dove) conductors. Replace jumpers on West End Fostoria line at Lumberjack Switch	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3308	Reconductor and rebuild 1 span of T-line on the Fort Steuben – Sunset Blvd 69 kV branch with 556 ACSR		AEP (100%)
b3309	Rebuild 1.75 miles of the Greenlawn – East Tiffin line section of the Carothers – Greenlawn 69 kV circuit containing 133 ACSR conductor with 556 ACSR conductor. Upgrade relaying as required		AEP (100%)
b3310.1	Rebuild 10.5 miles of the Howard – Willard 69 kV line utilizing 556 ACSR conductor		AEP (100%)
b3310.2	Upgrade relaying at Howard 69 kV station		AEP (100%)
b3310.3	Upgrade relaying at Willard 69 kV station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3312	Rebuild approximately 4 miles of existing 69 kV line between West Mount Vernon and Mount Vernon stations. Replace the existing 138/69 kV transformer at West Mount Vernon with a larger 90 MVA unit along with existing 69 kV breaker 'C'		AEP (100%)
b3313	Add 40 kA circuit breakers on the low and high side of the East Lima 138/69 kV transformer		AEP (100%)
b3314.1	Install a new 138/69 kV 130 MVA transformer and associated protection at Elliot station		AEP (100%)
b3314.2	Perform work at Strouds Run station to retire 138/69/13 kV 33.6 MVA Transformer #1 and install a dedicated 138/13 KV distribution transformer		AEP (100%)
b3315	Upgrade relaying on Mark Center – South Hicksville 69 kV line and replace Mark Center cap bank with a 7.7 MVAR unit		AEP (100%)
b3320	Replace the CT at Don Marquis 345 kV station		AEP (100%)
b3336	Rebuild 6 miles Benton Harbor - Riverside 138 kV double circuit extension		AEP (100%)
b3337	Replace the one (1) Hyatt 138 kV breaker “AB1” (101N) with 3000 A, 63 kA interrupting breaker		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3338	Replace the two (2) Kenny 138 kV breakers, “102” (SC-3) and “106” (SC-4), each with a 3000 A, 63 kA interrupting breaker		AEP (100%)
b3339	Replace the one (1) Canal 138 kV breaker “3” with 3000 A, 63 kA breaker		AEP (100%)
b3342	Replace the 2156 ACSR and 2874 ACSR bus and risers with 2-bundled 2156 ACSR at Muskingum River 345 kV station to address loading issues on Muskingum - Waterford 345 kV line		AEP (100%)
b3343	Rebuild approximately 0.3 miles of the overloaded 69 kV line between Albion - Philips Switch and Philips Switch - Brimfield Switch with 556 ACSR conductor		AEP (100%)
b3344.1	Install two (2) 138 kV circuit breakers in the M and N strings in the breaker-and-a-half configuration in West Kingsport station 138 kV yard to allow the Clinch River - Moreland Dr. 138 kV to cut in the West Kingsport station		AEP (100%)
b3344.2	Upgrade remote end relaying at Riverport 138 kV station due to the line cut in at West Kingsport station		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3345.1	Rebuild approximately 4.2 miles of overloaded sections of the 69 kV line between Salt Fork switch and Leatherwood switch with 556 ACSR	AEP (100%)
b3345.2	Update relay settings at Broom Road station	AEP (100%)
b3346.1	Rebuild approximately 3.5 miles of overloaded 69 kV line between North Delphos – East Delphos – Elida Road switch station. This includes approximately 1.1 miles of double circuit line that makes up a portion of the North Delphos – South Delphos 69 kV line and the North Delphos – East Delphos 69 kV line. Approximately 2.4 miles of single circuit line will also be rebuilt between the double circuit portion to East Delphos station and from East Delphos to Elida Road switch station	AEP (100%)
b3346.2	Replace the line entrance spans at South Delphos station to eliminate the overloaded 4/0 Copper and 4/0 ACSR conductor	AEP (100%)
b3347.1	Rebuild approximately 20 miles of 69 kV line between Bancroft and Milton stations with 556 ACSR conductor	AEP (100%)
b3347.2	Replace the jumpers around Hurrican switch with 556 ACSR	AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3347.3	Replace the jumpers around Teays switch with 556 ACSR	AEP (100%)
b3347.4	Update relay settings at Winfield station to coordinate with remote ends on line rebuild	AEP (100%)
b3347.5	Update relay settings at Bancroft station to coordinate with remote ends on line rebuild	AEP (100%)
b3347.6	Update relay settings at Milton station to coordinate with remote ends on line rebuild	AEP (100%)
b3347.7	Update relay settings at Putnam Village station to coordinate with remote ends on line rebuild	AEP (100%)
b3348.1	Construct a 138 kV single bus station (Tin Branch) consisting of a 138 kV box bay with a distribution transformer and 12 kV distribution bay. Two 138 kV lines will feed this station (from Logan and Sprigg stations), and distribution will have one 12 kV feed. Install two 138 kV circuit breakers on the line exits. Install 138 kV circuit switcher for the new transformer	AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3348.2	Construct a new 138/46/12 kV Argyle station to replace Dehue 46 kV station. Install a 138 kV ring bus using a breaker-and-a-half configuration, with an autotransformer with a 46 kV feed and a distribution transformer with a 12 kV distribution bay. Two 138 kV lines will feed this station (from Logan and Wyoming stations). There will also be a 46 kV feed from this station to Becco station. Distribution will have two 12 kV feeds. Retire Dehue 46 kV station in its entirety		AEP (100%)
b3348.3	Bring the Logan – Sprigg #2 138 kV circuit in and out of Tin Branch station by constructing approximately 1.75 miles of new overhead double circuit 138 kV line. Double circuit T3 series lattice towers will be used along with 795,000 cm ACSR 26/7 conductor. One shield wire will be conventional 7 #8 ALUMOWELD, and one shield wire will be optical ground wire (OPGW)		AEP (100%)
b3348.4	Logan-Wyoming No. 1 circuit in and out of the proposed Argyle 46 kV station. Double circuit T3 series lattice towers will be used along with 795,000 cm ACSR 26/7 conductor. One shield wire will be conventional 7 #8 ALUMOWELD, and one shield wire will be OPGW		AEP (100%)
b3348.5	Rebuild approximately 10 miles of 46 kV line between Becco and the new Argyle 46 kV substation. Retire approximately 16 miles of 46 kV line between the new Argyle substation and Chauncey station		AEP (100%)
b3348.6	Adjust relay settings due to new line terminations and retirements at Logan, Wyoming, Sprigg, Becco and Chauncey stations		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3350.1	Replace Bellefonte 69 kV breakers C, G, I, Z, AB and JJ in place. The new 69 kV breakers to be rated at 3000 A 40 kA		AEP (100%)
b3350.2	Upgrade remote end relaying at Point Pleasant, Coalton and South Point 69 kV substations		AEP (100%)
b3351	Replace the 69 kV in-line switches at Monterey 69 kV substation		AEP (100%)
b3354	Replace circuit breakers '42' and '43' at Bexley station with 3000 A, 40 kA 69 kV breakers (operated at 40 kV), slab, control cables and jumpers		AEP (100%)
b3355	Replace circuit breakers 'A' and 'B' at South Side Lima station with 1200 A, 25 kA 34.5 kV breakers, slab, control cables and jumpers		AEP (100%)
b3356	Replace circuit breaker 'H' at West End Fostoria station with 3000 A, 40 kA 69 kV breaker, slab, control cables and jumpers		AEP (100%)
b3357	Replace circuit breakers 'C', 'E,' and 'L' at Natrium station with 3000 A, 40 kA 69 kV breakers, slab, control cables and jumpers		AEP (100%)

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Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

b3358	Install a 69 kV 11.5 MVAR capacitor at Biers Run 69 kV station		AEP (100%)
b3359	Rebuild approximately 2.3 miles of the existing North Van Wert Sw. – Van Wert 69 kV line utilizing 556 ACSR conductor		AEP (100%)
b3362	Rebuild approximately 3.1 miles of the overloaded conductor on the existing Oertels Corner – North Portsmouth 69 kV line utilizing 556 ACSR		AEP (100%)
b3731	Replace 40 kV breaker J at McComb 138 kV station with a new 3000A 40 kA breaker		AEP (100%)
b3732	Install a 6 MVAR, 34.5 kV cap bank at Morgan Run station		AEP (100%)
b3733	Rebuild the 1.8 mile 69 kV line between Summerhill and Willow Grove Switch. Replace 4/0 ACSR conductor with 556 ACSR		AEP (100%)
b3734	Install a 7.7 MVAR, 69 kV cap bank at both Otway station and Rosemount station		AEP (100%)
b3735	Terminate the existing Broadford – Wolf Hills #1 138 kV line into Abingdon 138 kV Station. This line currently bypasses the existing Abingdon 138 kV station; Install two new 138 kV circuit breakers on each new line exit towards Broadford and towards Wolf Hills #1 station; Install one new 138 kV circuit breaker on line exit towards South Abingdon station for standard bus sectionalizing		AEP (100%)

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3736.1	Establish 69 kV bus and new 69 kV line Circuit Breaker at Dorton substation	AEP (100%)
b3736.2	At Breaks substation, reuse 72 kV breaker A as the new 69 kV line breaker	AEP (100%)
b3736.3	Rebuild approximately 16.7 miles Dorton – Breaks 46 kV line to 69 kV line	AEP (100%)
b3736.4	Retire approximately 17.2 miles Cedar Creek – Elwood 46 kV line	AEP (100%)
b3736.5	Retire approximately 6.2 miles Henry Clay – Elwood 46 kV line section	AEP (100%)
b3736.6	Retire Henry Clay 46 kV substation and replace with Poor Bottom 69 kV station. Install a new 0.7 mile double circuit extension to Poor Bottom 69 kV station	AEP (100%)
b3736.7	Retire Draffin substation and replace with a new substation. Install a new 0.25 mile double circuit extension to New Draffin substation	AEP (100%)
b3736.8	Remote end work at Jenkins substation	AEP (100%)
b3736.9	Provide transition fiber to Dorton, Breaks, Poor Bottom, Jenkins and New Draffin 69 kV substations	AEP (100%)
b3736.10	Henry Clay switch station retirement	AEP (100%)
b3736.11	Cedar Creek substation work	AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3736.12	Breaks substation 46 kV equipment retirement	AEP (100%)
b3736.13	Retire Pike 29 switch station and Rob Fork switch station	AEP (100%)
b3736.14	Serve Pike 29 and Rob Fork substation customers from nearby 34 kV distribution sources	AEP (100%)
b3736.15	Poor Bottom 69 kV substation install	AEP (100%)
b3736.16	Henry Clay 46 kV substation retirement	AEP (100%)
b3736.17	New Draffin 69 kV substation install	AEP (100%)
b3736.18	Draffin 46 kV substation retirement	AEP (100%)
b3763	Replace the Jug Street 138 kV breakers M, N, BC, BD, BE, BF, D, H, J, L, BG, BH, BJ, BK with 80 KA breakers	AEP (100%)
b3764	Replace the Hyatt 138 kV breakers AB1 and AD1 with 63 kA breakers	AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3766.1	Hayes – New Westville 138 kV line: Build approximately 0.19 miles of 138 kV line to the Indiana/ Ohio State line to connect to AES’s line portion of the Hayes – New Westville 138 kV line with the conductor size 795 ACSR26/7 Drake. This sub-ID includes the cost of line construction and Right of Way (ROW)	AEP (100%)
b3766.2	Hayes – Hodgin 138 kV line: Build approximately 0.05 mile of 138 kV line with the conductor size 795 ACSR26/7 Drake. This sub-ID includes the line construction, ROW, and fiber	AEP (100%)
b3766.3	Hayes 138 kV: Build a new 4-138 kV circuit breaker ring bus. This sub-ID includes the cost of new station construction, property purchase, metering, station fiber and the College Corner – Randolph 138 kV line connection	AEP (100%)

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.6	Perform sag study mitigation work on the Dumont – Stillwell 345 kV line (remove a center-pivot irrigation system from under the line, allowing for the normal and emergency ratings of the line to increase)	<p><b>Reliability Driver:</b> AEP (12.38%) / ComEd (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.7	Upgrade the limiting element at Stillwell or Dumont substation to increase the rating of the Stillwell – Dumont 345 kV line to match conductor rating	<p><b>Reliability Driver:</b> AEP (12.38%) / Dayton (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.10	Perform a sag study on the Olive – University Park 345 kV line to increase the operating temperature to 225 F. Remediation work includes two tower replacements on the line.	<p><b>Reliability Driver:</b> AEP (100%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>
b3775.11	Upgrade the limiting element at Stillwell substation to increase the rating of the Stillwell – Dumont 345 kV line to match conductor rating	<p><b>Reliability Driver:</b> AEP (12.38%) / ComEd (87.62%)</p> <p><b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)</p>

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Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.100	Establish a new 500 kV breaker position for the low-side of the existing 765/500 kV transformer at Cloverdale Station. The new position will be between two new 500 kV circuit breakers located in a new breaker string, electrically converting the 500 kV yard to “double-bus double-breaker” configuration.	<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  AEP (100%)</p>

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**AEP Service Corporation on behalf of its Affiliate Companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company; AEP Ohio Transmission Company; AEP West Virginia Transmission Company; Appalachian Power Company; Indiana Michigan Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.121	Kammer to 502 Junction 500 kV line: Conduct LIDAR Sag Study to assess SE rating and needed upgrades	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      AEP (21.66%) / APS (0.01%) / BGE (7.14%) / DEOK (0.01%) / Dominion (62.25%) / PEPCO (8.93%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(20) Virginia Electric and Power Company**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b1698.7	Replace Loudoun 230 kV breaker '203052' with 63 kA rating	Dominion (100%)
b1696.1	Replace the Idylwood 230 kV '25112' breaker with 50 kA breaker	Dominion (100%)
b1696.2	Replace the Idylwood 230 kV '209712' breaker with 50 kA breaker	Dominion (100%)
b1793.1	Remove the Carolina 22 SPS to include relay logic changes, minor control wiring, relay resets and SCADA programming upon completion of project	Dominion (100%)
b2281	Additional Temporary SPS at Bath County	Dominion (100%)
b2350	Reconductor 211 feet of 545.5 ACAR conductor on 59 Line Elmont - Greenwood DP 115 kV to achieve a summer emergency rating of 906 amps or greater	Dominion (100%)
b2358	Install a 230 kV 54 MVAR capacitor bank on the 2016 line at Harmony Village Substation	Dominion (100%)
b2359	Wreck and rebuild approximately 1.3 miles of existing 230 kV line between Cochran Mill - X4-039 Switching Station	Dominion (100%)
b2360	Build a new 39 mile 230 kV transmission line from Dooms - Lexington on existing right-of-way	Dominion (100%)
b2361	Construct 230 kV OH line along existing Line #2035 corridor, approx. 2.4 miles from Idylwood - Dulles Toll Road (DTR) and 2.1 miles on new right-of-way along DTR to new Scott's Run Substation	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2368	Replace the Brambleton 230 kV breaker '209502' with 63 kA breaker	Dominion (100%)
b2369	Replace the Brambleton 230 kV breaker '213702' with 63 kA breaker	Dominion (100%)
b2370	Replace the Brambleton 230 kV breaker 'H302' with 63 kA breaker	Dominion (100%)
b2373	Build a 2nd Loudoun - Brambleton 500 kV line within the existing ROW. The Loudoun - Brambleton 230 kV line will be relocated as an underbuild on the new 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (83.98%) / Dominion (16.02%)</p>
b2397	Replace the Beaumeade 230 kV breaker '2079T2116' with 63 kA	Dominion (100%)
b2398	Replace the Beaumeade 230 kV breaker '2079T2130' with 63 kA	Dominion (100%)
b2399	Replace the Beaumeade 230 kV breaker '208192' with 63 kA	Dominion (100%)
b2400	Replace the Beaumeade 230 kV breaker '209592' with 63 kA	Dominion (100%)
b2401	Replace the Beaumeade 230 kV breaker '211692' with 63 kA	Dominion (100%)
b2402	Replace the Beaumeade 230 kV breaker '227T2130' with 63 kA	Dominion (100%)

The Annual Revenue Requirement for all Virginia Electric and Power Company projects in this Section 20 shall be as specified in Attachment 7 to Appendix A of Attachment H-16A and under the procedures detailed in Attachment H-16B.

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2403	Replace the Beaumeade 230 kV breaker '274T2130' with 63 kA	Dominion (100%)
b2404	Replace the Beaumeade 230 kV breaker '227T2095' with 63 kA	Dominion (100%)
b2405	Replace the Pleasant view 230 kV breaker '203T274' with 63 kA	Dominion (100%)
b2443	Construct new underground 230 kV line from Glebe to Station C, rebuild Glebe Substation, construct 230 kV high side bus at Station C with option to install 800 MVA PAR	Dominion (97.11%) / ME (0.18%) / PEPCO (2.71%)
b2443.1	Replace the Idylwood 230 kV breaker '203512' with 50 kA	Dominion (100%)
b2443.2	Replace the Ox 230 kV breaker '206342' with 63 kA breaker	Dominion (100%)
b2443.3	Glebe – Station C PAR	<b>DFAX Allocation:</b> Dominion (22.57%) / PEPCO (77.43%)
b2443.6	Install a second 500/230 kV transformer at Possum Point substation and replace bus work and associated equipment as needed	Dominion (100%)
b2443.7	Replace 19 63 kA 230 kV breakers with 19 80 kA 230 kV breakers	Dominion (100%)
b2457	Replace 24 115 kV wood h-frames with 230 kV Dominion pole H-frame structures on the Clubhouse – Purdy 115 kV line	Dominion (100%)
b2458.1	Replace 12 wood H-frame structures with steel H-frame structures and install shunts on all conductor splices on Carolina – Woodland 115 kV	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2458.2	Upgrade all line switches and substation components at Carolina 115 kV to meet or exceed new conductor rating of 174 MVA	Dominion (100%)
b2458.3	Replace 14 wood H-frame structures on Carolina – Woodland 115 kV	Dominion (100%)
b2458.4	Replace 2.5 miles of static wire on Carolina – Woodland 115 kV	Dominion (100%)
b2458.5	Replace 4.5 miles of conductor between Carolina 115 kV and Jackson DP 115 kV with min. 300 MVA summer STE rating; Replace 8 wood H-frame structures located between Carolina and Jackson DP with steel H-frames	Dominion (100%)
b2460.1	Replace Hanover 230 kV substation line switches with 3000A switches	Dominion (100%)
b2460.2	Replace wave traps at Four River 230 kV and Elmont 230 kV substations with 3000A wave traps	Dominion (100%)
b2461	Wreck and rebuild existing Remington CT – Warrenton 230 kV (approx. 12 miles) as a double-circuit 230 kV line	Dominion (100%)
b2461.1	Construct a new 230 kV line approximately 6 miles from NOVEC’s Wheeler Substation a new 230 kV switching station in Vint Hill area	Dominion (100%)
b2461.2	Convert NOVEC’s Gainesville – Wheeler line (approximately 6 miles) to 230 kV	Dominion (100%)
b2461.3	Complete a Vint Hill – Wheeler – Loudoun 230 kV networked line	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2471	Replace Midlothian 500 kV breaker 563T576 and motor operated switches with 3 breaker 500 kV ring bus. Terminate Lines # 563 Carson – Midlothian, #576 Midlothian –North Anna, Transformer #2 in new ring	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2504	Rebuild 115 kV Line #32 from Halifax-South Boston (6 miles) for min. of 240 MVA and transfer Welco tap to Line #32. Moving Welco to Line #32 requires disabling auto-sectionalizing scheme	Dominion (100%)
b2505	Install structures in river to remove the 115 kV #65 line (Whitestone-Harmony Village 115 kV) from bridge and improve reliability of the line	Dominion (100%)
b2542	Replace the Loudoun 500 kV ‘H2T502’ breaker with a 50 kA breaker	Dominion (100%)
b2543	Replace the Loudoun 500 kV ‘H2T584’ breaker with a 50 kA breaker	Dominion (100%)
b2565	Reconductor wave trap at Carver Substation with a 2000A wave trap	Dominion (100%)
b2566	Reconductor 1.14 miles of existing line between ACCA and Hermitage and upgrade associated terminal equipment	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2582	Rebuild the Elmont – Cunningham 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (5.71%) / Dominion (84.43%) / PEPCO (9.86%)</p>
b2583	Install 500 kV breaker at Ox Substation to remove Ox Tx#1 from H1T561 breaker failure outage	Dominion (100%)
b2584	Relocate the Bremono load (transformer #5) to #2028 (Bremono-Charlottesville 230 kV) line and Cartersville distribution station to #2027 (Bremono-Midlothian 230 kV) line	Dominion (100%)
b2585	Reconductor 7.63 miles of existing line between Cranes and Stafford, upgrade associated line switches at Stafford	PEPCO (100%)
b2620	Wreck and rebuild the Chesapeake – Deep Creek – Bowers Hill – Hodges Ferry 115 kV line; minimum rating 239 MVA normal/emergency, 275 MVA load dump rating	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2622	Rebuild Line #47 between Kings Dominion 115 kV and Fredericksburg 115 kV to current standards with summer emergency rating of 353 MVA at 115 kV	Dominion (100%)
b2623	Rebuild Line #4 between Bremono and Structure 8474 (4.5 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV	Dominion (100%)
b2624	Rebuild 115 kV Lines #18 and #145 between Possum Point Generating Station and NOVEC's Smoketown DP (approx. 8.35 miles) to current 230 kV standards with a normal continuous summer rating of 524 MVA at 115 kV	Dominion (100%)
b2625	Rebuild 115 kV Line #48 between Thole Street and Structure 48/71 to current standard. The remaining line to Sewells Point is 2007 vintage. Rebuild 115 kV Line #107 line, Sewells Point to Oakwood, between structure 107/17 and 107/56 to current standard	Dominion (100%)
b2626	Rebuild 115 kV Line #34 between Skiffes Creek and Yorktown and the double circuit portion of 115 kV Line #61 to current standards with a summer emergency rating of 353 MVA at 115 kV	Dominion (100%)
b2627	Rebuild 115 kV Line #1 between Crewe 115 kV and Fort Pickett DP 115 kV (12.2 miles) to current standards with summer emergency rating of 261 MVA at 115 kV	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2628	Rebuild 115 kV Line #82 Everetts – Voice of America (20.8 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV	
		Dominion (100%)
b2629	Rebuild the 115 kV Lines #27 and #67 lines from Greenwich 115 kV to Burton 115 kV Structure 27/280 to current standard with a summer emergency rating of 262 MVA at 115 kV	
		Dominion (100%)
b2630	Install circuit switchers on Gravel Neck Power Station GSU units #4 and #5. Install two 230 kV CCVT's on Lines #2407 and #2408 for loss of source sensing	
		Dominion (100%)
b2636	Install three 230 kV bus breakers and 230 kV, 100 MVAR Variable Shunt Reactor at Dahlgren to provide line protection during maintenance, remove the operational hazard and provide voltage reduction during light load conditions	
		Dominion (100%)
b2647	Rebuild Boydton Plank Rd – Kerr Dam 115 kV Line #38 (8.3 miles) to current standards with summer emergency rating of 353 MVA at 115 kV	
		Dominion (100%)
b2648	Rebuild Carolina – Kerr Dam 115 kV Line #90 (38.7 miles) to current standards with summer emergency rating of 353 MVA 115 kV	
		Dominion (100%)
b2649	Rebuild Clubhouse – Carolina 115 kV Line #130 (17.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV	
		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2649.1	Rebuild of 1.7 mile tap to Metcalf and Belfield DP (MEC) due to poor condition. The existing summer rating of the tap is 48 MVA and existing conductor is 4/0 ACSR on wood H-frames. The proposed new rating is 176 MVA using 636 ACSR conductor		Dominion (100%)
b2649.2	Rebuild of 4.1 mile tap to Brinks DP (MEC) due to wood poles built in 1962. The existing summer rating of the tap is 48 MVA and existing conductor is 4/0 ACSR and 393.6 ACSR on wood H-frames. The proposed new rating is 176 MVA using 636 ACSR conductor		Dominion (100%)
b2650	Rebuild Twittys Creek – Pamplin 115 kV Line #154 (17.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2651	Rebuild Buggs Island – Plywood 115 kV Line #127 (25.8 miles) to current standards with summer emergency rating of 353 MVA at 115 kV. The line should be rebuilt for 230 kV and operated at 115 kV		Dominion (100%)
b2652	Rebuild Greatbridge – Hickory 115 kV Line #16 and Greatbridge – Chesapeake E.C. to current standard with summer emergency rating of 353 MVA at 115 kV		Dominion (100%)
b2653.1	Build 20 mile 115 kV line from Pantego to Trowbridge with summer emergency rating of 353 MVA		Dominion (100%)
b2653.2	Install 115 kV four-breaker ring bus at Pantego		Dominion (100%)
b2653.3	Install 115 kV breaker at Trowbridge		Dominion (100%)
b2654.1	Build 15 mile 115 kV line from Scotland Neck to S Justice Branch with summer emergency rating of 353 MVA. New line will be routed to allow HEMC to convert Dawson’s Crossroads RP from 34.5 kV to 115 kV		Dominion (100%)
b2654.2	Install 115 kV three-breaker ring bus at S Justice Branch		Dominion (100%)
b2654.3	Install 115 kV breaker at Scotland Neck		Dominion (100%)
b2654.3	Install a 2nd 224 MVA 230/115 kV transformer at Hathaway		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2665	Rebuild the Cunningham – Dooms 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (9.35%) / Dominion (73.04%) / PEPCO (17.61%)</p>
b2686	Pratts Area Improvement	Dominion (100%)
b2686.1	Build a 230 kV line from Remington Substation to Gordonsville Substation utilizing existing ROW	Dominion (100%)
b2686.2	Install a 3rd 230/115 kV transformer at Gordonsville Substation	Dominion (100%)
b2686.3	Upgrade Line 2088 between Gordonsville Substation and Louisa CT Station	Dominion (100%)
b2686.4	Replace the Remington CT 230 kV breaker “2114T2155” with a 63 kA breaker	Dominion (100%)
b2686.11	Upgrading sections of the Gordonsville – Somerset 115 kV circuit	Dominion (100%)
b2686.12	Upgrading sections of the Somerset – Doubleday 115 kV circuit	Dominion (100%)
b2686.13	Upgrading sections of the Orange – Somerset 115 kV circuit	Dominion (100%)
b2686.14	Upgrading sections of the Mitchell – Mt. Run 115 kV circuit	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2717.1	De-energize Davis – Rosslyn #179 and #180 69 kV lines	Dominion (100%)
b2717.2	Remove splicing and stop joints in manholes	Dominion (100%)
b2717.3	Evacuate and dispose of insulating fluid from various reservoirs and cables	Dominion (100%)
b2717.4	Remove all cable along the approx. 2.5 mile route, swab and cap-off conduits for future use, leave existing communication fiber in place	Dominion (100%)
b2719.1	Expand Perth substation and add a 115 kV four breaker ring	Dominion (100%)
b2719.2	Extend the Hickory Grove DP tap 0.28 miles to Perth and terminate it at Perth	Dominion (100%)
b2719.3	Split Line #31 at Perth and terminate it into the new ring bus with 2 breakers separating each of the line terminals to prevent a breaker failure from taking out both 115 kV lines	Dominion (100%)
b2720	Replace the Loudoun 500 kV ‘H1T569’ breakers with 50 kA breaker	Dominion (100%)
b2729	Optimal Capacitors Configuration: New 175 MVAR capacitor at Brambleton, new 175 MVAR capacitor at Ashburn, new 300 MVAR capacitor at Shelhorn, new 150 MVAR capacitor at Liberty	AEC (1.96%) / BGE (14.37%) / Dominion (35.11%) / DPL (3.76%) / ECP** (0.29%) / HTP*** (0.34%) / JCPL (3.31%) / ME (2.51%) / NEPTUNE* (0.63%) / PECO (6.26%) / PEPCO (20.23%) / PPL (3.94%) / PSEG (7.29%)

\* Neptune Regional Transmission System, LLC

\*\* East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2744	Rebuild the Carson – Rogers Rd 500 kV circuit	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (4.27%) / Dominion (90.13%) / PEPCO (5.60%)</p>
b2745	Rebuild 21.32 miles of existing line between Chesterfield – Lakeside 230 kV	Dominion (100%)
b2746.1	Rebuild Line #137 Ridge Rd – Kerr Dam 115 kV, 8.0 miles, for 346 MVA summer emergency rating	Dominion (100%)
b2746.2	Rebuild Line #1009 Ridge Rd – Chase City 115 kV, 9.5 miles, for 346 MVA summer emergency rating	Dominion (100%)
b2746.3	Install a second 4.8 MVAR capacitor bank on the 13.8 kV bus of each transformer at Ridge Rd	Dominion (100%)
b2747	Install a Motor Operated Switch and SCADA control between Dominion’s Gordonsville 115 kV bus and FirstEnergy’s 115 kV line	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2757	Install a +/-125 MVar Statcom at Colington 230 kV	Dominion (100%)
b2758	Rebuild Line #549 Doods – Valley 500 kV	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2759	Rebuild Line #550 Mt. Storm – Valley 500 kV	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (47.87%) / DL (1.02%) / Dominion (9.20%) / EKPC (13.57%) / PEPCO (28.34%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2800	The 7 mile section from Dozier to Thompsons Corner of line #120 will be rebuilt to current standards using 768.2 ACSS conductor with a summer emergency rating of 346 MVA at 115 kV. Line is proposed to be rebuilt on single circuit steel monopole structure	Dominion (100%)
b2801	Lines #76 and #79 will be rebuilt to current standard using 768.2 ACSS conductor with a summer emergency rating of 346 MVA at 115 kV. Proposed structure for rebuild is double circuit steel monopole structure	Dominion (100%)
b2802	Rebuild Line #171 from Chase City – Boydton Plank Road tap by removing end-of-life facilities and installing 9.4 miles of new conductor. The conductor used will be at current standards with a summer emergency rating of 393 MVA at 115 kV	Dominion (100%)
b2815	Build a new Pinewood 115 kV switching station at the tap serving North Doswell DP with a 115 kV four breaker ring bus	Dominion (100%)
b2842	Update the nameplate for Mount Storm 500 kV "57272" to be 50 kA breaker	Dominion (100%)
b2843	Replace the Mount Storm 500 kV "G2TY" with 50 kA breaker	Dominion (100%)
b2844	Replace the Mount Storm 500 kV "G2TZ" with 50 kA breaker	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2845	Update the nameplate for Mount Storm 500 kV "G3TSX1" to be 50 kA breaker	Dominion (100%)
b2846	Update the nameplate for Mount Storm 500 kV "SX172" to be 50 kA breaker	Dominion (100%)
b2847	Update the nameplate for Mount Storm 500 kV "Y72" to be 50 kA breaker	Dominion (100%)
b2848	Replace the Mount Storm 500 kV "Z72" with 50 kA breaker	Dominion (100%)
b2871	Rebuild 230 kV line #247 from Swamp to Suffolk (31 miles) to current standards with a summer emergency rating of 1047 MVA at 230 kV	Dominion (100%)
b2876	Rebuild line #101 from Mackeys – Creswell 115 kV, 14 miles, with double circuit structures. Install one circuit with provisions for a second circuit. The conductor used will be at current standards with a summer emergency rating of 262 MVA at 115 kV	Dominion (100%)
b2877	Rebuild line #112 from Fudge Hollow – Lowmoor 138 kV (5.16 miles) to current standards with a summer emergency rating of 314 MVA at 138 kV	Dominion (100%)
b2899	Rebuild 230 kV line #231 to current standard with a summer emergency rating of 1046 MVA. Proposed conductor is 2-636 ACSR	Dominion (100%)
b2900	Build a new 230/115 kV switching station connecting to 230 kV network line #2014 (Earleys – Everetts). Provide a 115 kV source from the new station to serve Windsor DP	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2922	Rebuild 8 of 11 miles of 230 kV lines #211 and #228 to current standard with a summer emergency rating of 1046 MVA for rebuilt section. Proposed conductor is 2-636 ACSR	Dominion (100%)
b2928	Rebuild four structures of 500 kV line #567 from Chickahominy to Surry using galvanized steel and replace the river crossing conductor with 3-1534 ACSR. This will increase the line #567 line rating from 1954 MVA to 2600 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2929	Rebuild 230 kV line #2144 from Winfall to Swamp (4.3 miles) to current standards with a standard conductor (bundled 636 ACSR) having a summer emergency rating of 1047 MVA at 230 kV	Dominion (100%)
b2960	Replace fixed series capacitors on 500 kV Line #547 at Lexington and on 500 kV Line #548 at Valley	See sub-IDs for cost allocations

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2960.1	Replace fixed series capacitors on 500 kV Line #547 at Lexington	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (40.11%) / DEOK (0.71%) / Dominion (9.30%) / EKPC (0.43%) / PEPCO (49.45%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2960.2	Replace fixed series capacitors on 500 kV Line #548 at Valley	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (3.77%) / DEOK (8.84%) / Dominion (78.84%) / EKPC (3.90%) / PEPCO (4.65%)</p>
b2961	Rebuild approximately 3 miles of Line #205 & Line #2003 from Chesterfield to Locks & Poe respectively	Dominion (100%)
b2962	Split Line #227 (Brambleton – Beaumeade 230 kV) and terminate into existing Belmont substation	Dominion (100%)
b2962.1	Replace the Beaumeade 230 kV breaker “274T2081” with 63 kA breaker	Dominion (100%)
b2962.2	Replace the NIVO 230 kV breaker “2116T2130” with 63 kA breaker	Dominion (100%)
b2963	Reconductor the Woodbridge to Occoquan 230 kV line segment of Line #2001 with 1047 MVA conductor and replace line terminal equipment at Possum Point, Woodbridge, and Occoquan	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2978	Install 2-125 MVAR STATCOMs at Rawlings and 1-125 MVAR STATCOM at Clover 500 kV substations	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b2980	Rebuild 115 kV Line #43 between Staunton and Harrisonburg (22.8 miles) to current standards with a summer emergency rating of 261 MVA at 115 kV	Dominion (100%)
b2981	Rebuild 115 kV Line #29 segment between Fredericksburg and Aquia Harbor to current 230 kV standards (operating at 115 kV) utilizing steel H-frame structures with 2-636 ACSR to provide a normal continuous summer rating of 524 MVA at 115 kV (1047 MVA at 230 kV)	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b2989	Install a second 230/115 kV Transformer (224 MVA) approximately 1 mile north of Bremono and tie 230 kV Line #2028 (Bremono – Charlottesville) and 115 kV Line #91 (Bremono - Sherwood) together. A three breaker 230 kV ring bus will split Line #2028 into two lines and Line #91 will also be split into two lines with a new three breaker 115 kV ring bus. Install a temporary 230/115 kV transformer at Bremono substation for the interim until the new substation is complete		Dominion (100%)
b2990	Chesterfield to Basin 230 kV line – Replace 0.14 miles of 1109 ACAR with a conductor which will increase the line rating to approximately 706 MVA		Dominion (100%)
b2991	Chaparral to Locks 230 kV line – Replace breaker lead		Dominion (100%)
b2994	Acquire land and build a new switching station (Skippers) at the tap serving Brink DP with a 115 kV four breaker ring to split Line #130 and terminate the end points		Dominion (100%)
b3018	Rebuild Line #49 between New Road and Middleburg substations with single circuit steel structures to current 115 kV standards with a minimum summer emergency rating of 261 MVA		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3019	Rebuild 500 kV Line #552 Bristers to Chancellor – 21.6 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%)                      / APS (5.76%) / ATSI (8.04%)                      / BGE (4.11%) / ComEd                      (13.39%) / Dayton (2.12%) /                      DEOK (3.25%) / DL (1.71%) /                      DPL (2.60%) / Dominion                      (13.32%) / EKPC (1.89%) /                      JCPL (3.86%) / ME (1.90%) /                      NEPTUNE* (0.42%) / OVEC                      (0.08%) / PECO (5.40%) /                      PENELEC (1.78%) / PEPCO                      (3.67%) / PPL (4.72%) / PSEG                      (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      BGE (6.89%) / Dominion                      (85.01%) / PEPCO (8.10%)</p>
b3019.1	Update the nameplate for Morrisville 500 kV breaker “H1T594” to be 50 kA	Dominion (100%)
b3019.2	Update the nameplate for Morrisville 500 kV breaker “H1T545” to be 50 kA	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3020	Rebuild 500 kV Line #574 Ladysmith to Elmont – 26.2 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      APS (16.36%) / DEOK (11.61%) / Dominion (51.27%) / EKPC (5.30%) / PEPCO (15.46%)</p>
b3021	Rebuild 500 kV Line #581 Ladysmith to Chancellor – 15.2 miles long	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (92.28%) / PEPCO (7.72%)</p>
b3026	Reconductor Line #274 (Pleasant View – Ashburn – Beaumeade 230 kV) with a minimum rating of 1200 MVA. Also upgrade terminal equipment	Dominion (100%)

\*Neptune Regional Transmission System, LLC

## Virginia Electric and Power Company (cont.)

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3027.1	Add a 2nd 500/230 kV 840 MVA transformer at Dominion's Ladysmith substation	Dominion (100%)
b3027.2	Reconductor 230 kV Line #2089 between Ladysmith and Ladysmith CT substations to increase the line rating from 1047 MVA to 1225 MVA	Dominion (100%)
b3027.3	Replace the Ladysmith 500 kV breaker "H1T581" with 50 kA breaker	Dominion (100%)
b3027.4	Update the nameplate for Ladysmith 500 kV breaker "H1T575" to be 50 kA breaker	Dominion (100%)
b3027.5	Update the nameplate for Ladysmith 500 kV breaker "568T574" (will be renumbered as "H2T568") to be 50 kA breaker	Dominion (100%)
b3055	Install spare 230/69 kV transformer at Davis substation	Dominion (100%)
b3056	Partial rebuild 230 kV Line #2113 Waller to Lightfoot	Dominion (100%)
b3057	Rebuild 230 kV Lines #2154 and #19 Waller to Skiffes Creek	Dominion (100%)
b3058	Partial rebuild of 230 kV Lines #265, #200 and #2051	Dominion (100%)
b3059	Rebuild 230 kV Line #2173 Loudoun to Elclick	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3060	Rebuild 4.6 mile Elclick – Bull Run 230 kV Line #295 and the portion (3.85 miles) of the Clifton – Walney 230 kV Line #265 which shares structures with Line #295	Dominion (100%)
b3088	Rebuild 4.75 mile section of Line #26 between Lexington and Rockbridge with a minimum summer emergency rating of 261 MVA	Dominion (100%)
b3089	Rebuild 230 kV Line #224 between Lanexa and Northern Neck utilizing double circuit structures to current 230 kV standards. Only one circuit is to be installed on the structures with this project with a minimum summer emergency rating of 1047 MVA	Dominion (100%)
b3090	Convert the overhead portion (approx. 1500 feet) of 230 kV Lines #248 & #2023 to underground and convert Glebe substation to gas insulated substation	Dominion (100%)
b3096	Rebuild 230 kV line No.2063 (Clifton – Ox) and part of 230 kV line No.2164 (Clifton – Keene Mill) with double circuit steel structures using double circuit conductor at current 230 kV northern Virginia standards with a minimum rating of 1200 MVA	Dominion (100%)
b3097	Rebuild 4 miles of 115 kV Line #86 between Chesterfield and Centralia to current standards with a minimum summer emergency rating of 393 MVA	Dominion (100%)
b3098	Rebuild 9.8 miles of 115 kV Line #141 between Balcony Falls and Skimmer and 3.8 miles of 115 kV Line #28 between Balcony Falls and Cushaw to current standards with a minimum rating of 261 MVA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3098.1	Rebuild Balcony Falls 115 kV substation	Dominion (100%)
b3110.1	Rebuild Line #2008 between Loudoun to Dulles Junction using single circuit conductor at current 230 kV northern Virginia standards with minimum summer ratings of 1200 MVA. Cut and loop Line #265 (Clifton – Sully) into Bull Run substation. Add three (3) 230 kV breakers at Bull Run to accommodate the new line and upgrade the substation	Dominion (100%)
b3110.2	Replace the Bull Run 230 kV breakers “200T244” and “200T295” with 50 kA breakers	Dominion (100%)
b3110.3	Replace the Clifton 230 kV breakers “201182” and “XT2011” with 63 kA breakers	Dominion (100%)
b3113	Rebuild approximately 1 mile of 115 kV Lines #72 and #53 to current standards with a minimum summer emergency rating of 393 MVA. The resulting summer emergency rating of Line #72 segment from Brown Boveri to Bellwood is 180 MVA. There is no change to Line #53 ratings	Dominion (100%)
b3114	Rebuild the 18.6 mile section of 115 kV Line #81 which includes 1.7 miles of double circuit Line #81 and 230 kV Line #2056. This segment of Line #81 will be rebuilt to current standards with a minimum rating of 261 MVA. Line #2056 rating will not change	Dominion (100%)
b3121	Rebuild Clubhouse – Lakeview 230 kV Line #254 with single-circuit wood pole equivalent structures at the current 230 kV standard with a minimum rating of 1047 MVA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3122	Rebuild Hathaway – Rocky Mount (Duke Energy Progress) 230 kV Line #2181 and Line #2058 with double circuit steel structures using double circuit conductor at current 230 kV standards with a minimum rating of 1047 MVA		Dominion (100%)
b3161.1	Split Chesterfield-Plaza 115 kV Line No. 72 by rebuilding the Brown Boveri tap line as double circuit loop in-and-out of the Brown Boveri Breaker station		Dominion (100%)
b3161.2	Install a 115 kV breaker at the Brown Boveri Breaker station. Site expansion is required to accommodate the new layout		Dominion (100%)
b3162	Acquire land and build a new 230 kV switching station (Stevensburg) with a 224 MVA, 230/115 kV transformer. Gordonsville-Remington 230 kV Line No. 2199 will be cut and connected to the new station. Remington-Mt. Run 115 kV Line No.70 and Mt. Run-Oak Green 115 kV Line No. 2 will also be cut and connected to the new station		Dominion (100%)
b3211	Rebuild the 1.3 mile section of 500 kV Line No. 569 (Loudoun – Morrisville) with single-circuit 500 kV structures at the current 500 kV standard. This will increase the rating of the line to 3424 MVA		Dominion (100%)
b3213	Install 2nd Chickahominy 500/230 kV transformer		Dominion (100%)
b3213.1	Replace the eight (8) Chickahominy 230 kV breakers with 63 kA breakers: “SC122”, “205022”, “209122”, 210222-2”, “28722”, “H222”, “21922” and “287T2129”		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3223.1	Install a second 230 kV circuit with a minimum summer emergency rating of 1047 MVA between Lanexa and Northern Next substations. The second circuit will utilize the vacant arms on the double-circuit structures that are being installed on Line #224 (Lanexa – Northern Next) as part of the End-of-Life rebuild project (b3089)		Dominion (100%)
b3223.2	Expand the Northern Neck terminal from a 230 kV, 4-breaker ring bus to a 6-breaker ring bus		Dominion (100%)
b3223.3	Expand the Lanexa terminal from a 6-breaker ring bus to a breaker-and-a-half arrangement		Dominion (100%)
b3246.1	Convert 115 kV Line #172 Liberty – Lomar and 115 kV Line #197 Cannon Branch – Lomar to 230 kV to provide a new 230 kV source between Cannon Branch and Liberty. The majority of 115 kV Line #172 Liberty – Lomar and Line #197 Cannon Branch – Lomar is adequate for 230 kV operation. Rebuild 0.36 mile segment between the Lomar and Cannon Branch junction. Lines will have a summer rating of 1047MVA/1047MVA (SN/SE)		Dominion (100%)
b3246.2	Perform substation work for the 115 kV to 230 kV line conversion at Liberty, Wellington, Godwin, Pioneer, Sandlot and Cannon Branch		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3246.3	Extend 230 kV Line #2011 Cannon Branch – Clifton to Winters Branch by removing the existing Line #2011 termination at Cannon Branch and extending the line to Brickyard creating 230 kV Line #2011 Brickyard - Clifton. Extend a new 230 kV line between Brickyard and Winters Branch with a summer rating of 1572MVA/1572MVA (SN/SE)		Dominion (100%)
b3246.4	Perform substation work at Cannon Branch, Brickyard and Winters Branch for the 230 kV Line #2011 Cannon Branch – Clifton extension		Dominion (100%)
b3246.5	Replace the Gainesville 230 kV 40 kA breaker “216192” with a 50 kA breaker		Dominion (100%)
b3247	Replace 13 towers with galvanized steel towers on Doubs – Goose Creek 500 kV. Reconductor 3 mile section with three (3) 1351.5 ACSR 45/7. Upgrade line terminal equipment at Goose Creek substation to support the 500 kV line rebuild		<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3262	Install a second 115 kV 33.67 MVAR cap bank at Harrisonburg substation along with a 115 kV breaker		Dominion (100%)
b3263	Cut existing 115 kV Line #5 between Bremono and Cunningham substations and loop in and out of Fork Union substation		Dominion (100%)
b3264	Install 40 kA breaker at Stuarts Draft 115 kV station and sectionalize the Doom to Dupont-Waynesboro 115 kV Line #117 into two 115 kV lines		Dominion (100%)
b3268	Build a switching station at the junction of 115 kV line #39 and 115 kV line #91 with a 115 kV capacitor bank. The switching station will be built with 230 kV structures but will operate at 115 kV		Dominion (100%)
b3300	Reconductor 230 kV Line #2172 from Brambleton to Evergreen Mills along with upgrading the line leads at Brambleton to achieve a summer emergency rating of 1574 MVA		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3301	Reconductor 230 kV Line #2210 from Brambleton to Evergreen Mills along with upgrading the line leads at Brambleton to achieve a summer emergency rating of 1574 MVA		Dominion (100%)
b3302	Reconductor 230 kV Line #2213 from Cabin Run to Yardley Ridge along with upgrading the line leads at Yardley to achieve a summer emergency rating of 1574 MVA		Dominion (100%)
b3303.1	Extend a new single circuit 230 kV Line #9250 from Farmwell substation to Nimbus substation		Dominion (100%)
b3303.2	Remove Beaumeade 230 kV Line #2152 line switch		Dominion (100%)
b3304	Midlothian area improvements for 300 MW load drop relief		Dominion (100%)
b3304.1	Cut 230 kV Line #2066 at Trabue junction		Dominion (100%)
b3304.2	Reconductor idle 230 kV Line #242 (radial from Midlothian to Trabue junction) to allow a minimum summer rating of 1047 MVA and connect to the section of 230 kV Line #2066 between Trabue junction and Winterpock, re-number 230 kV Line #242 structures to Line #2066		Dominion (100%)
b3304.3	Use the section of idle 115 kV Line #153, between Midlothian and Trabue junction to connect to the section of (former) 230 kV Line #2066 between Trabue junction and Trabue to create new Midlothian – Trabue lines with new line numbers #2218 and #2219		Dominion (100%)
b3304.4	Create new line terminations at Midlothian for the new Midlothian – Trabue 230 kV lines		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3684	Rebuild 12.4 miles of 115 kV line from Earleys to Kelford with a summer emergency rating of 262 MVA. Replace structures as needed to support the new conductor. Upgrade breaker switch 13668 at Earleys from 1200 A to 2000 A	Dominion (100%)
b3685	Install a 33 MVAR cap bank at Cloud 115 kV bus along with a 115 kV breaker. Add 115 kV circuit breaker for 115 kV Line #38	Dominion (100%)
b3686	Purchase land close to the bifurcation point of 115 kV Line #4 (where the line is split into two sections) and build a new 115 kV switching station called Duncan Store. The new switching station will require space for an ultimate transmission interconnection consisting of a 115 kV six-breaker ring bus (with three breakers installed initially)	Dominion (100%)
b3687	Rebuild approximately 15.1 miles line segment between Bristers and Minnieville D.P. with 2-768 ACSS and 4000 A supporting equipment from Bristers to Ox to allow for future 230 kV capability of 115 kV Line #183. The continuous summer normal rating will be 523 MVA for line Ox – Minnieville. The continuous summer normal rating will be 786 MVA for Minnieville – Bristers line	Dominion (100%)
b3689.1	Reconductor approximately 24.42 miles of 230 kV Line #2114 Remington CT– Elk Run – Gainesville to achieve a summer rating of 1574 MVA by fully reconductoring the line and upgrading the wave trap and substation conductor at Remington CT and Gainesville 230 kV stations	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3689.2	Replace 230 kV breakers SC102, H302, H402 and 218302 at Brambleton substation with 4000A 80 kA breakers and associated equipment including breaker leads as necessary to address breaker duty issues identified in short circuit analysis	Dominion (100%)
b3690	Reconductor approximately 1.07 miles of 230 kV Line #2008 segment from Cub Run to Walney to achieve a summer rating of 1574 MVA. Replace line switch 200826 with a 4000A switch	Dominion (100%)
b3691	Reconductor approximately 1.4 miles of 230 kV Line #2141 from Lakeview to Carolina to achieve a summer rating of 1047 MVA	Dominion (100%)
b3692	Rebuild approximately 27.7 miles of 500 kV transmission line from Elmont to Chickahominy with current 500 kV standards construction practices to achieve a summer rating of 4330 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3693	Expand substation and install approximately 294 MVAR cap bank at 500 kV Lexington substation along with a 500 kV breaker. Adjust the tap positions associated with the two 230/69 kV transformers at Harrisonburg to neutral position and lock them	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / DPL (2.60%) / Dominion (13.32%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3694.1	Convert 115 kV Line #29 Aquia Harbour to Possum Point to 230 kV (Extended Line #2104) and swap Line #2104 and converted Line #29 at Aquia Harbour backbone termination. Upgrade terminal equipment at Possum Point to terminate converted Line #29 (now extended line #2104). (Line #29 from Fredericksburg to Aquia Harbour is being rebuilt under baseline b2981 to 230 kV standards)	<p>Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.2	Upgrade Aquia Harbour terminal equipment to not limit 230 kV Line #9281 conductor rating	Dominion (100%)
b3694.3	Upgrade Fredericksburg terminal equipment by rearranging 230 kV bus configuration to terminate converted Line #29 (now becoming 9281). The project will add a new breaker at the 230 kV bay and reconfigure line termination of 230 kV Line #2157, #2090 and #2083	Dominion (100%)
b3694.4	Reconductor/rebuild approximately 7.6 miles of 230 kV Line #2104 Cranes Corner – Stafford to achieve a summer rating of 1047 MVA. Reconductor/rebuild approximately 0.34 miles of 230 kV Line #2104 Stafford – Aquia Harbour to achieve a summer rating of 1047 MVA. Upgrade terminal equipment at Cranes Corner to not limit the new conductor rating	Dominion (100%)
b3694.5	Upgrade wave trap and line leads at 230 kV Line #2090 Ladysmith CT terminal to achieve 4000A rating	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.6	Upgrade Fuller Road substation to feed Quantico substation via 115 kV radial line. Install four-breaker ring bus and break 230 kV Line #252 into two new lines: 1) Line #252 between Aquia Harbour and Fuller Road and 2) Line #9282 between Fuller Road and Possum Point. Install a 230/115 kV transformer which will serve Quantico substation	Dominion (100%)
b3694.7	Energize in-service spare 500/230 kV Carson Transformer #1	Dominion (100%)
b3694.8	Partial wreck and rebuild 10.34 miles of 230 kV Line #249 Carson – Locks to achieve a minimum summer emergency rating of 1047 MVA. Upgrade terminal equipment at Carson and Locks stations to not limit the new conductor rating	Dominion (100%)
b3694.9	Wreck and rebuild 5.4 miles of 115 kV Line #100 Locks – Harrowgate to achieve a minimum summer emergency rating of 393 MVA. Upgrade terminal equipment at Locks and Harrowgate stations to not limit the new conductor rating and perform Line #100 Chesterfield terminal relay work	Dominion (100%)
b3694.10	Reconductor approximately 2.9 miles of 230 kV Line #211 Chesterfield – Hopewell to achieve a minimum summer emergency rating of 1046 MVA	Dominion (100%)
b3694.11	Reconductor approximately 2.9 miles of 230 kV Line #228 Chesterfield – Hopewell to achieve a minimum summer emergency rating of 1046 MVA	Dominion (100%)
b3694.12	Upgrade equipment at Chesterfield 230 kV substation to not limit ratings on Line #211 and #228	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3694.13	Upgrade equipment at Hopewell 230 kV substation to not limit ratings on Line #211 and #228	Dominion (100%)
b3702	Install one 13.5 Ohm series reactor to control the power flow on the 230 kV Line #2054 from Charlottesville substation to Proffit Rd. 230 kV line	AEC (1.59%) / APS (8.85%) / ATSI (5.54%) / BGE (10.79%) / ComEd (1.86%) / Dayton (0.21%) / DEOK (1.16%) / Dominion (18.99%) / DPL (3.68%) / DL (1.16%) / ECP** (0.27%) / HTP*** (0.22%) / JCPL (4.53%) / ME (1.73%) / NEPTUNE* (0.68%) / PECO (6.95%) / PENELEC (4.75%) / PEPCO (9.69%) / PPL (9.78%) / PSEG (7.28%) / RE (0.29%)
b3707.1	Reconductor approximately 0.57 mile of 115 kV Line #1021 from Harmony Village to Greys Point with 768 ACSS to achieve a summer emergency rating of 237 MVA. The current conductor is 477 ACSR	Dominion (100%)
b3707.2	Reconductor approximately 0.97 mile of 115 kV Line #65 from Rappahannock to White Stone with 768 ACSS to achieve a summer emergency rating of 237 MVA. The current conductor is 477 ACSR	Dominion (100%)
b3759	Reconductor approximately 10.5 miles of 115 kV Line #23 segment from Oak Ridge to AC2-079 Tap to minimum emergency ratings of 393 MVA Summer / 412 MVA Winter	Dominion (100%)

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\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3779	Cut existing 230 kV line #2183 and extend from Poland Road substation to Evergreen Mills substation. Approximately 0.59 miles of new line will be built from the cut-in to the Evergreen Mills substation. Cut and extend the existing 230 kV line #2183 creating a new line #2210 from Brambleton substation to be terminated at Evergreen Mills substation. Approximately 0.59 miles of new line will be built from the cut-in to the Evergreen Mills substation		Dominion (100%)
b3800.118	Line work for terminating Doubs to Bismark line into Woodside 500 kV substation (DOM Portion)		<p><b>Load-Ratio Share Allocation:</b>            AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>            APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPSCO (7.42%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.120	Aspen substation work to terminate the new NextEra 500 kV line. Include Aspen 500 kV substation portion build	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</p>
b3800.200	Build a new 500 kV line from Aspen - Golden on 500/230 kV double circuit structures with substation upgrades at Aspen and Golden. New conductor to have a minimum summer normal rating of 4357 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3800.201	Install two 500/230 kV transformer at Golden substation	Dominion (100%)
b3800.202	Install one 500/230 kV transformer at Aspen substation	Dominion (86.28%) / PEPCO (13.72%)

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## Virginia Electric and Power Company (cont.)

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.203	Install a second 500/230 kV 1440 MVA transformer at Mars substation	Dominion (100%)
b3800.204	Reconductor 0.5 mile section of 230 kV line No. 2150 Golden - Paragon Park Circuit 1 to achieve a summer rating of 1573 MVA	Dominion (100%)
b3800.205	Reconductor 0.5 mile section of 230 kV line No. 2081 Golden - Paragon Park Circuit 2 to achieve a summer rating of 1573 MVA	Dominion (100%)
b3800.206	Upgrade Paragon Park substation line conductors to 4000A continuous current rating for 230 kV lines No. 2081 and No. 2150	Dominion (100%)
b3800.207	Reconductor 230 kV line No. 2207 Paragon Park – BECO to achieve a summer rating of 1573 MVA	Dominion (100%)
b3800.208	Upgrade Paragon Park substation conductor and line leads to 4000A continuous current rating for 230 kV line No. 2207	Dominion (100%)
b3800.209	Upgrade BECO substation equipment to 4000A continuous current rating for 230 kV line No.2207	Dominion (100%)
b3800.210	Build a new 230 kV line from Mars - Lockridge on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Mars and Lockridge substations	Dominion (100%)
b3800.211	Build a new 230 kV line from Lockridge - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Lockridge substations	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.212	Build a new 500 kV line from Mars - Golden on 500/230 kV double circuit structures with substation upgrades at Golden and Mars. New conductor to have a minimum summer normal rating of 4357 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (99.96%) / Dominion (0.04%)</p>
b3800.213	Cut 500 kV line No. 558 Brambleton - Goose Creek into Aspen substation. Upgrade 500 kV terminal equipment at Aspen and Goose Creek to 5000A continuous rating current. At Goose Creek, replace circuit breakers 59582 and 55882, and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (99.39%) / Dominion (0.61%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.214	Build a new 500 kV line from Aspen - Goose Creek to achieve a summer rating of 4357 MVA. Install new 500 kV terminal equipment at Aspen	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (99.39%) / Dominion (0.61%)</p>
b3800.215	Cut 230 kV line No. 2150 Sterling Park - Paragon Park Circuit 1 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2150 to 4000A continuous current rating	Dominion (100%)
b3800.216	Cut 230 kV line No. 2081 Sterling Park - Paragon Park Circuit 2 into Golden substation and install 230 kV equipment at Golden. Upgrade relay settings at Golden substation for upgrading 230 kV line No. 2081 to 4000A continuous current rating	Dominion (100%)
b3800.217	Build a new 230 kV line from Aspen - Sycolin Creek on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations	Dominion (86.28%) / PEPCO (13.72%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.218	Build a new 230 kV line from Sycolin Creek - Golden on 500/230 kV double circuit structures to achieve a summer rating of 1573 MVA. Install 230 kV equipment at Golden and Sycolin Creek substations	Dominion (100%)
b3800.219	Replace seven overdutied 230 kV breakers at Beaumeade substation with 80 kA breakers	Dominion (100%)
b3800.220	Replace four overdutied 230 kV breakers at BECO substation with 80 kA breakers	Dominion (100%)
b3800.221	Replace four overdutied 230 kV breakers at Belmont substation with 80 kA breakers	Dominion (100%)
b3800.222	Replace one overdutied 230 kV breaker at Discovery substation with 80 kA breaker	Dominion (100%)
b3800.223	Replace one overdutied 230 kV breaker at Pleasant View substation with 80 kA breaker	Dominion (100%)
b3800.224	Replace two overdutied 230 kV breakers at Shellhorn substation with 80 kA breakers	Dominion (100%)
b3800.225	Change 500 kV line No. 558 destination at Brambleton to Aspen substation and upgrade line protection relays	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (5.20%) / DL (0.46%) / Dominion (91.40%) / ME (0.59%) / PEPCO (2.35%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.226	Change 230 kV lines No. 2081 and No. 2150 at Paragon Park substation destination to Golden substation and upgrade line protection relays	Dominion (100%)
b3800.227	Change 230 kV lines No. 2081 and No. 2150 at Sterling Park substation destination to Golden substation and upgrade line protection relays	Dominion (100%)
b3800.228	Reconductor 1.47 miles of 230 kV lines No. 2081 and No. 2150 from Sterling Park to Golden substation. Upgrade terminal equipment at Sterling Park to 4000A continuous current	Dominion (100%)
b3800.229	Reconductor 0.67 miles of 230 kV lines No. 2194 and No. 9231 from Davis Drive to Sterling Park substation. Terminal equipment at remote end substations will be installed or upgraded to 4000A continuous current rating to support new conductor ratings	Dominion (100%)
b3800.230	Reset relays at Breezy Knoll for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton	Dominion (100%)
b3800.231	Reset relays at Dry Mill for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton	Dominion (100%)
b3800.232	Reset relays at Hamilton for the revised current rating of 230 kV line No. 2098 Pleasant View - Hamilton	Dominion (100%)
b3800.233	Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 2098 wreck and rebuild. Replace circuit breakers 274T2098 & 2098T2180 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.234	Wreck and rebuild approximately one mile of 230 kV line No. 2098 between Pleasant View and structure 2098/9, where line No. 2098 turns towards Hamilton substation	Dominion (100%)
b3800.235	Replace five overdutied 230 kV breakers at Loudoun substation with 80 kA breakers	Dominion (100%)
b3800.236	Replace two overdutied 230 kV breakers at Ox substation with 63 kA breakers	Dominion (100%)
b3800.237	Replace two overdutied 230 kV breakers at Pleasant View substation with 63 kA breakers	Dominion (100%)
b3800.238	Upgrade equipment to 4000A continuous current rating at Pleasant View substation in support of 230 kV line No. 203 rebuild. Replace circuit breakers 203T274 & L3T203 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 4000A rating	APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)
b3800.239	Wreck and rebuild 230 kV line No. 203 between Pleasant View and structure 203/15 using double circuit 500/230 kV structures. The 500 kV line is from Aspen - Doubs	APS (8.09%) / BGE (8.25%) / Dominion (64.87%) / PEPCO (18.79%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.240	Build a new 500 kV line from Aspen - Doubs using double circuit 500/230 kV structures. The 230 kV line is from Pleasant View - structure 203/15. Install terminal equipment at Aspen for a 5000A line to Doubs. This includes GIS breakers, GIS-to-AIS transition equipment, and metering CCVTs and CTs for the tie line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (0.09%) / Dominion (99.89%) / PEPCO (0.02%)</p>
b3800.241	Rebuild 500 kV line No. 514 from Goose Creek - Doubs using 500/230 kV double circuit structures. The new double circuit towers will accommodate 230 kV line No. 2098 between Pleasant View substation and structure 2098/9. Upgrade equipment at Goose Creek to 5000A continuous current rating in support of line No. 514 wreck and rebuild. Replace circuit breakers 514T595 & 51482 and associated disconnect switches, breaker leads, bus, and line risers to accommodate 5000A rating	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (0.08%) / Dominion (99.90%) / PEPCO (0.02%)</p>
b3800.242	Upgrading switches 20366M and 20369M and line leads to 4000A continuous current rating of 230 kV line No. 203 at Edwards Ferry substation	<p>APS (11.45%) / BGE (14.14%) / Dominion (42.82%) / PEPCO (31.59%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.300	Rebuild 230 kV line No. 2135 Hollymeade Junction – Cash’s Corner using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project)	Dominion (100%)
b3800.301	Rebuild 230 kV line No. 2135 Cash’s Corner - Gordonsville using double-circuit capable 500/230 kV poles. New conductor has a summer rating of 1573 MVA. (The 500 kV circuit will not be wired as part of this project)	Dominion (100%)
b3800.302	Upgrade Cash’s Corner switches 213576 and 213579 and line leads to 4000A continuous current rating of 230 kV line No. 2135	Dominion (100%)
b3800.303	Upgrade Gordonsville substation line leads to 4000A continuous current rating of 230 kV line No. 2135	Dominion (100%)
b3800.304	Upgrade Hollymeade substation switch 213549 and line leads to 4000A continuous current rating of 230 kV line No. 2135	Dominion (100%)
b3800.305	Install one 230 kV 300 MVAR STATCOM and associated equipment at Beaumeade 230 kV substation	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.306	Install one 500 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Morrisville substation. This addition will require a control house expansion to accommodate for two new panels	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3800.307	Install one 500 kV, 300 MVAR STATCOM and associated equipment at Mars substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3800.308	Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Mars substation	<p>Dominion (100%)</p>
b3800.309	Install one 230 kV, 150 MVAR Shunt Capacitor Bank and associated equipment at Wishing Star substation	<p>Dominion (100%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.310	Install one 500 kV, 293.8 MVAR Shunt Capacitor Bank & associated equipment at Wishing Star substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (100%)</p>
b3800.311	Rebuild 500 kV line No. 545 Bristers - Morrisville as a single circuit monopole line to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (91.07%) / PEPCO (8.93%)</p>

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.312	Rebuild 500 kV line No. 569 Loudoun - Morrisville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (11.72%) / Dominion (88.28%)</p>
b3800.313	Rebuild approximately 10.29 miles 500 kV line segment of line No. 535 (Meadow Brook to Loudoun) to accommodate the new 500 kV line in the existing ROW	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)</p>

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.314	Rebuild approximately 4.83 miles of 500 kV line No. 546 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 546	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)</p>
b3800.315	Rebuild approximately 4.59 miles of 500 kV line No. 590 Mosby - Wishing Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 4357 MVA. Upgrade and install equipment at Mosby substation to upgrade terminal equipment to be rated for 5000A for 500 kV line No. 590	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (41.98%) / Dominion (34.03%) / PEPCO (23.99%)</p>
b3800.316	Rebuild approximately 6.17 miles of 230 kV line No. 2030 Gainesville - Mint Springs to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA	<p style="text-align: center;">Dominion (100%)</p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3800.317	Rebuild approximately 1.58 miles of 230 kV line No. 2030 Mint Springs - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.318	Rebuild approximately 4.2 miles of 230 kV line No. 2045 Loudoun - North Star to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.319	Rebuild approximately 0.88 miles of 230 kV line No. 2045 North Star - Brambleton to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.320	Rebuild approximately 1.22 miles of 230 kV line No. 2227 Brambleton - Racefield to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.321	Rebuild approximately 3.69 miles of 230 kV line No. 2094 Racefield - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.322	Rebuild approximately 9.16 miles of 230 kV line No. 2101 Bristers - Nokesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.323	Rebuild approximately 2.89 miles of 230 kV line No. 2101 Nokesville - Vint Hill TP to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3800.324	Rebuild approximately 0.33 miles of 230 kV line No. 2101 Vint Hill TP - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.325	Rebuild approximately 3.32 miles of 230 kV line No. 2114 Rollins Ford - Vint Hill to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.326	Rebuild approximately 10.09 miles of 230 kV line No. 2114 Vint Hill - Elk Run to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.327	Rebuild approximately 4.43 miles of 230 kV line No. 2140 Heathcote - Catharpin to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.328	Rebuild approximately 2.88 miles of 230 kV line No. 2140 Catharpin - Loudoun to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.329	Rebuild approximately 0.25 miles of 230 kV line No. 2151 Railroad DP - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)
b3800.330	Rebuild approximately 4.14 miles of 230 kV line No. 2163 Vint Hill - Liberty to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.331	Rebuild approximately 0.48 miles of 230 kV line No. 2176 Heathcote - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA	Dominion (100%)
b3800.332	Rebuild approximately 1.11 miles of 230 kV line No. 2222 Rollins Ford - Gainesville to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA	Dominion (100%)
b3800.333	Rebuild approximately 1.65 miles of 115 kV line No. 183 Bristers - Ox to accommodate the new 500 kV line in the existing ROW. New conductor to have a summer rating of 1573 MVA	Dominion (100%)
b3800.334	Replace four overdutied 230 kV breakers at Loudoun Substation with 80 kA breakers	Dominion (100%)
b3800.335	Replace one overdutied 500 kV breaker at Ox Substation with a 63 kA breaker	Dominion (100%)
b3800.336	Upgrade and install equipment at Bristers substation to support the new conductor 5000A rating for 500 kV line No. 545	<p><b>Load-Ratio Share Allocation:</b>            AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPSCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>            Dominion (91.07%) / PEPSCO (8.93%)</p>

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement		Responsible Customer(s)
b3800.337	Upgrade and install equipment at Brambleton substation to support the new conductor termination. All terminal equipment for 230 kV lines No. 2045 and No. 2094 to be rated for 4000A continuous current rating		Dominion (100%)
b3800.338	Revise relay settings at Dawkins Branch 230 kV station		Dominion (100%)
b3800.339	Upgrade and install equipment at Gainesville 230 kV substation to support the new conductor termination. All terminal equipment for 230 kV line No. 2030 to be rated for 4000A continuous current rating		Dominion (100%)
b3800.340	Revise relay settings at Heathcote 230 kV station		Dominion (100%)
b3800.341	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2094 Loudoun - Racefield to be rated for 4000A continuous current rating		Dominion (100%)
b3800.342	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2045 Loudoun - North Star to be rated for 4000A continuous current rating		Dominion (100%)
b3800.343	Upgrade and install equipment at Loudoun substation for 230 kV line No. 2030 Loudoun - Mint Springs to be rated for 4000A continuous current rating		Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.344	Upgrade and install equipment at Loudoun substation to support the new conductor 5000A rating for 500 kV line No. 569 Loudoun - Morrisville	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (11.72%) / Dominion (88.28%)</p>
b3800.345	Revise relay settings at 230 kV Mint Springs station	Dominion (100%)
b3800.346	Upgrade and install equipment at Morrisville substation to support the new 500 kV conductor termination. All terminal equipment to be rated for 5000A for 500 kV line No. 545 and No. 569. Upgrade 500 kV bus 2 to 5000A	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (11.72%) / Dominion (88.28%)</p>
b3800.347	Revise relay settings at North Star 230 kV station	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.348	Revise relay settings at Racefield 230 kV station	Dominion (100%)
b3800.349	Revise relay settings at Railroad 230 kV station	Dominion (100%)
b3800.350	Install terminal equipment at Vint Hill 500 kV substation to support a 5000A line to 500 kV Morrisville substation. Update relay settings for 230 kV lines No. 2101, No. 2163, and 500 kV line No. 535	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.79%) / Dominion (90.21%)</p>
b3800.351	Update relay settings at Vint Hill for 230 kV line No. 2101 Vint Hill - Bristers	Dominion (100%)
b3800.352	Update relay settings at Vint Hill for 230 kV line No. 2163 Vint Hill - Liberty	Dominion (100%)

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**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.353	Update relay settings at Vint Hill for 500 kV line No. 535 Vint Hill - Loudoun	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (13.93%) / BGE (6.86%) / Dominion (70.92%) / PEPCO (8.29%)</p>
b3800.354	Install terminal equipment at Wishing Star 500 kV substation to support a 5000A line to Vint Hill. Update relay settings for 500 kV lines No. 546 and No. 590	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (21.45%) / Dominion (78.55%)</p>
b3800.355	Revise relay settings at Youngs Branch 230 kV station	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.356	Build a new 500 kV line from Vint Hill to Wishing Star. The line will be supported on single circuit monopoles. New conductor to have a summer rating of 4357 MVA. Line length is approximately 16.59 miles	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (21.45%) / Dominion (78.55%)</p>
b3800.357	Build a new 500 kV line from Morrisville to Vint Hill. New conductor to have a summer rating of 4357 MVA. Line length is approximately 19.71 miles	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.79%) / Dominion (90.21%)</p>
b3800.358	Replace single unit Locks 230/115 kV 168 MVA transformer TX No.7 with new single unit transformer with a rating of 224 MVA. Lead lines at the 115 kV level will be upgraded to 2000A	Dominion (100%)

\*Neptune Regional Transmission System, LLC

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.359	Wreck and rebuild 230 kV line No. 2090 Ladysmith CT - Summit D.P. segment as a double circuit 230 kV line to achieve a summer rating of 1573 MVA. Only one circuit will be wired at this stage. Upgrade circuit breaker leads, switches and line leads at Ladysmith CT to 4000A	Dominion (100%)
b3800.360	Rebuild 230 kV line No. 2054 Charlottesville - Proffit DP using double-circuit capable 500/230 kV poles. (The 500 kV circuit will not be wired as part of this project)	Dominion (100%)
b3800.361	Rebuild 230 kV line No. 233 Charlottesville - Hydraulic Road - Barracks Road - Crozet-Dooms	Dominion (100%)
b3800.362	Rebuild 230 kV line No. 291 segment from Charlottesville - Barracks Road	Dominion (100%)
b3800.363	Rebuild 230 kV line No. 291 segment from Barracks Road - Crozet	Dominion (100%)
b3800.364	Rebuild 230 kV line No. 291 segment Crozet - Dooms	Dominion (100%)
b3800.365	Hollymeade substation Relay Revision for 230 kV line No. 2054 Charlottesville - Hollymeade	Dominion (100%)
b3800.366	Upgrade the terminal equipment at 230 kV Charlottesville station to 4000A for 230 kV line No. 2054 (Charlottesville - Hollymeade)	Dominion (100%)
b3800.367	Proffit DP substation Relay revision for 230 kV line No. 2054 Charlottesville - Hollymeade	Dominion (100%)
b3800.368	Barracks Road substation relay reset to accommodate the rebuilt line 230 kV lines No. 233 and No. 291	Dominion (100%)
b3800.369	Crozet substation relay reset to accommodate the rebuilt 230 kV lines No. 233 and No. 291	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.370	Charlottesville 230 kV substation terminal equipment upgrade for 230 kV lines No. 233 and No. 291 rebuild	Dominion (100%)
b3800.371	Upgrade Hydraulic Road substation equipment for 230 kV line No. 233 and No. 291 rebuild	Dominion (100%)
b3800.372	Dooms substation terminal equipment upgrade for 230 kV line No. 233 and No. 291 rebuild	Dominion (100%)
b3800.373	Wreck and rebuild approximately 7.14 miles of 230 kV line No. 256 from St. Johns to structure 256/108 to achieve a summer rating of 1573 MVA. Line switch 25666 at St. Johns to be upgraded to 4000A	Dominion (100%)
b3800.374	Reconductor approximately 5.30 miles of 230 kV line No. 256 from Ladysmith CT to structure 256/107 to achieve a summer rating of 1573 MVA. Terminal equipment at remote end substations will be upgraded to 4000A	Dominion (100%)
b3800.401	Replace Ashburn 230 kV breaker SC432 with a breaker rated 63 kA	Dominion (100%)
b3800.402	Replace Beaumeade 230 kV breaker 227T2152 with a breaker rated 80 kA	Dominion (100%)
b3800.403	Replace BECO 230 kV breakers 215012 and H12T2150 with breakers rated 63 kA	Dominion (100%)
b3800.404	Replace Belmont 230 kV breaker 227T2180 with a breaker rated 80 kA	Dominion (100%)
b3800.405	Replace Brambleton 230 kV breakers 20102, 20602, 204502, 209402, 201T2045, 206T2094 with breakers rated 80 kA	Dominion (100%)
b3800.406	Replace Gainesville 230 kV breaker 216192 with a breaker rated 80 kA	Dominion (100%)

**Virginia Electric and Power Company (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.407	Replace Loudoun 230 kV breakers 204552, 217352 with breakers rated 80 kA	
		Dominion (100%)
b3800.408	Replace Ox 230 kV breakers 22042, 24342, 24842, 220T2063, 243T2097, 248T2013, H342 with breakers rated 80 kA	
		Dominion (100%)
b3800.409	Replace Paragon Park 230 kV breakers 208132, 215032, 2081T2206, 2150T2207 with breakers rated 80 kA	
		Dominion (100%)
b3800.410	Replace Reston 230 kV breaker 264T2015 with a breaker rated 63 kA	
		Dominion (100%)
b3800.411	Replace Stonewater 230 kV breakers 20662-1, 20662-2, 217862-1, 217862-2 with breakers rated 80 kA	
		Dominion (100%)
b3800.412	Replace Waxpool 230 kV breakers 214922-5, 214922-6, 216622-5, 216622-6 with breakers rated 63 kA	
		Dominion (100%)

**SCHEDULE 12 – APPENDIX A**

**(28) Transource, LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b2743.1	Tap the Conemaugh – Hunterstown 500 kV line & create new Rice 500 kV & 230 kV stations. Install two 500/230 kV transformers operated together	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2743.5	Build new 230 kV double circuit line between Rice and Ringgold 230 kV, operated as a single circuit	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2752.1	Tap the Peachbottom – TMI 500 kV line & create new Furnace Run 500 kV & 230 kV stations. Install two 500/230 kV transformers, operated together	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)
b2752.5	Build new 230 kV double circuit line between Furnace Run and Conastone 230 kV, operated as a single circuit	AEP (6.46%) / APS (8.73%) / BGE (19.73%) / ComEd (2.16%) / ConEd (0.06%) / Dayton (0.59%) / DEOK (1.02%) / DL (0.01%) / Dominion (39.92%) / EKPC (0.45%) / PEPCO (20.87%)

**Transource, LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3737.47 <sup>+</sup>	Build a new North Delta 500 kV substation with four bay breaker and half configuration. The substation will include 12 500 kV breakers and one 500/230 kV transformers, will allow the termination of six 500 kV lines	<p><b>Reliability Driver (26.73%):</b></p> <p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p><b>DFAX Allocation:</b>                      PECO (100%)</p> <hr/> <p><b>Public Policy Driver (73.27%):</b>                      AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)</p>
b3800.48	North Delta termination for the North Delta - High Ridge 500 kV line (Transource work)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</p>

<sup>+</sup> b3737.47 is an Incremental Multi-Driver Project that includes both a reliability driver and a public policy driver. Accordingly, b3737.47 is included on both Tariff, Schedule 12–Appendix A, section 28 and Tariff, Schedule 12–Appendix C, section 1.

**Transource, LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.48	North Delta termination for the North Delta - High Ridge 500 line (Transource work)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      Dominion (60.85%) / DPL (0.01%) / PECO (0.01%) / PEPCO (29.24%) / PSEG (9.48%) / RE (0.41%)</p>
b3800.49	North Delta 500 kV termination for the Calpine generator	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      PECO (100%)</p>

\*Neptune Regional Transmission System, LLC

**Transource, LLC (cont.)**

Required Transmission Enhancements    Annual Revenue Requirement    Responsible Customer(s)

<p>b3800.50</p>	<p>North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (Transource work)</p>		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  AEC (17.65%) / BGE (4.43%) / Dominion (9.87%) / DPL (22.25%) / JCPL (3.16%) / NEPTUNE* (0.36%) / PECO (2.98%) / PENELEC (0.44%) / PEPCO (3.80%) / PPL (5.99%) / PSEG (27.86%) / RE (1.21%)</p>
<p>b3800.51</p>	<p>North Delta 500 kV termination for the new Peach Bottom - North Delta 500 kV line (Transource work)</p>		<p><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>  AEC (11.03%) / BGE (37.40%) / DPL (22.91%) / PEPCO (28.66%)</p>

\*Neptune Regional Transmission System, LLC

**SCHEDULE 12 – APPENDIX A**

**(32) NextEra Energy Transmission LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.1 Outside of the Green Acres substation, swap the NIPSCO Green Acre Tap towers from the St. John – Green Acres – Olive 345 kV line to the University Park N – Olive 345 kV line to create University Park N – Green Acres – Olive and St. John – Olive 345 kV lines		<b>Reliability Driver:</b> ComEd (54.45%) / Dayton (45.55%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)
b3775.2 Reconductor NextEra Energy’s (NEET’s) section of Crete (IN/IL border) – St. John 345 kV line (6.95 miles)		<b>Reliability Driver:</b> ComEd (62.41%) / Dayton (37.59%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**SCHEDULE 12 – APPENDIX A**

**(32) NextEra Energy Transmission LLC**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3775.8 Upgrade the existing terminal equipment (substation conductor) at St. John on the existing Crete to St. John 345 kV line with bundled 2x1590 ACSR Lapwing		<b>Reliability Driver:</b> ComEd (62.41%) / Dayton (37.59%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)
b3775.9 Upgrade the existing terminal equipment (substation conductor) at Green Acres on the existing St. John to Green Acres 345 kV line with bundled 2x1590 ACSR Lapwing		<b>Reliability Driver:</b> ComEd (54.45%) / Dayton (45.55%)
		<b>Market Efficiency Driver:</b> AEC (0.87%) / AEP (24.07%) / APS (3.95%) / ATSI (11.04%) / BGE (4.30%) / Dayton (3.52%) / DEOK (5.35%) / Dominion (20.09%) / DPL (1.73%) / DL (2.11%) / ECP** (0.17%) / EKPC (1.73%) / HTP*** (0.07%) / JCPL (1.98%) / ME (1.63%) / NEPTUNE* (0.43%) / OVEC (0.07%) / PECO (3.59%) / PENELEC (1.68%) / PEPCO (3.91%) / PPL (3.64%) / PSEG (3.93%) / RE (0.14%)

\*Neptune Regional Transmission System, LLC

\*\*East Coast Power, L.L.C.

\*\*\*Hudson Transmission Partners, LLC

**NextEra Energy Transmission LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.102	New 500 kV line from existing 502 Junction substation to Woodside 500 kV substation (bypass Black Oak) (NEET Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) /                      APS (5.76%) / ATSI (8.04%) /                      BGE (4.11%) / ComEd (13.39%)                      / Dayton (2.12%) / DEOK                      (3.25%) / DL (1.71%) /                      Dominion (13.32%) / DPL                      (2.60%) / EKPC (1.89%) / JCPL                      (3.86%) / ME (1.90%) /                      NEPTUNE* (0.42%) / OVEC                      (0.08%) / PECO (5.40%) /                      PENELEC (1.78%) / PEPCO                      (3.67%) / PPL (4.72%) / PSEG                      (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (25.59%) / BGE (9.79%) /                      Dominion (51.94%) / PEPCO                      (12.68%)</p>

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.106	Woodside 500 kV substation, except terminations, transformer, Cap Banks and Static Synchronous Compensator (STATCOM)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (100%)</p>
b3800.107	Line Termination work at Woodside 500 kV substation for 502 Junction to Woodside 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (25.59%) / BGE (9.79%) / Dominion (51.94%) / PEPCO (12.68%)</p>

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.108	Line termination work at Woodside 500 kV substation for Woodside to Aspen 500 kV line	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</p>
b3800.109	Termination work for two 500/138 kV transformers at Woodside 500 kV substation	APS (100%)
b3800.110	Two 500/138 kV transformers at Woodside 500 kV substation	APS (100%)

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.113	Two 150 MVAR Cap banks and one +500/-300 MVAR STATCOM at Woodside 500 kV substation	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (100%)</p>
b3800.115	Line work for terminating Doubs to Bismark line for Doubs side at Woodside 500 kV substation (NEET Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (27.49%) / BGE (9.83%) / Dominion (53.78%) / PEPCO (8.90%)</p>

\*Neptune Regional Transmission System, LLC

**NextEra Energy Transmission LLC (cont.)**

Required Transmission Enhancements	Annual Revenue Requirement	Responsible Customer(s)
b3800.117	Line work for terminating Doubs to Bismark line for Bismark side for Woodside 500 kV substation (NEET Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (21.09%) / BGE (6.55%) / Dominion (64.94%) / PEPCO (7.42%)</p>
b3800.119	New 500kV transmission line from Woodside substation to Aspen substation (in DOM zone) (NEET Portion)	<p><b>Load-Ratio Share Allocation:</b>                      AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <hr/> <p><b>DFAX Allocation:</b>                      APS (9.18%) / BGE (7.21%) / Dominion (72.52%) / PEPCO (11.09%)</p>

\*Neptune Regional Transmission System, LLC

## **Schedule 12 - Appendix C**

### **State Agreement Public Policy Projects Constructed Pursuant to the State Agreement Approach**

This Schedule 12 - Appendix C applies only to the assignment of cost responsibility of State Agreement Public Policy Projects constructed in accordance with Operating Agreement, Schedule 6, section 1.5.9 among Responsible Customers.

**(1) Rate Schedule FERC No. 49, State Agreement Approach Agreement By and Among PJM Interconnection, L.L.C. and New Jersey Board of Public Utilities**

In accordance with the FERC order in Docket Nos. ER22-2690-000 and -001, 181 FERC ¶ 61,178 (2022), cost responsibility for the State Agreement Public Policy Projects shall be assigned annually on a load-ratio share basis among Network Customers in the State of New Jersey determined in accordance with Schedule 12, section (c)(4), and customers using Point-to-Point Transmission Service with a Point of Delivery within the State of New Jersey determined in accordance with Schedule 12, section (c)(5), as follows:

With respect to each Zone located in the State of New Jersey, using, consistent with Tariff, Part III, section 34.1, the applicable zonal loads at the time of such Zone’s annual peak load from the 12-month period ending October 31 preceding the calendar year for which the annual cost responsibility allocation is determined.

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.1	Reconfigure Larrabee 230 kV substation	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.2	Larrabee substation – 230 kV equipment for direct connection	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.3	Lakewood Generator substation – Update relay settings on the Larrabee 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.4	B54 Larrabee – South Lockwood 34.5 kV line transfer	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.5	Larrabee Collector station – Larrabee 230 kV new line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.6	Larrabee Collector station – Smithburg No.1 500 kV line (new asset). New 500 kV line will be built double circuit to accommodate a 500 kV line and a 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.7	Rebuild G1021 Atlantic – Smithburg 230 kV line between the Larrabee and Smithburg substations as a double circuit 500 kV/230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.8	Smithburg substation 500 kV expansion to 4-breaker ring	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.9	Larrabee substation upgrades	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.10	Atlantic 230 kV substation – Convert to double-breaker double-bus	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.11	Freneau substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.12	Smithburg substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.13	Oceanview substation – Update relay settings on the Atlantic 230 kV lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.14	Red Bank substation – Update relay settings on the Atlantic 230 kV lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.15	South River substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.16	Larrabee substation – Update relay settings on the Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.17	Atlantic substation – Construct a new 230 kV line terminal position to accept the generator lead line from the offshore wind Larrabee Collector station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.18	G1021 (Atlantic – Smithburg) 230 kV upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.19	R1032 (Atlantic – Larrabee) 230 kV upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.20	New Larrabee Collector station – Atlantic 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

Identifier	Description	Responsible Customers (percentage share)
b3737.21	Larrabee – Oceanview 230 kV line upgrade	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.22	Construct the Larrabee Collector station AC switchyard, composed of a 230 kV 3 bay breaker and a half substation with a nominal current rating of 4000 A and four single phase 500/230 kV 450 MVA autotransformers to step up the voltage for connection to the Smithburg substation. Procure land adjacent to the AC switchyard, and prepare the site for construction of future AC to DC converters for future interconnection of DC circuits from offshore wind generation. Land should be suitable to accommodate installation of four individual converters to accommodate circuits with equivalent rating of 1400 MVA at 400 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.23	Rebuild the underground portion of Richmond – Waneeta 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.24	Upgrade Cardiff – Lewis 138 kV by replacing 1590 kcmil strand bus inside Lewis substation	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.25	Upgrade Lewis No. 2 – Lewis No. 1 138 kV by replacing its bus tie with 2000 A circuit breaker	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.26	Upgrade Cardiff – New Freedom 230 kV by modifying existing relay setting to increase relay limit	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.27	Rebuild approximately 0.8 miles of the D1018 (Clarksville –Lawrence 230 kV) line between Lawrence substation (PSEG) and structure No. 63	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.28	Reconductor Kilmer I – Lake Nelson I 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.29	Convert the six-wired East Windsor – Smithburg E2005 230 kV line (9.0 miles) to two circuits: One a 500 kV line and the other a 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.30	Add third Smithburg 500/230 kV transformer	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.31	Additional reconductoring required for Lake Nelson I –Middlesex 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.32	Rebuild Larrabee – Smithburg No. 1 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.33	Reconductor Red Oak A – Raritan River 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.34	Reconductor Red Oak B – Raritan River 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.35	Reconductor small section of Raritan River – Kilmer I 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.36	Replace substation conductor at Kilmer and reconductor Raritan River – Kilmer W 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.37	Add a third set of submarine cables, rerate the overhead segment, and upgrade terminal equipment to achieve a higher rating for the Silver Run – Hope Creek 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.38	Linden subproject: Install a new 345/230 kV transformer at the Linden 345 kV switching station, and relocate the Linden – Tosco 230 kV (B-2254) line from the Linden 230 kV to the existing 345/230 kV transformer at Linden 345 kV station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.39	Bergen subproject: Upgrade the Bergen 138 kV ring bus by installing a 80 kA breaker along with the foundation, piles, and relays to the existing ring bus, install breaker isolation switches on existing foundations and modify and extend bus work	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.40	Windsor to Clarksville subproject: Create a paired conductor path between Clarksville 230 kV and JCPL Windsor Switch 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.41	Windsor to Clarksville subproject: Upgrade all terminal equipment at Windsor 230 kV and Clarksville 230 kV as necessary to create a paired conductor path between Clarksville and JCPL East Windsor Switch 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.42	Upgrade inside plant equipment at Lake Nelson I 230 kV station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.43	Upgrade Kilmer W – Lake Nelson W 230 kV line drop and strain bus connections at Lake Nelson 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.44	Upgrade Lake Nelson – Middlesex – Greenbrook W 230 kV line drop and strain bus connections at Lake Nelson 230 kV	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.45	Reconductor 0.33 miles of PPL’s portion of the Gilbert –Springfield 230 kV line	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.46	Install a new breaker at Graceton 230 kV substation to terminate a new 230 kV line from the new greenfield North Delta station	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

Identifier	Description	Responsible Customers (percentage share)
b3737.47 <sup>+</sup>	Build a new North Delta 500 kV substation with four bay breaker and half configuration. The substation will include 12 500 kV breakers and one 500/230 kV transformers, will allow the termination of six 500 kV lines	<p align="center"><b>Reliability Driver (26.73%):</b></p> <p align="center"><b>Load-Ratio Share Allocation:</b>  AEC (1.65%) / AEP (13.68%) / APS (5.76%) / ATSI (8.04%) / BGE (4.11%) / ComEd (13.39%) / Dayton (2.12%) / DEOK (3.25%) / DL (1.71%) / Dominion (13.32%) / DPL (2.60%) / EKPC (1.89%) / JCPL (3.86%) / ME (1.90%) / NEPTUNE* (0.42%) / OVEC (0.08%) / PECO (5.40%) / PENELEC (1.78%) / PEPCO (3.67%) / PPL (4.72%) / PSEG (6.39%) / RE (0.26%)</p> <p align="center"><b>DFAX Allocation:</b>  PECO (100%)</p> <hr/> <p align="center"><b>Public Policy Driver (73.27%):</b>  AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)</p>
b3737.48	Build a new North Delta – Graceton 230 kV line by rebuilding 6.07 miles of the existing Cooper – Graceton 230 kV line to double circuit	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.49	Bring the Cooper – Graceton 230 kV line “in and out” of North Delta by constructing a new double-circuit North Delta – Graceton 230 kV (0.3 miles) and a new North Delta – Cooper 230 kV (0.4 miles) cut-in lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)

<sup>+</sup> b3737.47 is an Incremental Multi-Driver Project that includes both a reliability driver and a public policy driver. Accordingly, b3737.47 is included on both Tariff, Schedule 12–Appendix A, section 28 and Tariff, Schedule 12–Appendix C, section 1.

<b>Identifier</b>	<b>Description</b>	<b>Responsible Customers (percentage share)</b>
b3737.50	Bring the Peach Bottom – Delta Power Plant 500 kV line “in and out” of North Delta by constructing a new Peach Bottom – North Delta 500 kV (0.3 miles) cut-in and cut-out lines	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.51	Replace four 63 kA circuit breakers "205," "235," "225" and "255" at Peach Bottom 500 kV with 80 kA	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.52	Replace one 63 kA circuit breaker "B4" at Conastone 230 kV with 80 kA	AEC (13.64%) / JCPL (31.98%) / PSEG (52.17%) / RE (2.21%)
b3737.53	Remove the existing E83 115 kV line (not in-service) to accommodate the new 500 kV/230 kV lines (approximately 7.7 miles)	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.54	Remove the existing H2008 Larrabee – Smithburg No. 2 230 kV line to accommodate the new 500 kV/230 kV lines	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.55	Middlesex substation 230 kV – Replace the 2000A circuit switcher at Middlesex switch point for the Lake Nelson I1023 230 kV exit	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.56	Build a new North Delta – Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper – Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO and BGE. This subproject is for BGE's portion of the line rebuild, which is 2.16 miles	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.59	Windsor to Clarksville subproject: Upgrade terminal equipment at Windsor 230 kV station	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)
b3737.60	Perform a Pre-build Infrastructure evaluation study in alignment with the NJBPU Solicitation Guidance Document requirements	AEC (13.55%) / JCPL (31.74%) / PSEG (52.60%) / RE (2.11%)