

PJM Interconnection 2750 Monroe Boulevard Audubon, PA 19403-2497

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February 25, 2021

Honorable Kimberly D. Bose Secretary Federal Energy Regulatory Commission 888 First Street, N.E., Room 1A Washington, D.C. 20426

Re: *PJM Interconnection, L.L.C., Docket No. ER21-* 1207-000 (OATT)

PJM Interconnection, L.L.C., Docket No. ER21-1208-000 (CTOA)

Revisions to PJM Open Access Transmission Tariff and

Consolidated Transmission Owners Agreement

for American Electric Power Service Corporation on behalf of its PJM Member

affiliates

Dear Secretary Bose:

Pursuant to the Federal Power Act, Section 205¹ and the Commission's Regulations,² PJM Interconnection, L.L.C. ("PJM") submits for filing proposed revisions to the PJM Open Access Transmission Tariff ("Tariff") and the Consolidated Transmissions Owners Agreement ("CTOA"), Rate Schedule No. 42,³ on behalf of American Electric Power Service Corporation ("AEP") for its affiliate companies to reflect corrections that were inadvertently omitted from the Tariff and the CTOA.⁴ Specifically, PJM, files to amend the Tariff and CTOA to correct

² 18 C.F.R. Part 35.

¹ 16 U.S.C. § 824d.

³ Capitalized terms not otherwise defined herein have the meaning specified in, as applicable, the Tariff and the CTOA.

⁴ AEP acts for its AEP Affiliates who are PJM Members and signatories of the CTOA and the Reliability Assurance Agreement among Load-Serving Entities in the PJM Region.

references to AEP and its Affiliate companies.⁵

PJM requests an effective date of April 27, 2021, for the attached revised CTOA and Tariff sections.

I. BACKGROUND

On October 14, 2015, PJM submitted revisions to the PJM Tariff and CTOA on behalf of AEP to accurately reflect AEP's affiliate companies in Docket Nos. ER16-73-000 (the "ER16-73 AEP Tariff Filing") and ER16-74-000 (the "ER16-74 AEP CTOA Filing). The Commission issued letter orders accepting the ER16-73 AEP Tariff Filing and ER16-14 AEP CTOA Filing on November 19, 2015 and November 30, 2015, respectively.

The ER16-74 AEP CTOA Filing proposed revisions to (i) PJM Tariff, Schedule 12-Appendix – 17 and Schedule 12-Appendix A – 17 and (ii) the CTOA- Attachment A and the AEP signature page, to update the references to AEP to accurately reflect its affiliate companies, as follows: "American Electric Power Service Corporation on behalf of its operating affiliate companies: AEP Indiana Michigan Transmission Company, AEP Kentucky Transmission Company, AEP Ohio Transmission Company, AEP West Virginia Transmission Company, Appalachian Power Company, Columbus Southern Power Company, Indiana Michigan Power Company, Kentucky Power Company, Kingsport Power Company, Ohio Power Company and Wheeling Power Company." These changes were not implemented by PJM due to an administrative oversight.

However, there were errors in the ER16-73 AEP Tariff Filing and ER16-14 AEP CTOA Filing. More specifically, the ER16-73 AEP Tariff Filing and the ER16-74 AEP CTOA Filing

⁵ Due to eTariff restrictions the proposed revisions to the PJM Tariff and CTOA will be filed under separate cover using the same transmittal letter with specified attachments corresponding to each filing.

did not (i) include corresponding changes to PJM Tariff Attachment L; and (ii) use the full legal name for AEP and its Affiliates in the Tariff and the CTOA.

II. DESCRIPTION OF PROPOSED TARIFF AND CTOA REVISIONS

In order to correct these inaccuracies, PJM proposes to revise (i) Tariff, Attachment L:

(ii) Tariff, Schedule 12-Appendix – 17; (iii) Tariff, Schedule 12-Appendix A – 17; (iv) CTOA, Attachment A; and (v) the CTOA, AEP signature page as follows:

A. Tariff, Attachment L Revision

AEP East Operating Companies American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Kentucky Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; —(Appalachian Power Company; Columbus Southern Power Company, Indiana Michigan Power Company; Kentucky Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company)

B. Tariff, Schedule 12-Appendix – 17 Revisions

C. Tariff, Schedule 12- Appendix A – 17 Revisions

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

D. CTOA, Attachment A Revisions

American Electric Power Service Corporation on behalf of its affiliate companies: <u>AEP Appalachian Transmission Company, Inc.</u>; AEP Indiana Michigan Transmission Company, <u>Inc.</u>; AEP Kentucky Transmission Company, <u>Inc.</u>; AEP Ohio Transmission Company, <u>Inc.</u>; AEP West Virginia Transmission Company, <u>Inc.</u>; Appalachian Power Company; Indiana Michigan Power Company; Kentucky Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company

E. CTOA - AEP Signature Block Revision

IN WITNESS WHEREOF, the Parties and PJM have caused this Agreement to be executed by their duly authorized representatives.

American Electric Power Service Corporation on behalf of its affiliate companies: <u>AEP Appalachian Transmission Company, Inc.</u>; AEP Indiana Michigan Transmission Company, <u>Inc.</u>; AEP Kentucky Transmission Company, <u>Inc.</u>; AEP Ohio Transmission Company, <u>Inc.</u>; AEP West Virginia Transmission Company, <u>Inc.</u>; Appalachian Power Company; Indiana Michigan Power Company; Kentucky Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company

By:____

Name: Lisa M. Barton

Title: Executive Vice President - AEP Transmission

Date: October 13, 2015

III. EFFECTIVE DATE

PJM requests an effective date of April 27, 2021, for the attached PJM Tariff and CTOA sections, which at least 60 days after the filing date.

IV. DOCUMENTS ENCLOSED

Along with this transmittal letter, PJM submits the following attachments:

- 1. Attachment A Marked Tariff Redline revisions to Tariff, Schedule 12-Appendix 17, Tariff, Schedule 12-Appendix A 17 and Tariff, Attachment L; and
- 2. Attachment B Clean Tariff Clean format of Tariff, Schedule 12-Appendix 17, Tariff, Schedule 12-Appendix A 17 and Tariff, Attachment L.

V. CORRESPONDENCE AND COMMUNICATIONS

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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,⁶ PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: http://www.pjm.com/documents/ferc-manuals/ferc-filings.aspx 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

⁶ See 18C.F.R §§ 35.2(e) and 385.2010(f)(3).

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commissions in the PJM Region⁷ alerting them 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.

Respectfully submitted,

/s/ Steven R. Pincus

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cc via email:

American Electric Power Stacey L. Burbure Senior Counsel slburbure@aep.com

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⁷ PJM already maintains, updates and regularly uses e-mail lists for all PJM Members and affected state commissions.

Attachment A

Revisions to the PJM Open Access Transmission Tariff

(Marked / Redline Format)

SCHEDULE 12 – APPENDIX

- American Electric Power Service Corporation on behalf of its affiliate companies:

 AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan

 Transmission Company, Inc.; AEP Kentucky Transmission Company, Inc.; AEP

 Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company,

 Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kentucky

 Power Company; Kingsport Power Company; Ohio Power Company and Wheeling

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

| Required | Transmission Enhancements | Annual Revenue Require | ment Responsible Customer(s) |
|----------|------------------------------|------------------------|-------------------------------------|
| | Install a 765/138 kV | | |
| b0318 | transformer at Amos | | AEP (99.00%) / PEPCO (1.00%) |
| | Replace entrance | | |
| | conductors, wave traps, and | | |
| | risers at the Tidd 345 kV | | |
| | station on the Tidd – Canton | | . == |
| b0324 | Central 345 kV circuit | | AEP (100%) |
| b0447 | Replace Cook 345 kV | | |
| 00117 | breaker M2 | | AEP (100%) |
| b0448 | Replace Cook 345 kV | | |
| 00440 | breaker N2 | | AEP (100%) |
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd (13.14%) / |
| | | | Dayton (2.15%) / DEOK (3.23%) / |
| | | | DL (1.73%) / DPL (2.65%) / |
| | | | Dominion (13.03%) / EKPC |
| | | | (1.77%) / JCPL (3.84%) / ME |
| | Construct an Amos – | As specified under | (1.93%) / NEPTUNE* (0.45%) / |
| b0490 | Bedington 765 kV circuit | the procedures | OVEC (0.07%) / PECO (5.29%) / |
| 00470 | (AEP equipment) | detailed in | PENELEC (1.89%) / PEPCO |
| | (AE) equipment) | Attachment H-19B | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEC (5.01%) / AEP (4.39%) / APS |
| | | | (9.26%) / BGE (4.43%) / DL |
| | | | (0.02%) / DPL (6.91%) / Dominion |
| | | | (10.82%) / JCPL (11.64%) / ME |
| | | | (2.94%) / NEPTUNE (1.12%) / |
| | | | PECO (14.51%) / PEPCO (6.11%) |

| | | | | PPL (6.39%) / PSE | EG (15.86%)/ |
|---|---------|----------|--------------|-------------------|--------------|
| | | | | RE (0.59 | 9%) |
| * | Neptune | Regional | Transmission | n System, | LLC |

| Required Transmission Enhancements Annual Revenue Requirement Responsible Custom | er(s) |
|--|---|
| Replace Amos 138 kV breaker 'B' Replace Amos 138 kV breaker 'B' | APS GE ayton DL nion CPL JNE* CO) / 6) /) APS 02%) / .51%) %) / |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) |
|------------|---------------------------|---------------------|------------|----------------------------|
| | | | Load-l | Ratio Share Allocation: |
| | | | AEC (1.7 | 1%) / AEP (14.04%) / APS |
| | | | (5.61% | a) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% | 5) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% |) / EKPC (1.77%) / JCPL |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) | / OVEC (0.07%) / PECO |
| b0490.3 | Replace Amos 138 kV | | (5.29% | 6) / PENELEC (1.89%) / |
| 00490.3 | breaker 'B1' | | PEPCO | (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | | I | OFAX Allocation: |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 01%) / Dominion (10.82%) / |
| | | | JCPL (| (11.64%) / ME (2.94%) / |
| | | | NEPTUNI | E (1.12%) / PECO (14.51%) |
| | | | / PEPCO | O (6.11%) / PPL (6.39%) / |
| | | | PSEG | (15.86%) / RE (0.59%) |

| Required T | ransmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) |
|------------|--------------------------|---------------------|-------------|---------------------------|
| | | | Load-F | Ratio Share Allocation: |
| | | | AEC (1.71 | 1%) / AEP (14.04%) / APS |
| | | | (5.61%) |) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% |) / DEOK (3.23%) / DL |
| | | | (1.73%)/ | DPL (2.65%) / Dominion |
| | | | (13.03%) |) / EKPC (1.77%) / JCPL |
| | | | (3.84%)/3 | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) | / OVEC (0.07%) / PECO |
| b0490.4 | Replace Amos 138 kV | | (5.29% |) / PENELEC (1.89%) / |
| 00490.4 | breaker 'C' | | PEPCO | (3.82%) / PPL (4.72%) / |
| | | | PSEG | (6.21%) / RE (0.26%) |
| | | | D | FAX Allocation: |
| | | | AEC (5.0 | 1%) / AEP (4.39%) / APS |
| | | | (9.26%) / I | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 1%) / Dominion (10.82%) / |
| | | | JCPL (| 11.64%) / ME (2.94%) / |
| | | | NEPTUNE | E (1.12%) / PECO (14.51%) |
| | | | / PEPCO | (6.11%) / PPL (6.39%) / |
| | | | PSEG | (15.86%) / RE (0.59%) |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) |
|------------|---------------------------|---------------------|------------|----------------------------|
| | | | Load-l | Ratio Share Allocation: |
| | | | AEC (1.7 | 1%) / AEP (14.04%) / APS |
| | | | (5.61% | o) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% | 6) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% | o) / EKPC (1.77%) / JCPL |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) | / OVEC (0.07%) / PECO |
| b0490.5 | Replace Amos 138 kV | | (5.29% | 6) / PENELEC (1.89%) / |
| 00490.3 | breaker 'C1' | | PEPCO | (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | | I | OFAX Allocation: |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / |
| | | | JCPL (| (11.64%) / ME (2.94%) / |
| | | | | E (1.12%) / PECO (14.51%) |
| | | | / PEPCO | O (6.11%) / PPL (6.39%) / |
| | | | PSEG | (15.86%) / RE (0.59%) |

^{*} Neptune Regional Transmission System, LLC

| Required T | ransmission Enhancements | Annual Revenue Requir | ement Responsible Customer(s) |
|------------|--------------------------|-----------------------|-------------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | | | (1.73%) / DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / JCPL |
| | | | (3.84%) / ME (1.93%) / NEPTUNE* |
| | | | (0.45%) / OVEC (0.07%) / PECO |
| b0490.6 | Replace Amos 138 kV | | (5.29%) / PENELEC (1.89%) / |
| 00490.0 | breaker 'D' | | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEC (5.01%) / AEP (4.39%) / APS |
| | | | (9.26%) / BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.91%) / Dominion (10.82%) / |
| | | | JCPL (11.64%) / ME (2.94%) / |
| | | | NEPTUNE (1.12%) / PECO (14.51%) |
| | | | / PEPCO (6.11%) / PPL (6.39%) / |
| | | | PSEG (15.86%) / RE (0.59%) |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) |
|------------|---------------------------|---------------------|------------|----------------------------|
| | | | Load-l | Ratio Share Allocation: |
| | | | AEC (1.7 | 1%) / AEP (14.04%) / APS |
| | | | (5.61% | a) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% | 6) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% |) / EKPC (1.77%) / JCPL |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) | / OVEC (0.07%) / PECO |
| b0490.7 | Replace Amos 138 kV | | (5.29% | 6) / PENELEC (1.89%) / |
| 00490.7 | breaker 'D2' | | PEPCO | (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | | I | OFAX Allocation: |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 01%) / Dominion (10.82%) / |
| | | | JCPL (| (11.64%) / ME (2.94%) / |
| | | | NEPTUNI | E (1.12%) / PECO (14.51%) |
| | | | / PEPCO | O (6.11%) / PPL (6.39%) / |
| | | | PSEG | (15.86%) / RE (0.59%) |

^{*} Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Requ | iirement | Responsible Customer(s) |
|------------|---------------------------|---------------------|---------------------|--------------------------|
| | | | Load-Ra | tio Share Allocation: |
| | | | AEC (1.71%) | 6) / AEP (14.04%) / APS |
| | | | (5.61%) | / ATSI (8.10%) / BGE |
| | | | (4.36%)/C | omEd (13.14%) / Dayton |
| | | | (2.15%) | / DEOK (3.23%) / DL |
| | | | $(1.73\%) / \Gamma$ | OPL (2.65%) / Dominion |
| | | | (13.03%) | / EKPC (1.77%) / JCPL |
| | | | (3.84%) / M | IE (1.93%) / NEPTUNE* |
| | | | (0.45%) / (| OVEC (0.07%) / PECO |
| b0490.8 | Replace Amos 138 kV | | (5.29%) | / PENELEC (1.89%) / |
| 00490.8 | breaker 'E' | | PEPCO (3 | 3.82%) / PPL (4.72%) / |
| | | | PSEG (| 6.21%) / RE (0.26%) |
| | | | DF | 'AX Allocation: |
| | | | AEC (5.019 | %) / AEP (4.39%) / APS |
| | | | (9.26%) / Bo | GE (4.43%) / DL (0.02%) |
| | | | / DPL (6.919 | %) / Dominion (10.82%) / |
| | | | JCPL (11 | 1.64%) / ME (2.94%) / |
| | | | NEPTUNE (| (1.12%) / PECO (14.51%) |
| | | | / PEPCO (| (6.11%) / PPL (6.39%) / |
| | | | PSEG (1 | 15.86%) / RE (0.59%) |

| Required T | ransmission Enhancements | Annual Revenue Requ | irement | Responsible Customer(s) |
|------------|--------------------------|---------------------|------------|----------------------------|
| | | | Load- | Ratio Share Allocation: |
| | | | AEC (1.7 | 71%) / AEP (14.04%) / APS |
| | | | (5.61% | %) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% | %) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% | %) / EKPC (1.77%) / JCPL |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) |) / OVEC (0.07%) / PECO |
| b0490.9 | Replace Amos 138 kV | | (5.29% | 6) / PENELEC (1.89%) / |
| 00490.9 | breaker 'E2' | | PEPCC | O (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | | | DFAX Allocation: |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / |
| | | | JCPL | (11.64%) / ME (2.94%) / |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) |
| | | | / PEPCO | O (6.11%) / PPL (6.39%) / |
| | | | PSEG | G (15.86%) / RE (0.59%) |

^{*} Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Requir | rement Responsible Customer(s) |
|----------|-------------------------------|-----------------------|-----------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | Add two advanced | | (1.73%) / DPL (2.65%) / Dominion |
| | technology circuit breakers | | (13.03%) / EKPC (1.77%) / JCPL |
| b0504 | at Hanging Rock 765 kV to | | (3.84%) / ME (1.93%) / |
| | improve operational | | NEPTUNE* (0.45%) / OVEC |
| | performance | | (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| b0570 | Reconductor East Side Lima | | |
| 00370 | – Sterling 138 kV | | AEP (41.99%) / ComEd (58.01%) |
| | Reconductor West | | |
| b0571 | Millersport – Millersport | | AEP (73.83%) / ComEd (19.26%) / |
| | 138 kV | | Dayton (6.91%) |
| | Establish a new 69 kV | | |
| | circuit between the Canal | | |
| | Road and East Wooster | | |
| | stations, establish a new 69 | | |
| b0748 | kV circuit between the West | | |
| | Millersburg and Moreland | | |
| | Switch stations (via Shreve), | | |
| | add reactive support via cap | | |
| | banks | | AEP (100%) |
| b0838 | Hazard Area 138 kV and 69 | | |
| 50050 | kV Improvement Projects | | AEP (100%) |
| | Replace existing 450 MVA | | |
| b0839 | transformer at Twin Branch | | |
| | 345 / 138 kV with a 675 | | AEP (99.73%) / Dayton (0.27%) |

| | | MVA transformer | | | | |
|---|---|-----------------|----------|-------------|------------|-----|
| , | * | Neptune | Regional | Transmissio | on System, | LLC |

| Required T | ransmission Enhancements | Annual Revenue Requireme | ent Responsible Customer(s) |
|------------|----------------------------|--------------------------|-----------------------------|
| | String a second 138 kV | | |
| b0840 | circuit on the open tower | | |
| | position between Twin | | 177 (1001) |
| | Branch and East Elkhart | | AEP (100%) |
| | Establish a new 138/69- | | |
| b0840.1 | 34.5kV Station to | | |
| 0001011 | interconnect the existing | | |
| | 34.5kV network | | AEP (100%) |
| b0917 | Replace Baileysville 138 | | |
| 00717 | kV breaker 'P' | | AEP (100%) |
| b0918 | Replace Riverview 138 | | |
| 00710 | kV breaker '634' | | AEP (100%) |
| b0919 | Replace Torrey 138 kV | | |
| 00919 | breaker 'W' | | AEP (100%) |
| | Construct a new | | |
| | 345/138kV station on the | | |
| b1032.1 | Marquis-Bixby 345kV | | |
| 01032.1 | line near the intersection | | |
| | with Ross - Highland | | AEP (89.97%) / Dayton |
| | 69kV | | (10.03%) |
| | Construct two 138kV | | |
| b1032.2 | outlets to Delano 138kV | | |
| 01032.2 | station and to Camp | | AEP (89.97%) / Dayton |
| | Sherman station | | (10.03%) |
| b1032.3 | Convert Ross - Circleville | | AEP (89.97%) / Dayton |
| 01032.3 | 69kV to 138kV | | (10.03%) |
| | Install 138/69kV | | |
| 1-1022 4 | transformer at new station | | |
| b1032.4 | and connect in the Ross - | | AEP (89.97%) / Dayton |
| | Highland 69kV line | | (10.03%) |
| | Add a third delivery point | | |
| 1-1022 | from AEP's East Danville | | |
| b1033 | Station to the City of | | |
| | Danville. | | AEP (100%) |

| Required T | ransmission Enhancements | Annual Revenue Requiremer | nt Responsible Customer(s) |
|------------|----------------------------|---------------------------|------------------------------|
| | Establish new South | | AEP (96.01%) / APS (0.62%) / |
| | Canton - West Canton | | ComEd (0.19%) / Dayton |
| b1034.1 | 138kV line (replacing | | (0.44%) / DL (0.13%) / |
| 01034.1 | Torrey - West Canton) and | | PENELEC (2.61%) |
| | Wagenhals – Wayview | | |
| | 138kV | | |
| | Loop the existing South | | AEP (96.01%) / APS (0.62%) / |
| | Canton - Wayview 138kV | | ComEd (0.19%) / Dayton |
| b1034.2 | circuit in-and-out of West | | (0.44%) / DL (0.13%) / |
| | Canton | | PENELEC (2.61%) |
| | Install a 345/138kV 450 | | AEP (96.01%) / APS (0.62%) / |
| b1034.3 | MVA transformer at | | ComEd (0.19%) / Dayton |
| 01034.3 | Canton Central | | (0.44%) / DL (0.13%) / |
| | Canton Central | | PENELEC (2.61%) |
| | Rebuild/reconductor the | | AEP (96.01%) / APS (0.62%) / |
| b1034.4 | Sunnyside - Torrey 138kV | | ComEd (0.19%) / Dayton |
| 01034.4 | line | | (0.44%) / DL (0.13%) / |
| | mie | | PENELEC (2.61%) |
| | Disconnect/eliminate the | | AEP (96.01%) / APS (0.62%) / |
| b1034.5 | West Canton 138kV | | ComEd (0.19%) / Dayton |
| 01034.3 | terminal at Torrey Station | | (0.44%) / DL (0.13%) / |
| | terminal at Torrey Station | | PENELEC (2.61%) |
| | Replace all 138kV circuit | | |
| | breakers at South Canton | | AEP (96.01%) / APS (0.62%) / |
| b1034.6 | Station and operate the | | ComEd (0.19%) / Dayton |
| | station in a breaker and a | | (0.44%) / DL (0.13%) / |
| | half configuration | | PENELEC (2.61%) |
| | Replace all obsolete 138kV | | AEP (96.01%) / APS (0.62%) / |
| b1034.7 | circuit breakers at the | | ComEd (0.19%) / Dayton |
| 01034.7 | Torrey and Wagenhals | | (0.44%) / DL (0.13%) / |
| | stations | | PENELEC (2.61%) |

| Required T | ransmission Enhancements | Annual Revenue Requirement | nt Responsible Customer(s) |
|------------|------------------------------|----------------------------|------------------------------|
| | Install additional 138kV | | |
| | circuit breakers at the West | | |
| | Canton, South Canton, | | |
| b1034.8 | Canton Central, and | | AEP (96.01%) / APS (0.62%) / |
| | Wagenhals stations to | | ComEd (0.19%) / Dayton |
| | accommodate the new | | (0.44%) / DL (0.13%) / |
| | circuits | | PENELEC (2.61%) |
| | Establish a third 345kV | | |
| | breaker string in the West | | |
| | Millersport Station. | | |
| | Construct a new West | | |
| b1035 | Millersport – Gahanna | | |
| | 138kV circuit. | | |
| | Miscellaneous | | |
| | improvements to 138kV | | |
| | transmission system. | | AEP (100%) |
| | Upgrade terminal | | |
| b1036 | equipment at Poston | | |
| | Station and update remote | | . —— |
| | end relays | | AEP (100%) |
| | Sag check Bonsack- | | |
| | Cloverdale 138 kV, | | |
| | Cloverdale–Centerville | | |
| | 138kV, Centerville–Ivy | | |
| b1037 | Hill 138kV, Ivy Hill— | | |
| | Reusens 138kV, Bonsack- | | |
| | Reusens 138kV and | | |
| | Reusens-Monel- | | |
| | Gomingo–Joshua Falls 138 | | AED (1000() |
| | kV. | | AEP (100%) |
| 1-1020 | Check the Crooksville - | | |
| b1038 | Muskingum 138 kV sag | | AED (1000() |
| | and perform the required | | AEP (100%) |

^{*} Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|--|----------------------------|-------------------------|
| b1039 | Perform a sag study for the Madison – Cross Street 138 kV line and perform the required work to improve the emergency rating | | AEP (100%) |
| b1040 | Rebuild an 0.065 mile section of the New Carlisle Olive 138 kV line and change the 138 kV line switches at New Carlisle | | AEP (100%) |
| b1041 | Perform a sag study for the Moseley - Roanoke 138 kV to increase the emergency rating | | AEP (100%) |
| b1042 | Perform sag studies to raise the emergency rating of Amos – Poca 138kV | | AEP (100%) |
| b1043 | Perform sag studies to raise the emergency rating of Turner - Ruth 138kV | | AEP (100%) |
| b1044 | Perform sag studies to raise the emergency rating of Kenova – South Point 138kV | | AEP (100%) |
| b1045 | Perform sag studies of Tri State - Darrah 138 kV | | AEP (100%) |
| b1046 | Perform sag study of Scottsville – Bremo 138kV to raise the emergency rating | | AEP (100%) |
| b1047 | Perform sag study of Otter Switch - Altavista 138kV to raise the emergency | | AEP (100%) |

| | rating | |
|--|--------|--|
| | | |

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Reconductor the Bixby -Three C - Groves and b1048 Bixby - Groves 138 kV tower line AEP (100%) Upgrade the risers at the Riverside station b1049 increase the rating of Benton Harbor - Riverside 138kV AEP (100%) Rebuilding and reconductor the Bixby - Pickerington b1050 Road - West Lancaster 138 kV line AEP (100%) Perform a sag study for the Kenzie Creek - Pokagon 138 kV line and perform b1051 the required work improve the emergency rating AEP (100%) Unsix-wire the existing Hvatt - Sawmill 138 kV b1052 line to form two Hyatt -Sawmill 138 kV circuits AEP (100%) Perform a sag study and remediation of 32 miles b1053 between Claytor and Matt Funk. AEP (100%) Add 28.8 MVAR 138 kV capacitor bank at Huffman and 43.2 MVAR 138 kV b1091 Bank at Jubal Early and

52.8 MVAR 138 kV Bank at Progress Park Stations

AEP (100%)

* Neptune Regional Transmission System, LLC

| Required T | ransmission Enhancements | Annual Revenue Requirement | nt Responsible Customer(s) |
|------------|----------------------------|----------------------------|----------------------------|
| | Add 28.8 MVAR 138 kV | | |
| | capacitor bank at Sullivan | | |
| b1092 | Gardens and 52.8 MVAR | | |
| | 138 kV Bank at Reedy | | |
| | Creek Stations | | AEP (100%) |
| | Add a 43.2 MVAR | | |
| b1093 | capacitor bank at the | | |
| 01055 | Morgan Fork 138 kV | | |
| | Station | | AEP (100%) |
| 1 100 1 | Add a 64.8 MVAR | | |
| b1094 | capacitor bank at the West | | A ED (1000) |
| | Huntington 138 kV Station | | AEP (100%) |
| b1108 | Replace Ohio Central 138 | | 177 (100-1) |
| | kV breaker 'C2' | | AEP (100%) |
| b1109 | Replace Ohio Central 138 | | |
| | kV breaker 'D1' | | AEP (100%) |
| b1110 | Replace Sporn A 138 kV | | |
| 01110 | breaker 'J' | | AEP (100%) |
| b1111 | Replace Sporn A 138 kV | | |
| 01111 | breaker 'J2' | | AEP (100%) |
| b1112 | Replace Sporn A 138 kV | | |
| 01112 | breaker 'L' | | AEP (100%) |
| b1113 | Replace Sporn A 138 kV | | |
| 01113 | breaker 'L1' | | AEP (100%) |
| b1114 | Replace Sporn A 138 kV | | |
| 01114 | breaker 'L2' | | AEP (100%) |
| b1115 | Replace Sporn A 138 kV | | |
| 01113 | breaker 'N' | | AEP (100%) |
| b1116 | Replace Sporn A 138 kV | | |
| 01110 | breaker 'N2' | | AEP (100%) |
| b1227 | Perform a sag study on | | |
| 01221 | Altavista – Leesville 138 | | AEP (100%) |

| kV circuit | |
|------------|--|
| | |

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| Required' | Transmission Enhancements | Annual Revenue Requireme | ent Responsible Customer(s) |
|-----------|------------------------------|--------------------------|---------------------------------------|
| | Replace the existing 138/69- | | |
| | 12 kV transformer at West | | |
| b1231 | Moulton Station with a | | |
| | 138/69 kV transformer and a | | |
| | 69/12 kV transformer | | AEP (96.69%) / Dayton (3.31%) |
| b1375 | Replace Roanoke 138 kV | | |
| 01373 | breaker 'T' | | AEP (100%) |
| b1376 | Replace Roanoke 138 kV | | |
| 01370 | breaker 'E' | | AEP (100%) |
| L1277 | Replace Roanoke 138 kV | | |
| b1377 | breaker 'F' | | AEP (100%) |
| 1.1270 | Replace Roanoke 138 kV | | |
| b1378 | breaker 'G' | | AEP (100%) |
| 1.1270 | Replace Roanoke 138 kV | | |
| b1379 | breaker 'B' | | AEP (100%) |
| 1-1200 | Replace Roanoke 138 kV | | , , , , , , , , , , , , , , , , , , , |
| b1380 | breaker 'A' | V V V V he as kV | AEP (100%) |
| 1.1201 | Replace Olive 345 kV | | |
| b1381 | breaker 'E' | | AEP (100%) |
| L1202 | Replace Olive 345 kV | | |
| b1382 | breaker 'R2' | | AEP (100%) |
| | Perform a sag study on the | | |
| b1416 | Desoto – Deer Creek 138 kV | | |
| 01410 | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1417 | Delaware – Madison 138 kV | | |
| 01417 | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1418 | Rockhill – East Lima 138 kV | | |
| 01710 | line to increase the | | |
| | emergency rating | | AEP (100%) |

* Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|----------|--------------------------------|----------------------------|-------------------------|
| _ | Perform a sag study on the | _ | - |
| b1419 | Findlay Center – Fostoria Ctl | | |
| 01419 | 138 kV line to increase the | | |
| | emergency rating | | AEP (100%) |
| | A sag study will be required | | |
| | to increase the emergency | | |
| | rating for this line. | | |
| b1420 | Depending on the outcome of | f | |
| | this study, more action may | | |
| | be required in order to | | |
| | increase the rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1421 | Sorenson – McKinley 138 kV | 7 | |
| 01421 | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on John | | |
| | Amos – St. Albans 138 kV | | |
| b1422 | line to allow for operation up | | |
| | to its conductor emergency | | |
| | rating | | AEP (100%) |
| | A sag study will be performe | d | |
| | on the Chemical – Capitol | | |
| b1423 | Hill 138 kV line to determine | | |
| | if the emergency rating can b | e | |
| | utilized | | AEP (100%) |
| | Perform a sag study for | | |
| h1/2/ | Benton Harbor – West Street | | |
| b1424 | – Hartford 138 kV line to | | |
| | improve the emergency rating | 9 | AEP (100%) |
| | Perform a sag study for the | | |
| | East Monument – East | | |
| b1425 | Danville 138 kV line to allow | 7 | |
| | for operation up to the | | |
| | conductor's maximum | | AEP (100%) |

| operating temperature | |
|-----------------------|--|
| | |

^{*} Neptune Regional Transmission System, LLC

| Required ' | Γransmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|--------------------------------|----------------------------|-------------------------|
| | Perform a sag study for the | | |
| | Reusens – Graves 138 kV line | e | |
| b1426 | to allow for operation up to | | |
| | the conductor's maximum | | |
| | operating temperature | | AEP (100%) |
| | Perform a sag study on Smith | | |
| | Mountain – Leesville – | | |
| b1427 | Altavista – Otter 138 kV and | | |
| | on Boones – Forest – New | | |
| | London – JohnsMT – Otter | | AEP (100%) |
| | Perform a sag study on Smith | | |
| | Mountain – Candlers | | |
| b1428 | Mountain 138 kV and Joshua | | |
| | Falls – Cloverdale 765 kV to | | |
| | allow for operation up to | | AEP (100%) |
| | Perform a sag study on | | |
| | Fremont – Clinch River 138 | | |
| b1429 | kV to allow for operation up | | |
| | to its conductor emergency | | |
| | ratings | | AEP (100%) |
| | Install a new 138 kV circuit | | |
| | breaker at Benton Harbor | | |
| b1430 | station and move the load | | |
| | from Watervliet 34.5 kV | | |
| | station to West street 138 kV | | AEP (100%) |
| | Perform a sag study on the | | |
| | Kenova – Tri State 138 kV | | |
| b1432 | line to allow for operation up | | |
| | to their conductor emergency | | |
| | rating | | AEP (100%) |
| | Replace risers in the West | | |
| b1433 | Huntington Station to | | |
| | increase the line ratings | | AEP (100%) |

| which would eliminate the | |
|---------------------------|--|
| overloads for the | |
| contingencies listed | |

| Required' | Γransmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|-----------|---------------------------------|----------------------------|-------------------------|
| | Perform a sag study on the | | |
| b1434 | line from Desoto to Madison | | |
| | Replace bus and risers at | | |
| | Daleville station and replace | | |
| | bus and risers at Madison | | AEP (100%) |
| b1435 | Replace the 2870 MCM | | |
| | ACSR riser at the Sporn | | |
| | station | | AEP (100%) |
| b1436 | Perform a sag study on the | | |
| | Sorenson – Illinois Road 138 | | |
| | kV line to increase the | | |
| | emergency MOT for this line | | |
| | Replace bus and risers at | | |
| | Illinois Road | | AEP (100%) |
| b1437 | Perform sag study on Rock | | |
| | Cr. – Hummel Cr. 138 kV to | | |
| | increase the emergency MOT | | |
| | for the line, replace bus and | | |
| | risers at Huntington J., and | | |
| | replace relays for Hummel | | |
| | Cr. – Hunt – Soren. Line at | | |
| | Soren | | AEP (100%) |
| b1438 | Replacement of risers at | | |
| | McKinley and Industrial Parl | | |
| | stations and performance of a | | |
| | sag study for the 4.53 miles of | of | |
| | 795 ACSR section is | | |
| | expected to improve the | | |
| | Summer Emergency rating to | | |
| | 335 MVA | | AEP (100%) |
| b1439 | By replacing the risers at | | |
| | Lincoln both the Summar | | |
| | Normal and Summer | | AEP (100%) |

| Emergency ratings will | |
|------------------------|--|
| improve to 268 MVA | |

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) By replacing the breakers at Lincoln the Summer b1440 Emergency rating will improve to 251 MVA AEP (100%) Replacement of risers at South Side and performance of a sag study for the 1.91 b1441 miles of 795 ACSR section is expected to improve the Summer Emergency rating to 335 MVA AEP (100%) Replacement of 954 ACSR conductor with 1033 ACSR and performance of a sag b1442 study for the 4.54 miles of 2-636 ACSR section is expected AEP (100%) Station work at Thelma and Busseyville Stations will be b1443 performed to replace bus and risers AEP (100%) Perform electrical clearance studies on Clinch River -Clinchfield 139 kV line b1444 (a.k.a. sag studies) to determine if the emergency ratings can be utilized AEP (100%) Perform a sag study on the Addison (Buckeye CO-OP) – Thinever and North Crown b1445 City – Thivener 138 kV sag study and switch AEP (100%)

^{*} Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|---------------|---------------------------------|----------------------------|-------------------------|
| | Perform a sag study on the | | |
| b1446 | Parkersburg (Allegheny | | |
| 01440 | Power) – Belpre (AEP) 138 | | |
| | kV | | AEP (100%) |
| b1447 | Dexter – Elliot tap 138 kV | | |
| 01447 | sag check | | AEP (100%) |
| L 1110 | Dexter – Meigs 138 kV | | |
| b1448 | Electrical Clearance Study | | AEP (100%) |
| 1 1 4 4 0 | Meigs tap – Rutland 138 kV | | |
| b1449 | sag check | | AEP (100%) |
| | Muskingum – North | | |
| b1450 | Muskingum 138 kV sag | | |
| | check | | AEP (100%) |
| 1.1451 | North Newark – Sharp Road | | |
| b1451 | 138 kV sag check | | AEP (100%) |
| L1450 | North Zanesville – Zanesville | | |
| b1452 | 138 kV sag check | | AEP (100%) |
| | North Zanesville – Powelson | | |
| b1453 | and Ohio Central – Powelson | | |
| | 138 kV sag check | | AEP (100%) |
| | Perform an electrical | | |
| | clearance study on the Ross - | | |
| b1454 | Delano – Scioto Trail 138 kV | | |
| 01434 | line to determine if the | | |
| | emergency rating can be | | |
| | utilized | | AEP (100%) |
| | Perform a sag check on the | | |
| | Sunny – Canton Central – | | |
| b1455 | Wagenhals 138 kV line to | | |
| 01733 | determine if all circuits can b | e | |
| | operated at their summer | | |
| | emergency rating | | AEP (100%) |

^{*} Neptune Regional Transmission System, LLC

| Required ' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|--|----------------------------|-------------------------|
| | The Tidd – West Bellaire 345 kV circuit has been de-rated to its normal rating and would | | |
| b1456 | need an electrical clearance study to determine if the | | |
| | emergency rating can be utilized | | AEP (100%) |
| b1457 | The Tiltonsville – Windsor 138 kV circuit has been derated to its normal rating and would need an electrical clearance study to determine if the emergency rating could be utilized | | |
| b1458 | Install three new 345 kV breakers at Bixby to separate the Marquis 345 kV line and transformer #2. Operate Circleville – Harrison 138 kV and Harrison – Zuber 138 kV up to conductor emergency ratings | | AEP (100%) AEP (100%) |
| b1459 | Several circuits have been de- rated to their normal conductor ratings and could benefit from electrical clearance studies to determine if the emergency rating could be utilized | | AEP (100%) |
| b1460 | Replace 2156 & 2874 risers | | AEP (100%) |
| b1461 | Replace meter, metering CTs and associated equipment at the Paden City feeder | | AEP (100%) |

| b1462 | Replace relays at both South Cadiz 138 kV and Tidd 138 | |
|-------|---|------------|
| | kV | AEP (100%) |

^{*} Neptune Regional Transmission System, LLC

Annual Revenue Requirement Required Transmission Enhancements Responsible Customer(s) Reconductor the Bexley b1463 Groves 138 kV circuit AEP (100%) b1464 Corner 138 kV upgrades AEP (100%) AEC (0.71%) / AEP (75.06%) / APS (1.25%) / BGE (1.81%) / ComEd (5.91%) / Dayton (0.86%) / DL (1.23%) / DPL (0.95%) / Add a 3rd 2250 MVA b1465.1 765/345 kV transformer at Dominion (3.89%) / JCPL (1.58%) / NEPTUNE (0.15%) / Sullivan station HTP (0.07%) / PECO (2.08%) / PEPCO (1.66%) / ECP (0.07%)** / PSEG (2.62%) / RE (0.10%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK Replace the 100 MVAR 765 (3.23%) / DL (1.73%) / DPL kV shunt reactor bank on (2.65%) / Dominion (13.03%) / b1465.2 Rockport – Jefferson 765 kV EKPC (1.77%) / JCPL (3.84%) / line with a 300 MVAR bank ME (1.93%) / NEPTUNE* at Rockport Station (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (100%)

^{*}Neptune Regional Transmission System, LLC

^{**}East Coast Power, L.L.C.

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s)

| Required I | ired Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) | | | |
|-------------|---|-----------------------------------|--|--|
| | | Load-Ratio Share Allocation: | | |
| | | AEC (1.71%) / AEP (14.04%) / APS | | |
| | | (5.61%) / ATSI (8.10%) / BGE | | |
| | | (4.36%) / ComEd (13.14%) / Dayton | | |
| | | (2.15%) / DEOK (3.23%) / DL | | |
| | Transpose the Rockport – | (1.73%) / DPL (2.65%) / Dominion | | |
| h1465 2 | Sullivan 765 kV line and the | (13.03%) / EKPC (1.77%) / JCPL | | |
| b1465.3 | Rockport – Jefferson 765 | (3.84%) / ME (1.93%) / NEPTUNE* | | |
| | kV line | (0.45%) / OVEC (0.07%) / PECO | | |
| | | (5.29%) / PENELEC (1.89%) / | | |
| | | PEPCO (3.82%) / PPL (4.72%) / | | |
| | | PSEG (6.21%) / RE (0.26%) | | |
| | | DFAX Allocation: | | |
| | | AEP (100%) | | |
| | | Load-Ratio Share Allocation: | | |
| | | AEC (1.71%) / AEP (14.04%) / APS | | |
| | | (5.61%) / ATSI (8.10%) / BGE | | |
| | | (4.36%) / ComEd (13.14%) / Dayton | | |
| | | (2.15%) / DEOK (3.23%) / DL | | |
| | Make switching | (1.73%) / DPL (2.65%) / Dominion | | |
| b1465.4 | improvements at Sullivan | (13.03%) / EKPC (1.77%) / JCPL | | |
| 01403.4 | and Jefferson 765 kV | (3.84%) / ME (1.93%) / NEPTUNE* | | |
| | stations | (0.45%) / OVEC (0.07%) / PECO | | |
| | | (5.29%) / PENELEC (1.89%) / | | |
| | | PEPCO (3.82%) / PPL (4.72%) / | | |
| | | PSEG (6.21%) / RE (0.26%) | | |
| | | DFAX Allocation: | | |
| | | AEP (100%) | | |
| | Create an in and out loop at | | | |
| 1 1 4 6 6 1 | Adams Station by removing | | | |
| b1466.1 | the hard tap that currently | A FID (1000) | | |
| | exists | AEP (100%) | | |

| b1466.2 | Upgrade the Adams | |
|---------|-----------------------|------------|
| 01400.2 | transformer to 90 MVA | AEP (100%) |

| Required T | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|------------------------------|----------------------------|-------------------------|
| | At Seaman Station install a | | |
| b1466.3 | new 138 kV bus and two | | |
| | new 138 kV circuit breakers | | AEP (100%) |
| | Convert South Central Co- | | |
| b1466.4 | op's New Market 69 kV | | |
| | Station to 138 kV | | AEP (100%) |
| | The Seaman – Highland | | |
| | circuit is already built to | | |
| b1466.5 | 138 kV, but is currently | | |
| 01400.3 | operating at 69 kV, which | | |
| | would now increase to 138 | | |
| | kV | | AEP (100%) |
| | At Highland Station, install | | |
| | a new 138 kV bus, three | | |
| b1466.6 | new 138 kV circuit breakers | | |
| | and a new 138/69 kV 90 | | |
| | MVA transformer | | AEP (100%) |
| | Using one of the bays at | | |
| | Highland, build a 138 kV | | |
| b1466.7 | circuit from Hillsboro – | | |
| | Highland 138 kV, which is | | |
| | approximately 3 miles | | AEP (100%) |
| | Install a 14.4 MVAr | | |
| b1467.1 | Capacitor Bank at New | | |
| | Buffalo station | | AEP (100%) |
| | Reconfigure the 138 kV bus | | |
| | at LaPorte Junction station | | |
| b1467.2 | to eliminate a contingency | | |
| 01407.2 | resulting in loss of two 138 | | |
| | kV sources serving the | | |
| | LaPorte area | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required T | | Annual Revenue Requirement | Responsible Customer(s) |
|-------------|-------------------------------|----------------------------|-------------------------|
| | Expand Selma Parker Station | | |
| b1468.1 | and install a 138/69/34.5 kV | | |
| | transformer | | AEP (100%) |
| | Rebuild and convert 34.5 kV | | |
| b1468.2 | line to Winchester to 69 kV, | | |
| | including Farmland Station | | AEP (100%) |
| b1468.3 | Retire the 34.5 kV line from | | |
| 01400.3 | Haymond to Selma Wire | | AEP (100%) |
| | Conversion of the | | |
| 1.1460.1 | Newcomerstown – | | |
| b1469.1 | Cambridge 34.5 kV system | | |
| | to 69 kV operation | | AEP (100%) |
| | Expansion of the Derwent 69 |) | |
| 1 1 4 6 0 2 | kV Station (including | | |
| b1469.2 | reconfiguration of the 69 kV | | |
| | system) | | AEP (100%) |
| | Rebuild 11.8 miles of 69 kV | | |
| 1-1460-2 | line, and convert additional | | |
| b1469.3 | 34.5 kV stations to 69 kV | | |
| | operation | | AEP (100%) |
| | Build a new 138 kV double | | |
| 1 1 470 1 | circuit off the Kanawha – | | |
| b1470.1 | Bailysville #2 138 kV circuit | | |
| | to Skin Fork Station | | AEP (100%) |
| 1 1 170 0 | Install a new 138/46 kV | | ` , |
| b1470.2 | transformer at Skin Fork | | AEP (100%) |
| | Replace 5 Moab's on the | | / |
| 1.1.450.0 | Kanawha – Baileysville line | | |
| b1470.3 | with breakers at the Sundial | | |
| | 138 kV station | | AEP (100%) |
| | Perform a sag study on the | | (22,2) |
| | East Lima – For Lima – | | |
| b1471 | Rockhill 138 kV line to | | |
| | increase the emergency | | AEP (100%) |

| | rating | |
|--|--------|--|
| | | |

^{*}Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|----------|---|----------------------------|-------------------------|
| b1472 | Perform a sag study on the East Lima – Haviland 138 kV line to increase the emergency rating | , | AEP (100%) |
| b1473 | Perform a sag study on the East New Concord – Muskingum River section of the Muskingum River – West Cambridge 138 kV circuit | | AEP (100%) |
| b1474 | Perform a sag study on the Ohio Central – Prep Plant tap 138 kV circuit | | AEP (100%) |
| b1475 | Perform a sag study on the S73 – North Delphos 138 kV line to increase the emergency rating | | AEP (100%) |
| b1476 | Perform a sag study on the S73 – T131 138 kV line to increase the emergency rating | | AEP (100%) |
| b1477 | The Natrium – North Martin 138 kV circuit would need an electrical clearance study among other equipment upgrades | | AEP (100%) |
| b1478 | Upgrade Strouds Run – Strounds Tap 138 kV relay and riser | | AEP (100%) |
| b1479 | West Hebron station upgrade | S | AEP (100%) |
| b1480 | Perform upgrades and a sag study on the Corner – Layman 138 kV section of the Corner – Muskingum River 138 kV circuit | e | AEP (100%) |

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

| Required 7 | Transmission Enhancements | Annual Revenue Requirement | nt Responsible Customer(s) |
|------------|-------------------------------|----------------------------|----------------------------|
| | Perform a sag study on the | | |
| | West Lima – Eastown Road | | |
| b1481 | – Rockhill 138 kV line and | | |
| 01461 | replace the 138 kV risers at | | |
| | Rockhill station to increase | | |
| | the emergency rating | | AEP (100%) |
| | Perform a sag study for the | | |
| b1482 | Albion – Robison Park 138 | | |
| 01402 | kV line to increase its | | |
| | emergency rating | | AEP (100%) |
| | Sag study 1 mile of the | | |
| | Clinch River – Saltville 138 | | |
| b1483 | kV line and replace the riser | S | |
| 01703 | and bus at Clinch River, | | |
| | Lebanon and Elk Garden | | |
| | Stations | | AEP (100%) |
| | Perform a sag study on the | | |
| b1484 | Hacienda – Harper 138 kV | | |
| 01404 | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1485 | Jackson Road - Concord | | |
| 01403 | 183 kV line to increase the | | |
| | emergency rating | | AEP (100%) |
| | The Matt Funk – Poages Mi | 1 | |
| b1486 | – Starkey 138 kV line | | |
| | requires | | AEP (100%) |
| | Perform a sag study on the | | |
| b1487 | New Carlisle – Trail Creek | | |
| 01407 | 138 kV line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1488 | Olive – LaPorte Junction 13 | 8 | |
| | kV line to increase the | | AEP (100%) |

| eı | mergency rating | |
|----|-----------------|--|
| | | |

^{*}Neptune Regional Transmission System, LLC

| Required T | ransmission Enhancements An | nual Revenue Requirement | Responsible Customer(s) |
|-------------------|--------------------------------|--------------------------|-------------------------|
| | A sag study must be performed | | |
| | for the 5.40 mile Tristate – | | |
| b1489 | Chadwick 138 kV line to | | |
| | determine if a higher | | |
| | emergency rating can be used | | AEP (100%) |
| b1490.1 | Establish a new 138/69 kV | | |
| 01490.1 | Butler Center station | | AEP (100%) |
| | Build a new 14 mile 138 kV | | |
| b1490.2 | line from Auburn station to | | |
| 01490.2 | Woods Road station VIA | | |
| | Butler Center station | | AEP (100%) |
| | Replace the existing 40 MVA | | |
| b1490.3 | 138/69 kV transformer at | | |
| 01490.3 | Auburn station with a 90 MVA | | |
| | 138/96 kV transformer | | AEP (100%) |
| | Improve the switching | | |
| b1490.4 | arrangement at Kendallville | | |
| | station | | AEP (100%) |
| | Replace bus and risers at | | |
| | Thelma and Busseyville | | |
| b1491 | stations and perform a sag | | |
| | study for the Big Sandy – | | |
| | Busseyville 138 kV line | | AEP (100%) |
| | Reconductor 0.65 miles of the | | |
| b1492 | Glen Lyn – Wythe 138 kV line | | |
| | with 3 – 1590 ACSR | | AEP (100%) |
| | Perform a sag study for the | | |
| b1493 | Bellfonte – Grantston 138 kV | | |
| 01493 | line to increase its emergency | | |
| | rating | | AEP (100%) |
| | Perform a sag study for the | | |
| b1494 | North Proctorville – Solida – | | |
| U147 4 | Bellefonte 138 kV line to | | |
| | increase its emergency rating | | AEP (100%) |

| Required 7 | Γransmission Enhancements Ann | nual Revenue Requirement Responsible Customer(s) |
|------------|---|--|
| b1495 | Add an additional 765/345 kV transformer at Baker Station | AEC (0.41%) / AEP (87.22%) / BGE (1.03%) / ComEd (3.38%) / Dayton (1.23%) / DL (1.46%) / DPL (0.54%) / JCPL (0.90%) / NEPTUNE (0.09%) / HTP (0.04%) / PECO (1.18%) / PEPCO (0.94%) / ECP** (0.04%) / PSEG (1.48%) / RE (0.06%) |
| b1496 | Replace 138 kV bus and risers at Johnson Mountain Station | AEP (100%) |
| b1497 | Replace 138 kV bus and risers at Leesville Station | AEP (100%) |
| b1498 | Replace 138 kV risers at Wurno Station | AEP (100%) |
| b1499 | Perform a sag study on Sporn A – Gavin 138 kV to determine if the emergency rating can be improved | AEP (100%) |
| b1500 | The North East Canton – Wagenhals 138 kV circuit would need an electrical clearance study to determine if the emergency rating can be utilized | AEP (100%) |
| b1501 | The Moseley – Reusens 138 kV circuit requires a sag study to determine if the emergency rating can be utilized to address a thermal loading issue for a category C3 | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Reconductor the Conesville East – Conesville Prep Plant Tap 138 kV section of b1502 the Conesville - Ohio Central to fix Reliability N-1-1 thermal overloads AEP (100%) AEP (93.61%) / ATSI (2.99%) / Establish Sorenson 345/138 ComEd (2.07%) / HTP (0.03%) / b1659 PENELEC (0.31%) / ECP** kV station as a 765/345 kV station (0.03%) / PSEG (0.92%) / RE (0.04%)Replace Sorenson 138 kV b1659.1 breaker 'L1' AEP (100%) Replace Sorenson 138 kV b1659.2 breaker 'L2' breaker AEP (100%) Replace Sorenson 138 kV b1659.3 breaker 'M1' AEP (100%) Replace Sorenson 138 kV b1659.4 breaker 'M2' AEP (100%) Replace Sorenson 138 kV b1659.5 breaker 'N1' AEP (100%) Replace Sorenson 138 kV b1659.6 breaker 'N2' AEP (100%) Replace Sorenson 138 kV b1659.7 breaker 'O1' AEP (100%) Replace Sorenson 138 kV b1659.8 breaker 'O2' AEP (100%) Replace Sorenson 138 kV b1659.9 breaker 'M' AEP (100%) Replace Sorenson 138 kV b1659.10 breaker 'N' AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Annual Revenue Requirement Required Transmission Enhancements Responsible Customer(s) Replace Sorenson 138 kV b1659.11 breaker 'O' AEP (100%) Replace McKinley 138 kV b1659.12 breaker 'L1' AEP (100%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / Establish 765 kV yard at EKPC (1.77%) / JCPL (3.84%) / Sorenson and install four b1659.13 ME (1.93%) / NEPTUNE* 765 kV breakers (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (75.95%) / Dayton (7.52%) / DEOK (12.77%) / EKPC (3.76%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK Build approximately 14 (3.23%) / DL (1.73%) / DPL miles of 765 kV line from (2.65%) / Dominion (13.03%) / b1659.14 existing Dumont -EKPC (1.77%) / JCPL (3.84%) / Marysville line ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:**

| | AEP (71.06%) / ATSI (15.95%) / |
|--|--------------------------------|
| | Dayton (7.10%) / DL (4.84%) / |
| | EKPC (0.77%) / OVEC (0.28%) |

^{*}Neptune Regional Transmission System, LLC

| Required T | ransmission Enhancements | Annual Revenue Require | ement Responsible Customer(s) |
|------------|---------------------------|------------------------|-----------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | | | (1.73%) / DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / JCPL |
| b1660 | Install a 765/500 kV | | (3.84%) / ME (1.93%) / NEPTUNE* |
| 01000 | transformer at Cloverdale | | (0.45%) / OVEC (0.07%) / PECO |
| | | | (5.29%) / PENELEC (1.89%) / |
| | | | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | Dayton (8.37%) / DEOK (21.94%) / |
| | | | Dominion (56.40%) / EKPC |
| | | | (13.29%) |
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | Install a 765 kV circuit | | (1.73%) / DPL (2.65%) / Dominion |
| b1661 | breaker at Wyoming | | (13.03%) / EKPC (1.77%) / JCPL |
| 01001 | station | | (3.84%) / ME (1.93%) / NEPTUNE* |
| | station | | (0.45%) / OVEC (0.07%) / PECO |
| | | | (5.29%) / PENELEC (1.89%) / |
| | | | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |

| Required T | ransmission Enhancements | Annual Revenue Requirer | ment | Responsible Customer(s) |
|------------|---------------------------|-------------------------|------|-------------------------|
| | Rebuild 4 miles of 46 kV | | | |
| h1660 | line to 138 kV from | | | |
| b1662 | Pemberton to Cherry | | | |
| | Creek | | | AEP (100%) |
| | Circuit Breakers are | | | |
| | installed at Cherry Creek | | | |
| b1662.1 | (facing Pemberton) and at | | | |
| | Pemberton (facing Tams | | | |
| | Mtn. and Cherry Creek) | | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required 7 | Fransmission Enhancements A | Annual Revenue Require | ement Responsible Customer(s) |
|------------|---|------------------------|---|
| b1662.2 | Install three 138 kV breakers at Grandview Station (facing Cherry Creek, Hinton, and Bradley Stations) | | AEP (100%) |
| b1662.3 | Remove Sullivan Switching Station (46 kV) | | AEP (100%) |
| b1663 | Install a new 765/138 kV transformer at Jackson Ferry substation | | AEP (100%) |
| b1663.1 | Establish a new 10 mile double circuit 138 kV line between Jackson Ferry and Wythe | | AEP (100%) |
| b1663.2 | Install 2 765 kV circuit breakers, breaker disconnect switches and associated bus work for the new 765 kV breakers, and new relays for the 765 kV breakers at Jackson's Ferry | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: AEP (100%) |
| b1664 | Install switched capacitor banks at Kenwood 138 kV stations | | AEP (100%) |
| b1665 | Install a second 138/69 kV transformer at Thelma station | | AEP (100%) |

| b1665.1 | Construct a single circuit 69 kV line from West Paintsville to the new | |
|---------|--|------------|
| | Paintsville station | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Requirement | nt Responsible Customer(s) |
|------------|-------------------------------|----------------------------|-------------------------------|
| b1665.2 | Install new 7.2 MVAR, 46 | | |
| 01003.2 | kV bank at Kenwood Station | 1 | AEP (100%) |
| | Build an 8 breaker 138 kV | | |
| 1.1000 | station tapping both circuits | | |
| b1666 | of the Fostoria - East Lima | | |
| | 138 kV line | | AEP (90.65%) / Dayton (9.35%) |
| | Establish Melmore as a | | |
| | switching station with both | | |
| | 138 kV circuits terminating | | |
| b1667 | at Melmore. Extend the | | |
| | double circuit 138 kV line | | |
| | from Melmore to Fremont | | |
| | Center | | AEP (100%) |
| b1668 | Revise the capacitor setting | | |
| 01008 | at Riverside 138 kV station | | AEP (100%) |
| 1.1.660 | Capacitor setting changes at | | |
| b1669 | Ross 138 kV stations | | AEP (100%) |
| h1670 | Capacitor setting changes at | | |
| b1670 | Wooster 138 kV station | | AEP (100%) |
| b1671 | Install four 138 kV breakers | | |
| 010/1 | in Danville area | | AEP (100%) |
| b1676 | Replace Natrium 138 kV | | |
| 010/0 | breaker 'G (rehab)' | | AEP (100%) |
| h1677 | Replace Huntley 138 kV | | |
| b1677 | breaker '106' | | AEP (100%) |
| 1.1.670 | Replace Kammer 138 kV | | |
| b1678 | breaker 'G' | | AEP (100%) |
| 1.1.670 | Replace Kammer 138 kV | | |
| b1679 | breaker 'H' | | AEP (100%) |
| L1600 | Replace Kammer 138 kV | | |
| b1680 | breaker 'J' | | AEP (100%) |
| L1601 | Replace Kammer 138 kV | | . , |
| b1681 | breaker 'K' | | AEP (100%) |

| b1682 | Replace Kammer 138 kV | |
|-------|-----------------------|------------|
| 01082 | breaker 'M' | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Kammer 138 kV b1683 breaker 'N' AEP (100%) Replace Clinch River 138 kV b1684 breaker 'E1' AEP (100%) Replace Lincoln 138 kV b1685 breaker 'D' AEP (100%) Advance s0251.7 (Replace b1687 Corrid 138 kV breaker '104S') AEP (100%) Advance s0251.8 (Replace Corrid 138 kV breaker b1688 '104C') AEP (100%) Perform sag study on Altavista - Leesville 138 kV b1712.1 Dominion (75.30%) / PEPCO (24.70%) Rebuild the Altavista -Dominion (75.30%) / PEPCO b1712.2 Leesville 138 kV line (24.70%)Perform a sag study of the Bluff Point - Jauy 138 kV b1733 line. Upgrade breaker, wavetrap, and risers at the terminal ends AEP (100%) Perform a sag study of Randoph - Hodgins 138 kV b1734 line. Upgrade terminal equipment AEP (100%) Perform a sag study of R03 b1735 Magely 138 kV line. Upgrade terminal equipment AEP (100%)

| | Perform a sag study of the | |
|-------|------------------------------|------------|
| b1736 | Industrial Park - Summit 138 | |
| | kV line | AEP (100%) |
| | Sag study of | |
| b1737 | Newcomerstown - Hillview | |
| 01/3/ | 138 kV line. Upgrade - | |
| | terminal equipment | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required ' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|--------------------------------|----------------------------|-------------------------|
| | Perform a sag study of the | | |
| | Wolf Creek - Layman 138 kV | / | |
| b1738 | lineUpgrade terminal | | |
| | equipment including a 138 | | |
| | kV breaker and wavetrap | | AEP (100%) |
| | Perform a sag study of the | | |
| b1739 | Ohio Central - West Trinway | | |
| | 138 kV line | | AEP (100%) |
| b1741 | Replace Beatty 138 kV | | |
| 01711 | breaker '2C(IPP)' | | AEP (100%) |
| b1742 | Replace Beatty 138 kV | | |
| 01712 | breaker '1E' | | AEP (100%) |
| b1743 | Replace Beatty 138 kV | | |
| 01743 | breaker '2E' | | AEP (100%) |
| b1744 | Replace Beatty 138 kV | | |
| | breaker '3C' | | AEP (100%) |
| b1745 | Replace Beatty 138 kV | | |
| 01743 | breaker '2W' | | AEP (100%) |
| b1746 | Replace St. Claire 138 kV | | |
| 01740 | breaker '8' | | AEP (100%) |
| b1747 | Replace Cloverdale 138 kV | | |
| 01/4/ | breaker 'C' | | AEP (100%) |
| b1748 | Replace Cloverdale 138 kV | | |
| 01/40 | breaker 'D1' | | AEP (100%) |
| | Install two 138kV breakers | | |
| | and two 138kV circuit | | |
| | switchers at South Princeton | | |
| b1780 | Station and one 138kV | | |
| | breaker and one 138kV | | |
| | circuit switcher at Switchback | K | |
| | Station | | AEP (100%) |
| b1781 | Install three 138 kV breakers | | |
| 01/01 | and a 138kV circuit switcher | | AEP (100%) |

| at Trail Fork Station in | |
|--------------------------|--|
| Pineville, WV | |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install a 46kV Moab at Montgomery Station facing b1782 Carbondale (on the London -Carbondale 46 kV circuit) AEP (100%) Add two 138 kV Circuit Breakers and two 138 kV b1783 circuit switchers on the Lonesome Pine - South Bluefield 138 kV line AEP (100%) Install a 52.8 MVAR b1784 capacitor bank at the Clifford 138 kV station AEP (100%) Perform a sag study of 4 b1811.1 miles of the Waterford -Muskingum line AEP (100%) Rebuild 0.1 miles of b1811.2 Waterford - Muskingum 345 kV with 1590 ACSR AEP (100%) Reconductor the AEP portion of the South Canton -Harmon 345 kV with 954 ACSR and upgrade terminal b1812 equipment at South Canton. Expected rating is 1800 MVA S/N and 1800 MVA S/E AEP (100%) Install (3) 345 kV circuit breakers at East Elkhart b1817 station in ring bus designed as a breaker and half scheme AEP (100%)

^{*}Neptune Regional Transmission System, LLC

| Required 7 | Fransmission Enhancements Annu | al Revenue Requireme | ent Responsible Customer(s) |
|------------|-----------------------------------|----------------------|--------------------------------|
| | Expand the Allen station by | | |
| | installing a second 345/138 kV | | |
| | transformer and adding four 138 | | |
| b1818 | kV exits by cutting in the | | |
| | Lincoln - Sterling and Milan - | | |
| | Timber Switch 138 kV double | | AEP (88.30%) / ATSI (8.86%) / |
| | circuit tower line | | Dayton (2.84%) |
| | Rebuild the Robinson Park - | | |
| | Sorenson 138 kV line corridor as | | |
| b1819 | a 345 kV double circuit line with | | |
| | one side operated at 345 kV and | | AEP (87.18%) / ATSI (10.06%) / |
| | one side at 138 kV | | Dayton (2.76%) |
| | Perform a sag study for Hancock | | |
| | - Cave Spring - Roanoke 138 kV | | |
| | circuit to reach new SE ratings | | |
| b1859 | of 272MVA (Cave Spring- | | |
| | Hancock), 205MVA (Cave | | |
| | Spring-Sunscape), 245MVA | | |
| | (ROANO2-Sunscape) | | AEP (100%) |
| | Perform a sag study on the | | |
| | Crooksville - Spencer Ridge | | |
| | section (14.3 miles) of the | | |
| b1860 | Crooksville-Poston-Strouds Run | | |
| | 138 kV circuit to see if any | | |
| | remedial action needed to reach | | |
| | the SE rating (175MVA) | | AEP (100%) |
| b1861 | Reconductor 0.83 miles of the | | |
| | Dale - West Canton 138 kV Tie- | | |
| | line and upgrade risers at West | | |
| | Canton 138 kV | | AEP (100%) |
| b1862 | Perform a sag study on the Grant | | |
| | - Greentown 138 kV circuit and | | |
| | replace the relay CT at Grant | | |
| | 138 kV station to see if any | | AEP (100%) |

| remedial action needed to reach | |
|---------------------------------|--|
| the new ratings of 251/286MVA | |

^{*}Neptune Regional Transmission System, LLC

| Required T | Fransmission Enhancements | Annual Revenue Requireme | ent Responsible Customer(s) |
|------------|-------------------------------|--------------------------|------------------------------|
| | Perform a sag study of the | | |
| b1863 | Kammer - Wayman SW 138 | | |
| | kV line to see if any remedia | | |
| | action needed to reach the | | |
| | new SE rating of 284MVA | | AEP (100%) |
| b1864.1 | Add two additional 345/138 | | AEP (87.22%) / APS (8.22%) / |
| 01804.1 | kV transformers at Kammer | | ATSI (3.52%) / DL (1.04%) |
| h10612 | Add second West Bellaire - | | AEP (87.22%) / APS (8.22%) / |
| b1864.2 | Brues 138 kV circuit | | ATSI (3.52%) / DL (1.04%) |
| L10642 | Replace Kammer 138 kV | | |
| b1864.3 | breaker 'E' | | AEP (100%) |
| | Perform a sag study on the | | |
| | Kanawha - Carbondale 138 | | |
| b1865 | kV line to see if any remedia | | |
| | action needed to reach the | | |
| | new ratings of 251/335MVA | | AEP (100%) |
| | Perform a sag study on the | | |
| | Clinch River-Lock Hart- | | |
| | Dorton 138kV line,increase | | |
| b1866 | the Relay Compliance Trip | | |
| 01000 | Limit at Clinch River on the | | |
| | C.RDorton 138kV line to | | |
| | 310 and upgrade the risers | | |
| | with 1590ACSR | | AEP (100%) |
| | Perform a sag study on the | | |
| | Newcomerstown - South | | |
| b1867 | Coshocton 138 kV line to see | | |
| | if any remedial action is | | |
| | needed to reach the new SE | | |
| | rating of 179MVA | | AEP (100%) |
| b1868 | Perform sag study on the | | |
| | East Lima - new Liberty 138 | | // / |
| | kV line to see if any remedia | | AEP (100%) |

| Ţ | |
|-----------------------------|----|
| action is needed to reach t | ne |
| new SE rating of 219MV | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study of the Ohio Central - South Coshocton 138 kV circuit to b1869 see if any remedial action needed to reach the new SE ratings of 250MVA AEP (100%) Replace the Ohio Central transformer #1 345/138/12 b1870 kV 450 MVA for a AEP (68.16%) / ATSI (25.27%) / 345/138/34.5 kV 675 MVA Dayton (3.88%) / PENELEC transformer (1.59%) / DEOK (1.10%) Perform a sag study on the Central - West Coshocton b1871 138 kV line (improving the emergency rating of this line to 254 MVA) AEP (100%) Add a 57.6 MVAr capacitor bank at East Elkhart 138 kv b1872 station in Indiana AEP (100%) Install two 138 kV circuit breakers at Cedar Creek b1873 Station and primary side circuit switcher on the 138/69/46 kV transformer AEP (100%)

^{*}Neptune Regional Transmission System, LLC

| Required ' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|-------------------------------|----------------------------|-------------------------|
| | Install two 138 kV circuit | | |
| b1874 | breakers and one 138 kV | | |
| | circuit switcher at Magely | | |
| | 138 kV station in Indiana | | AEP (100%) |
| | Build 25 miles of new 138 kV | I I | |
| | line from Bradley Station | | |
| | through Tower 117 Station | | |
| b1875 | and terminating at McClung | | |
| 01073 | 138 kV station. Existing 69 | | |
| | kV distribution transformers | | |
| | will be replaced with 138 kV | | |
| | transformers | | APS (100%) |
| | Install a 14.4 MVAr capacito | r | |
| b1876 | bank at Capital Avenue | | |
| 01070 | (AKA Currant Road) 34.5 kV | 7 | |
| | bus | | AEP (100%) |
| | Relocate 138 kV Breaker G to | О | |
| b1877 | the West Kingsport - Industry | 7 | |
| 01077 | Drive 138 kV line and | | |
| | Remove 138 kV MOAB | | AEP (100%) |
| | Perform a sag study on the | | |
| | Lincoln - Robinson Park 138 | | |
| b1878 | kV line (Improve the | | |
| | emergency rating to 244 | | |
| | MVA) | | AEP (100%) |
| b1879 | Perform a sag study on the | | |
| | Hansonville - Meadowview | | |
| | 138 kV line (Improve the | | |
| | emergency rating to 245 | | |
| | MVA) | | AEP (100%) |
| b1880 | Rebuild the 15 miles of the | | |
| | Moseley - Roanoke 138 kV | | |
| | line. This project would | | AEP (100%) |

| consist of rebuilding both circuits on the double circuit | |
|---|--|
| line | |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace existing 600 Amp switches, station risers and increase the CT ratios associated b1881 with breaker 'G' at Sterling 138 kV Station. It will increase the rating to 296 MVA S/N and 384 MVA S/E AEP (100%) Perform a sag study on the Bluff Point - Randolf 138 kV line to b1882 see if any remedial action needed to reach the new SE rating of 255 MVA AEP (100%) Switch the breaker position of b1883 transformer #1 and SW Lima at East Lima 345 kV bus AEP (100%) Perform a sag study on Strawton station - Fisher Body - Deer b1884 Creek 138 kV line to see if any remedial action needed to reach the new SE rating of 250 MVA AEP (100%) Establish a new 138/69 kV source at Carrollton and construct two new 69 kV lines from Carrollton b1887 to tie into the Dennison - Miller SW 69 kV line and to East Dover 69 kV station respectively AEP (100%) Install a 69 kV line breaker at Blue Pennant 69 kV Station b1888 facing Bim Station and 14.4 MVAr capacitor bank AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install a 43.2 MVAR capacitor b1889 bank at Hinton 138 kV station (APCO WV) AEP (100%) Rebuild the Ohio Central - West Trinway (4.84 miles) section of the Academia - Ohio Central 138 b1901 kV circuit. Upgrade the Ohio Central riser, Ohio Central switch and the West Trinway riser AEP (100%) Construct new 138/69 Michiana Station near Bridgman by tapping b1904.1 the new Carlisle - Main Street 138 kV and the Bridgman -Buchanan Hydro 69 kV line AEP (100%) Establish a new 138/12 kV New Galien station by tapping the b1904.2 Olive - Hickory Creek 138 kV line AEP (100%) Retire the existing Galien station and move its distribution load to b1904.3 New Galien station. Retire the Buchanan Hydro - New Carlisile 34.5 kV line AEP (100%) Implement an in and out scheme at Cook 69 kV by eliminating the Cook 69 kV tap point and by b1904.4 installing two new 69 kV circuit breakers AEP (100%) Rebuild the Bridgman - Cook 69 b1904.5 kV and the Derby - Cook 69 kV AEP (100%) Perform a sag study on the Brues b1946 West Bellaire 138 kV line AEP (100%)

| b1947 | A sag study of the Dequine - Meadowlake 345 kV line #1 line | |
|-------|--|------------|
| 01947 | may improve the emergency | |
| | rating to 1400 MVA | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required ' | Transmission Enhancements A | Annual Revenue Requireme | ent Responsible Customer(s) |
|------------|--------------------------------|--------------------------|-------------------------------|
| | Establish a new 765/345 | | |
| | interconnection at Sporn. | | |
| b1948 | Install a 765/345 kV | | |
| 01740 | transformer at Mountaineer | | ATSI (61.08%) / DL (21.87%) / |
| | and build 34 mile of 345 kV to | | Dominion (13.97%) / PENELEC |
| | Sporn | | (3.08%) |
| | Perform a sag study on the | | |
| b1949 | Grant Tap – Deer Creek 138 | | |
| 01747 | kV line and replace bus and | | |
| | risers at Deer Creek station | | AEP (100%) |
| | Perform a sag study on the | | |
| b1950 | Kammer – Ormet 138 kV line | | |
| | of the conductor section | | AEP (100%) |
| | Perform a sag study of the | | |
| b1951 | Maddox- Convoy 345 kV line | | |
| 01/31 | to improve the emergency | | |
| | rating to 1400 MVA | | AEP (100%) |
| | Perform a sag study of the | | |
| b1952 | Maddox – T130 345 kV line | | |
| 01702 | to improve the emergency | | . — |
| | rating to 1400 MVA | | AEP (100%) |
| | Perform a sag study of the | | |
| | Meadowlake - Olive 345 kV | | |
| b1953 | line to improve the | | |
| | emergency rating to 1400 | | 177 (1991) |
| | MVA | | AEP (100%) |
| | Perform a sag study on the | | |
| b1954 | Milan - Harper 138 kV line | | |
| | and replace bus and switches | | 177 (100) |
| | at Milan Switch station | | AEP (100%) |
| | Perform a sag study of the R- | | |
| b1955 | 049 - Tillman 138 kV line | | |
| | may improve the emergency | | |
| | rating to 245 MVA | | AEP (100%) |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study of the Tillman - Dawkins 138 kV b1956 line may improve the emergency rating to 245 MVA AEP (100%) AEP (69.41%) / ATSI (23.11%) / Terminate Transformer #2 at ECP** (0.17%) / HTP (0.19%) / b1957 SW Lima in a new bay PENELEC (2.42%) / PSEG position (4.52%) / RE (0.18%) Perform a sag study on the Brookside - Howard 138 kV b1958 line and replace bus and risers at AEP Howard station AEP (100%) Sag Study on 7.2 miles SE Canton-Canton Central b1960 138kV ckt AEP (100%) Sag study on the Southeast Canton – Sunnyside 138kV b1961 line AEP (100%)

^{*}Neptune Regional Transmission System, LLC

^{**}East Coast Power, L.L.C.

| Required ' | Transmission Enhancements | Annual Revenue Requirem | ent Responsible Customer(s) |
|------------|------------------------------|-------------------------|-------------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd (13.14%) / |
| | | | Dayton (2.15%) / DEOK (3.23%) / |
| | | | DL (1.73%) / DPL (2.65%) / |
| | Add four 765 kV breakers at | | Dominion (13.03%) / EKPC |
| b1962 | Kammer | | (1.77%) / JCPL (3.84%) / ME |
| | Kammer | | (1.93%) / NEPTUNE* (0.45%) / |
| | | | OVEC (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| | Build approximately 1 mile o | f | |
| | circuit comprising of 2-954 | | |
| b1963 | ACSR to get the rating of | | |
| | Waterford-Muskinum 345 kV | | |
| | higher | | AEP (100%) |
| | | | APS (33.51%) / ATSI (32.21%) / |
| | Reconductor 13 miles of the | | DL (18.64%) / Dominion (6.01%) / |
| b1970 | Kammer – West Bellaire | | ECP** (0.10%) / HTP (0.11%) / |
| 01770 | 345kV circuit | | JCPL (1.68%) / Neptune* (0.18%) |
| | | | / PENELEC (4.58%) / PSEG |
| | | | (2.87%) / RE (0.11%) |
| | Perform a sag study to | | |
| b1971 | improve the emergency rating | | |
| | on the Bridgville – | | A FID (1999) |
| | Chandlersville 138 kV line | | AEP (100%) |
| 1.1072 | Replace disconnect switch on | | |
| b1972 | the South Canton 765/345 kV | | A FID (1000()) |
| | transformer | | AEP (100%) |

*Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements A | annual Revenue Requiremen | nt Responsible Customer(s) |
|------------|---|---------------------------|---|
| | Perform a sag study to | | |
| b1973 | improve the emergency | | |
| | rating on the Carrollton – | | AED (1000/) |
| | Sunnyside 138 kV line | | AEP (100%) |
| | Perform a sag study to | | |
| b1974 | improve the emergency rating on the Bethel Church – | | |
| | West Dover 138 kV line | | AED (1000/) |
| | | | AEP (100%) |
| b1975 | Replace a switch at South Millersburg switch station | | AED (1000/) |
| | Withersburg switch station | | AEP (100%) |
| | | | ATSI (37.04%) / AEP (34.35%) / Deprision (6.10%) |
| | Reconductor or rebuild | | DL (10.41%) / Dominion (6.19%) |
| b2017 | Sporn - Waterford - | | / APS (3.94%) / PENELEC |
| 02017 | Muskingum River 345 kV | | (3.09%) / JCPL (1.39%) / Dayton |
| | line | | (1.20%) / Neptune* (0.14%) / HTP (0.09%) / ECP** (0.08%) / |
| | | | ` , , , , , , , , , , , , , , , , , , , |
| | | | PSEG (2.00%) / RE (0.08%) ATSI (58.58%) / AEP (14.16%) / |
| | Loop Conseville Pivby 245 | | APS (12.88%) / DL (7.93%) / |
| b2018 | Loop Conesville - Bixby 345 kV circuit into Ohio Central | | PENELEC (5.73%) / Dayton |
| | | | (0.72%) |
| | | | AEP (93.74%) / APS (4.40%) / |
| b2019 | Establish Burger 345/138 kV | | DL (1.11%) / ATSI (0.74%) / |
| 02017 | station | | PENELEC (0.01%) |
| | | | AEP (88.39%) / APS (7.12%) / |
| b2020 | Rebuild Amos - Kanawah | | ATSI (2.89%) / DEOK (1.58%) / |
| 02020 | River 138 kV corridor | | PEPCO (0.02%) |
| | | | AEP (91.92%) / DEOK (3.60%) / |
| | Add 345/138 transformer at | | APS (2.19%) / ATSI (1.14%) / |
| b2021 | Sporn, Kanawah River & | | DL (1.08%) / PEPCO (0.04%) / |
| | Muskingum River stations | | BGE (0.03%) |
| 1.0001.1 | Replace Kanawah 138 kV | | - () |
| b2021.1 | breaker 'L' | | AEP (100%) |

| b2021.2 | Replace Muskingum 138 kV | |
|---------|--------------------------|------------|
| 02021.2 | breaker 'HG' | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC **East Coast Power, L.L.C.

| | | it responsible editionier(s) |
|----------|--|----------------------------------|
| b2021.3 | Replace Muskingum 138 kV breaker 'HJ' | AEP (100%) |
| b2021.4 | Replace Muskingum 138 kV breaker 'HE' | AEP (100%) |
| b2021.5 | Replace Muskingum 138 kV breaker 'HD' | AEP (100%) |
| b2021.6 | Replace Muskingum 138 kV breaker 'HF' | AEP (100%) |
| b2021.7 | Replace Muskingum 138 kV breaker 'HC' | AEP (100%) |
| b2021.8 | Replace Sporn 138 kV breaker 'D1' | AEP (100%) |
| b2021.9 | Replace Sporn 138 kV breaker 'D2' | AEP (100%) |
| b2021.10 | Replace Sporn 138 kV breaker 'F1' | AEP (100%) |
| b2021.11 | Replace Sporn 138 kV breaker 'F2' | AEP (100%) |
| b2021.12 | Replace Sporn 138 kV breaker 'G' | AEP (100%) |
| b2021.13 | Replace Sporn 138 kV breaker 'G2' | AEP (100%) |
| b2021.14 | Replace Sporn 138 kV breaker 'N1' | AEP (100%) |
| b2021.15 | Replace Kanawah 138 kV breaker 'M' | AEP (100%) |
| b2022 | Terminate Tristate - Kyger Creek 345 kV line at Sport | AEP (97.99%) / DEOK (2.01%) |
| b2027 | Perform a sag study of the Tidd - Collier 345 kV line | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Requirement | t Responsible Customer(s) |
|----------|-------------------------------|----------------------------|--------------------------------|
| | Perform a sag study on East | | |
| b2028 | Lima - North Woodcock 138 | | |
| | kV line to improve the rating | | AEP (100%) |
| | Perform a sag study on | | |
| b2029 | Bluebell - Canton Central 13 | | |
| | kV line to improve the rating | | AEP (100%) |
| b2030 | Install 345 kV circuit | | |
| 02030 | breakers at West Bellaire | | AEP (100%) |
| | Sag study on Tilton - W. | | |
| b2031 | Bellaire section 1 (795 | | |
| | ACSR), about 12 miles | | AEP (100%) |
| b2032 | Rebuild 138 kV Elliot tap - | | ATSI (73.02%) / Dayton |
| 02032 | Poston line | | (19.39%) / DL (7.59%) |
| | Perform a sag study of the | | |
| b2033 | Brues - W. Bellaire 138 kV | | |
| | line | | AEP (100%) |
| | Adjust tap settings for | | |
| b2046 | Muskingum River | | |
| | transformers | | AEP (100%) |
| b2047 | Replace relay at Greenlawn | | |
| 02017 | • | | AEP (100%) |
| | Replace both 345/138 kV | | |
| b2048 | transformers with one bigger | | |
| | transformer | | AEP (92.49%) / Dayton (7.51%) |
| b2049 | Replace relay | | |
| 02017 | Replace Telay | | AEP (100%) |
| b2050 | Perform sag study | | |
| | | | AEP (100%) |
| | Install 3 138 kV breakers and | | |
| b2051 | a circuit switcher at Dorton | | |
| | station | | AEP (100%) |
| b2052 | Replace transformer | | AEP (67.17%) / ATSI (27.37%) / |
| 02032 | replace transformer | | Dayton (3.73%) / PENELEC |

| | | (1.73%) |
|-------|--|------------|
| b2054 | Perform a sag study of Sporn - Rutland 138 kV line | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace George Washington b2069 138 kV breaker 'A' with 63kA rated breaker AEP (100%) Replace Harrison 138 kV b2070 breaker '6C' with 63kA rated breaker AEP (100%) Replace Lincoln 138 kV b2071 breaker 'L' with 63kA rated breaker AEP (100%) Replace Natrum 138 kV breaker 'I' with 63kA rated b2072 breaker AEP (100%) Replace Darrah 138 kV b2073 breaker 'B' with 63kA rated breaker AEP (100%) Replace Wyoming 138 kV b2074 breaker 'G' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV breaker 'G1' with 80kA rated b2075 breaker AEP (100%) Replace Wyoming 138 kV b2076 breaker 'G2' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV b2077 breaker 'H' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV breaker 'H1' with 80kA rated b2078 breaker AEP (100%) Replace Wyoming 138 kV breaker 'H2' with 80kA rated b2079 breaker AEP (100%)

| b2080 | Replace Wyoming 138 kV breaker 'J' with 80kA rated | |
|-------|---|------------|
| | breaker | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|-----------|------------------------------|----------------------------|-------------------------|
| | Replace Wyoming 138 kV | | |
| b2081 | breaker 'J1' with 80kA rated | | |
| | breaker | | AEP (100%) |
| | Replace Wyoming 138 kV | | |
| b2082 | breaker 'J2' with 80kA rated | | |
| | breaker | | AEP (100%) |
| | Replace Natrum 138 kV | | |
| b2083 | breaker 'K' with 63kA rated | | |
| | breaker | | AEP (100%) |
| | Replace Tanner Creek 345 | | |
| b2084 | kV breaker 'P' with 63kA | | |
| | rated breaker | | AEP (100%) |
| | Replace Tanner Creek 345 | | |
| b2085 | kV breaker 'P2' with 63kA | | |
| | rated breaker | | AEP (100%) |
| | Replace Tanner Creek 345 | | |
| b2086 | kV breaker 'Q1' with 63kA | | |
| | rated breaker | | AEP (100%) |
| | Replace South Bend 138 kV | | |
| b2087 | breaker 'T' with 63kA rated | | |
| | breaker | | AEP (100%) |
| b2088 | Replace Tidd 138 kV breake | r | |
| 02000 | 'L' with 63kA rated breaker | | AEP (100%) |
| b2089 | Replace Tidd 138 kV breake | r | |
| 02009 | 'M2' with 63kA rated breake | r | AEP (100%) |
| | Replace McKinley 138 kV | | |
| b2090 | breaker 'A' with 40kA rated | | |
| | breaker | | AEP (100%) |
| | Replace West Lima 138 kV | | |
| b2091 | breaker 'M' with 63kA rated | | |
| | breaker | | AEP (100%) |
| b2092 | Replace George Washington | | |
| 02092 | 138 kV breaker 'B' with 63k. | A | AEP (100%) |

| rated breaker | |
|---------------|--|
| | |

^{*}Neptune Regional Transmission System, LLC

| | | t Tesponsione Customer(s) |
|-------|--------------------------------|-------------------------------|
| | Replace Turner 138 kV | |
| b2093 | breaker 'W' with 63kA rated | |
| | breaker | AEP (100%) |
| | Build a new 138 kV line from | |
| | Falling Branch to Merrimac | |
| b2135 | and add a 138/69 kV | |
| | transformer at Merrimac | |
| | Station | AEP (100%) |
| | Add a fourth circuit breaker | |
| | to the station being built for | |
| b2160 | the U4-038 project | |
| 02100 | (Conelley), rebuild U4-038 - | |
| | Grant Tap line as double | |
| | circuit tower line | AEP (100%) |
| | Rebuild approximately 20 | |
| | miles of the Allen - S073 | |
| | double circuit 138 kV line | |
| b2161 | (with one circuit from Allen - | |
| 02101 | Tillman - Timber Switch - | |
| | S073 and the other circuit | |
| | from Allen - T-131 - S073) | |
| | utilizing 1033 ACSR | AEP (100%) |
| | Perform a sag study to | |
| b2162 | improve the emergency rating | |
| | of the Belpre - Degussa 138 | |
| | kV line | AEP (100%) |
| b2163 | Replace breaker and wavetrap | |
| 02103 | at Jay 138 kV station | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

SCHEDULE 12 – APPENDIX A

- American Electric Power Service Corporation on behalf of its affiliate companies:

 AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan

 Transmission Company, Inc.; AEP Kentucky Transmission Company, Inc.; AEP

 Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company,

 Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kentucky

 Power Company; Kingsport Power Company; Ohio Power Company and Wheeling

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

| Required 11 | ansinission Emiancements Anni | iai Kevenue Kequitement | 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 | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: Dayton (8.37%) / DEOK (21.94%) / Dominion (56.40%) / EKPC (13.29%) |

^{*}Neptune Regional Transmission System, LLC

| | | <u> </u> | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |
|---------|-----------------------------|----------|---------------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | | | DEOK (3.23%) / DL (1.73%) / |
| | | | DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / |
| | Reconductor the AEP | | JCPL (3.84%) / ME (1.93%) / |
| b1797.1 | portion of the Cloverdale - | | NEPTUNE* (0.45%) / OVEC |
| 01/9/.1 | Lexington 500 kV line with | | (0.07%) / PECO (5.29%) / |
| | 2-1780 ACSS | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (0.79%) / APS (53.70%) / |
| | | | Dayton (0.15%) / DEOK |
| | | | (0.40%) / Dominion (1.13%) / |
| | | | EKPC (0.23%) / PEPCO |
| | | | (43.60%) |
| 1.2055 | Upgrade relay at Brues | | AED (1000/) |
| b2055 | station | | AEP (100%) |
| | Upgrade terminal | | |
| | equipment at Howard on | | |
| b2122.3 | the Howard - Brookside | | AEP (100%) |
| | 138 kV line to achieve | | |
| | ratings of 252/291 (SN/SE) | | |
| b2122.4 | Perform a sag study on the | | |
| | Howard - Brookside 138 | | AEP (100%) |
| | kV line | | |
| h2220 | Install a 300 MVAR | | AED (100%) |
| b2229 | reactor at Dequine 345 kV | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| required 11 | | dar reconde requirement | responsible customer(s) |
|-------------|--|-------------------------|------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | Poplose existing 150 | | DEOK (3.23%) / DL (1.73%) / |
| | Replace existing 150 MVAR reactor at Amos 765 | | DPL (2.65%) / Dominion |
| b2230 | kV substation on Amos - N. | | (13.03%) / EKPC (1.77%) / |
| 02230 | Proctorville - Hanging Rock | | JCPL (3.84%) / ME (1.93%) / |
| | with 300 MVAR reactor | | NEPTUNE* (0.45%) / OVEC |
| | with 500 W VAR leactor | | (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| | Install 765 kV reactor | | |
| b2231 | breaker at Dumont 765 kV | | AEP (100%) |
| 02231 | substation on the Dumont - | | ALI (100%) |
| | Wilton Center line | | |
| | Install 765 kV reactor | | |
| | breaker at Marysville 765 | | |
| b2232 | kV substation on the | | AEP (100%) |
| | Marysville - Maliszewski | | |
| | line | | |
| | Change transformer tap | | |
| b2233 | settings for the Baker | | AEP (100%) |
| | 765/345 kV transformer | | |
| | Loop the North Muskingum | | |
| b2252 | - Crooksville 138 kV line | | |
| | into AEP's Philo 138 kV | | AEP (100%) |
| | station which lies | | |
| | approximately 0.4 miles | | |

| from the line | |
|---------------|--|
| | |

^{*}Neptune Regional Transmission System, LLC

| required 11 | ansimission Emiancements Annu | iai Revenue Requirement | Responsible Customer(s) |
|-------------|---|-------------------------|-------------------------|
| | Install an 86.4 MVAR | | |
| b2253 | capacitor bank at Gorsuch | | AEP (100%) |
| | 138 kV station in Ohio | | |
| 1 225 4 | Rebuild approximately 4.9 | | A ED (1000() |
| b2254 | miles of Corner - Degussa | | AEP (100%) |
| | 138 kV line in Ohio | | |
| 1.0055 | Rebuild approximately 2.8 | | AED (1000/) |
| b2255 | miles of Maliszewski - Polaris 138 kV line in Ohio | | AEP (100%) |
| | | | |
| | Upgrade approximately 36 miles of 138 kV through | | |
| b2256 | path facilities between | | AEP (100%) |
| 02230 | Harrison 138 kV station and | | ALI (10070) |
| | Ross 138 kV station in Ohio | | |
| | Rebuild the Pokagon - | | |
| | Corey 69 kV line as a | | |
| | double circuit 138 kV line | | |
| b2257 | with one side at 69 kV and | | AEP (100%) |
| | the other side as an express | | , , |
| | circuit between Pokagon | | |
| | and Corey stations | | |
| | Rebuild 1.41 miles of #2 | | |
| | CU 46 kV line between | | |
| b2258 | Tams Mountain - Slab Fork | | AEP (100%) |
| 02230 | to 138 kV standards. The | | 1111 (10070) |
| | line will be strung with | | |
| | 1033 ACSR | | |
| | Install a new 138/69 kV | | |
| b2259 | transformer at George | | |
| | Washington 138/69 kV | | AEP (100%) |
| | substation to provide | | , , |
| | support to the 69 kV system | | |
| | in the area | | |

| b2286 | Rebuild 4.7 miles of | |
|-------|---------------------------|-------------|
| | Muskingum River - Wolf | |
| | Creek 138 kV line and | AED (1000/) |
| | remove the 138/138 kV | AEP (100%) |
| | transformer at Wolf Creek | |
| | Station | |

| Required 11 | ansmission Emiancements Amuai Rev | venue requirement | Responsible Customer(s) |
|-------------|---|-------------------|-------------------------|
| b2287 | Loop in the Meadow Lake - Olive 345 kV circuit into Reynolds 765/345 kV | | AEP (100%) |
| | station | | |
| | Establish a new 138/12 kV | | |
| | station, transfer and | | |
| b2344.1 | consolidate load from its | | AED (1000/) |
| 02344.1 | Nicholsville and Marcellus | | AEP (100%) |
| | 34.5 kV stations at this new | | |
| | station | | |
| | Tap the Hydramatic – | | |
| | Valley 138 kV circuit (~ | | |
| b2344.2 | structure 415), build a new | | AEP (100%) |
| | 138 kV line (~3.75 miles) to | | |
| | this new station | | |
| | From this station, construct | | |
| b2344.3 | a new 138 kV line (~1.95 | | AEP (100%) |
| 0281118 | miles) to REA's Marcellus | | 1121 (10070) |
| | station | | |
| | From REA's Marcellus | | |
| | station construct new 138 | | |
| b2344.4 | kV line (~2.35 miles) to a | | AEP (100%) |
| | tap point on Valley – | | , , |
| | Hydramatic 138 kV ckt | | |
| | (~structure 434) | | |
| b2344.5 | Retire sections of the 138 | | AED (1000/) |
| | kV line in between structure | | AEP (100%) |
| | 415 and 434 (~ 2.65 miles) | | |
| b2344.6 | Retire AEP's Marcellus 34.5/12 kV and Nicholsville | | |
| | 34.5/12 kV and Nicholsville 34.5/12 kV stations and also | | AED (1000/) |
| | | | AEP (100%) |
| | the Marcellus – Valley 34.5 kV line | | |
| | K V IIIIE | | |

| | Construct a new 69 kV line | |
|---------|-----------------------------|------------|
| b2345.1 | from Hartford to Keeler (~8 | AEP (100%) |
| | miles) | |

| 1 | D -111.1.41 24.5.1-37.11 | • | • |
|---------|-------------------------------|---|---------------|
| | Rebuild the 34.5 kV lines | | |
| b2345.2 | between Keeler - Sister | | AEP (100%) |
| | Lakes and Glenwood tap | | ` , |
| | switch to 69 kV (~12 miles) | | |
| | Implement in - out at Keeler | | A 777 (40024) |
| b2345.3 | and Sister Lakes 34.5 kV | | AEP (100%) |
| | stations | | |
| | Retire Glenwood tap switch | | |
| | and construct a new | | |
| b2345.4 | Rothadew station. These | | AEP (100%) |
| | new lines will continue to | | |
| | operate at 34.5 kV | | |
| | Perform a sag study for | | |
| | Howard - North Bellville - | | |
| b2346 | Millwood 138 kV line | | AEP (100%) |
| | including terminal | | |
| | equipment upgrades | | |
| | Replace the North Delphos | | |
| | 600A switch. Rebuild | | |
| | approximately 18.7 miles of | | |
| b2347 | 138 kV line North Delphos | | AEP (100%) |
| | - S073. Reconductor the | | |
| | line and replace the existing | | |
| | tower structures | | |
| | Construct a new 138 kV | | |
| | line from Richlands Station | | |
| b2348 | to intersect with the Hales | | AEP (100%) |
| | Branch - Grassy Creek 138 | | ` , |
| | kV circuit | | |
| | Change the existing CT | | |
| b2374 | ratios of the existing | | AED (1000() |
| | equipment along Bearskin - | | AEP (100%) |
| | Smith Mountain 138kV | | |
| | | | 1 |

| | circuit | |
|-------|--|------------|
| b2375 | Change the existing CT ratios of the existing equipment along East Danville-Banister 138kV circuit | AEP (100%) |

| 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%) |

| 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 Rebuild the 3/0 ACSR | AEP (100%) |
| b2411 | 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 | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) |

| | DFAX Allocation: |
|--|------------------|
| | AEP (100%) |

| Required 11 | ansimission Emiancements Amida | ii Kevenue Kequirement | Responsible Customer(s) |
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| 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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|------------|---|----------------------|--------------------------|
| 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 80kA breaker | | AEP (100%) |
| b2531 | Replace the Sporn 138 kV breaker 'D' with 80kA breaker | | AEP (100%) |
| b2532 | Replace the Sporn 138 kV breaker 'O1' with 80kA breaker | | AEP (100%) |
| b2533 | Replace the Sporn 138 kV breaker 'P2' with 80kA breaker | | AEP (100%) |
| b2534 | Replace the Sporn 138 kV breaker 'U' with 80kA breaker | | AEP (100%) |

| | Replace the Sporn 138 kV | |
|-------|--------------------------|------------|
| b2535 | breaker 'O' with 80 kA | AEP (100%) |
| | breaker | |

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|--------------|---|------------------------|--------------------------|
| 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%) |

| 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 | AEP (100%) |
|-------|---|------------|
| | kV XF at New Carlisle | |
| | station in Indiana | |

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| | Rebuild approximately 1 | | |
| | mi. section of Dragoon- | | |
| | Virgil Street 34.5 kV line | | |
| | between Dragoon and | | |
| b2597 | Dodge Tap switch and | | AEP (100%) |
| | replace Dodge switch | | |
| | MOAB to increase thermal | | |
| | capability of Dragoon- | | |
| | Dodge Tap branch | | |
| | Rebuild approximately 1 | | |
| | mile section of the Kline- | | |
| | Virgil Street 34.5 kV line | | |
| b2598 | between Kline and Virgil | | AEP (100%) |
| 02370 | Street tap. Replace MOAB | | ALI (10070) |
| | switches at Beiger, risers at | | |
| | Kline, switches and bus at | | |
| | Virgil Street. | | |
| | Rebuild approximately 0.1 | | |
| b2599 | miles of 69 kV line between | | AEP (100%) |
| | Albion and Albion tap | | |
| b2600 | Rebuild Fremont – Pound | | AEP (100%) |
| 02000 | line as 138 kV | | ALI (10070) |
| b2601 | Fremont Station | | AEP (100%) |
| 02001 | Improvements | | ALI (100%) |
| | Replace MOAB towards | | |
| b2601.1 | Beaver Creek with 138 kV | | AEP (100%) |
| | breaker | | |
| b2601.2 | Replace MOAB towards | | |
| | Clinch River with 138 kV | | AEP (100%) |
| | breaker | | |
| b2601.3 | Replace 138 kV Breaker A | | AED (100%) |
| 02001.3 | with new bus-tie breaker | | AEP (100%) |
| | | · | |

| | Re-use Breaker A as high | |
|---------|---------------------------|------------|
| b2601.4 | side protection on | AEP (100%) |
| | transformer #1 | |
| | Install two (2) circuit | |
| b2601.5 | switchers on high side of | AEP (100%) |
| | transformers # 2 and 3 at | AEF (100%) |
| | Fremont Station | |

| 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 | AEP (100%) |
|-------|------------------------|------------|
| | Addition | |

| | Rebuild and reconductor Kammer – George | 1 | • |
|---------|---|---|------------|
| b2605 | Washington 69 kV circuit and George Washington – Moundsville ckt #1, designed for 138kV. | | AEP (100%) |
| | Upgrade limiting equipment at remote ends and at tap stations | | |
| 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 | | AEP (100%) |

| a slip over CT with higher | |
|----------------------------|--|
| thermal rating in order to | |
| remove 1193 MVA limit on | |
| facility (Miami Fort- | |
| Tanners Creek 345 kV line) | |

| | distinssion Emidicements 7 min | (a) |
|-------|--|------------|
| b2643 | Replace the Darrah 138 kV breaker 'L' with 40kA 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 (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%) |

| required 11 | ansimission Emancements Ami | uai Kevenue Requirement | Responsible Customer(s) |
|-------------|--|---|------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | | | DEOK (3.23%) / DL (1.73%) / |
| | Install a +/ 450 MVAD | JCPL (3.84%) / ME (1.93%) NEPTUNE* (0.45%) / OVE | DPL (2.65%) / Dominion |
| b2687.1 | Install a +/- 450 MVAR SVC at Jacksons Ferry 765 kV substation | | (13.03%) / EKPC (1.77%) / |
| 02087.1 | | | JCPL (3.84%) / ME (1.93%) / |
| | | | NEPTUNE* (0.45%) / OVEC |
| | | | (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required 11 | ansimission Emancements Amin | iai Kevenue Kequitement | Responsible Cusiomer(s) |
|-------------|------------------------------|-------------------------|------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | Install a 300 MVAR shunt | | DEOK (3.23%) / DL (1.73%) / |
| | line reactor on the | | DPL (2.65%) / Dominion |
| b2687.2 | Broadford end of the | | (13.03%) / EKPC (1.77%) / |
| 02007.2 | Broadford – Jacksons Ferry | | JCPL (3.84%) / ME (1.93%) / |
| | 765 kV line | | NEPTUNE* (0.45%) / OVEC |
| | 703 K V IIIIC | | (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| | Mitigate violations | | |
| | identified by sag study to | | |
| | operate Fieldale-Thornton- | | |
| b2697.1 | Franklin 138 kV overhead | | AEP (100%) |
| 02077.1 | line conductor at its max. | | (10070) |
| | operating temperature. 6 | | |
| | potential line crossings to | | |
| | be addressed. | | |
| b2697.2 | Replace terminal equipment | | |
| | at AEP's Danville and East | | |
| | Danville substations to | | AEP (100%) |
| | improve thermal capacity of | | (10070) |
| | Danville – East Danville | | |
| | 138 kV circuit | | |

^{*}Neptune Regional Transmission System, LLC

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|---------------|---|-----------------------|--------------------------|
| 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%) |
| 2701.3 | 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 80kA | | AEP (100%) |

| breakers | |
|----------|--|
| | |

| | | |
|---------|--|------------|
| 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 | AEP (100%) |

| initial configuration will | |
|-----------------------------|--|
| constitute a 3 breaker ring | |
| bus | |

| 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 | AEP (100%) |
|---------|--|------------|
| b2753.6 | metering on both circuits exiting Holloway 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 | AEP (100%) |

| I | Bottom 138 kV. One circuit | |
|----|--------------------------------|--|
| , | will cut into Dilles Bottom | |
| 1. | 38 kV initially and the other | |
| W | vill go past with future plans | |
| | to cut in | |

| rtequired 11 | ansimission Emancements Timua | receiled requirement | responsible destorrer(s) |
|--------------|---|----------------------|--------------------------|
| b2760 | Perform a Sag Study of the Saltville – Tazewell 138 kV line to increase the thermal rating of the line | | AEP (100%) |
| b2761.1 | Replace the Hazard 161/138 kV transformer | | 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 – Wooton 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 (100%) |
| b2777 | Reconductor the entire Dequine – Eugene 345 kV circuit #1 | | EKPC (100%) |
| b2779.1 | Construct a new 138 kV station, Campbell Road, tapping into the Grabill – South Hicksville138 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 | | AEP (100%) |

| extend 138 kV from | |
|-----------------------|--|
| Campbell Road station | |

| | | 1 |
|---------|--|------------|
| 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%) |
| 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%) |
| 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- | AEP (100%) |

| Line from the 69 kV through- | |
|------------------------------|--|
| path | |

| | | |
|---------|--|------------|
| b2789 | Rebuild the Brues - Glendale Heights 69 kV line section (5 miles) with 795 ACSR (128 MVA rating, 43% loading) | AEP (100%) |
| 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%) |

| | Replace the Elliott | |
|-------|------------------------------|-------------|
| | transformer with a 130 MVA | |
| | unit, reconductor 0.42 miles | |
| | of the Elliott – Ohio | |
| b2792 | University 69 kV line with | AED (1000/) |
| | 556 ACSR to match the rest | AEP (100%) |
| | of the line conductor (102 | |
| | MVA rating, 73% loading) | |
| | and rebuild 4 miles of the | |
| | Clark Street – Strouds R | |

| | Energize the spare Fremont Center 138/69 kV 130 MVA | |
|-------|--|------------|
| b2793 | transformer #3. Reduces | AEP (100%) |
| | overloaded facilities to 46% | |
| | loading | |
| | Construct new 138/69/34 kV | |
| | station and 1-34 kV circuit | |
| | (designed for 69 kV) from new | |
| b2794 | station to Decliff station, | AEP (100%) |
| | approximately 4 miles, with | |
| | 556 ACSR conductor (51 | |
| | MVA rating) | |
| | Install a 34.5 kV 4.8 MVAR | |
| b2795 | capacitor bank at Killbuck | AEP (100%) |
| | 34.5 kV station | |
| | Rebuild the Malvern - Oneida | |
| b2796 | Switch 69 kV line section with | AEP (100%) |
| 02190 | 795 ACSR (1.8 miles, 125 | ALI (100%) |
| | MVA rating, 55% loading) | |
| | Rebuild the Ohio Central - | |
| | Conesville 69 kV line section | |
| | (11.8 miles) with 795 ACSR | |
| b2797 | conductor (128 MVA rating, | AEP (100%) |
| | 57% loading). Replace the 50 | |
| | MVA Ohio Central 138/69 kV | |
| | XFMR with a 90 MVA unit | |
| | Install a 14.4 MVAR capacitor | |
| | bank at West Hicksville | |
| b2798 | station. Replace ground | AEP (100%) |
| 02/98 | switch/MOAB at West | AEF (100%) |
| | Hicksville with a circuit | |
| | switcher | |
| | | |

| | Rebuild Valley - Almena, | |
|-------|--------------------------------|-------------|
| b2799 | Almena - Hartford, Riverside - | |
| | South Haven 69 kV lines. | AED (1000/) |
| | New line exit at Valley | AEP (100%) |
| | Station. New transformers at | |
| | Almena and Hartford | |

| 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 | AEP (100%) |

| | establish a new 138 kV line | |
|---------|--------------------------------|------------|
| | exit towards Valley | |
| | At Hartford station, install a | |
| | second 90 MVA 138/69 kV | |
| b2799.6 | transformer with a circuit | AEP (100%) |
| | switcher and 3000 A 40 kA | |
| | low side breaker | |

| required Transmission Emiliancements | | THIRda Ite vende Itequires | nent responsible editioner(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%) |

| 1.000.4.0 | Install 300 MVAR reactor at | 177 (100) |
|-----------|--|--|
| b2826.2 | West Bellaire 345 kV | AEP (100%) |
| | substation | DFAX Allocation: |
| b2831.1 | Upgrade the Tanner Creek – Miami Fort 345 kV circuit | DFAX Anocation: Dayton (61.71%) / DEOK |
| 02031.1 | (AEP portion) | (37.68%) / OVEC (0.61%) |
| | Six wire the Kyger Creek – | (37.00%)/ OVEC (0.01%) |
| | Sporn 345 kV circuits #1 and | |
| b2832 | #2 and convert them to one | AEP (100%) |
| | circuit | |
| | Reconductor the Maddox | |
| 1.000 | Creek – East Lima 345 kV | DFAX Allocation: |
| b2833 | circuit with 2-954 ACSS | AEP (80.83%) / Dayton (18.73%) |
| | Cardinal conductor | / OVEC (0.44%) |
| | Reconductor and string open | |
| b2834 | position and sixwire 6.2 miles | AED (1000/) |
| 02834 | of the Chemical – Capitol Hill | AEP (100%) |
| | 138 kV circuit | |
| | Replace the South Canton 138 | |
| b2872 | kV breaker 'K2' with a 80 kA | AEP (100%) |
| | breaker | |
| | Replace the South Canton 138 | |
| b2873 | kV breaker "M" with a 80 kA | AEP (100%) |
| | breaker | |
| | Replace the South Canton 138 | . == |
| b2874 | kV breaker "M2" with a 80 | AEP (100%) |
| | kA breaker | |
| b2878 | Upgrade the Clifty Creek | AEP (100%) |
| | 345 kV risers | 122 (10070) |
| | Rebuild approximately 4.77 | |
| b2880 | miles of the Cannonsburg – | AEP (100%) |
| | South Neal 69 kV line section | |
| | utilizing 795 ACSR | |

| | 1 | |
|---|------------------------------|--|
| | conductor (90 MVA rating) | |
| | conductor (50 WI VII rating) | |
| | | |
| 1 | | |

| b2881 | Rebuild ~1.7 miles of the Dunn Hollow – London 46 kV line section utilizing 795 26/7 ACSR conductor (58 | AEP (100%) |
|---------|--|------------|
| | MVA rating, non-conductor limited) | |
| 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 | AEP (100%) |

| | open preemptively for the loss of the existing Nagel | |
|-------|---|------------|
| b2885 | New delivery point for City of Jackson | AEP (100%) |

| | | 1 |
|---------|---|---|
| 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%) |
| | Install a new 138/69 kV | |
| | station (Rhodes) to serve as a | |
| b2885.2 | third source to the area to help | AEP (100%) |
| 02003.2 | relieve overloads caused by | ALI (100%) |
| | the customer load increase | |
| | Replace Coalton Switch with | |
| b2885.3 | a new three breaker ring bus | AEP (100%) |
| 02000.0 | (Heppner) | (100,0) |
| | Install 90 MVA 138/69 kV | |
| | transformer, new transformer | |
| 1.2006 | high and low side 3000 A 40 | A ED (1000() |
| b2886 | kA CBs, and a 138 kV 40 kA | AEP (100%) |
| | bus tie breaker at West End | |
| | Fostoria | |
| | Add 2-138 kV CB's and | |
| | relocate 2-138 kV circuit exits | |
| b2887 | to different bays at Morse | AEP (100%) |
| 02007 | Road. Eliminate 3 terminal | 71L1 (10070) |
| | line by terminating Genoa - | |
| | Morse circuit at Morse Road | |
| 1.2000 | Retire Poston substation. | A FIR (1000) |
| b2888 | Install new Lemaster | AEP (100%) |
| | substation | |
| b2888.1 | Remove and retire the Poston | AEP (100%) |
| | 138 kV station | ` ' |
| b2888.2 | Install a new greenfield | AEP (100%) |
| | station, Lemaster 138 kV | ` ′ |

| Station, in the clear | |
|-----------------------|--|
| | |
| | |

| 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 | AEP (100%) |

| Early 138 kV line section. | |
|----------------------------|--|
| Construct double circuit | |
| in/out (~2 miles) to newly | |
| established 138 kV bus, | |
| utilizing 795 26/7 ACSR | |
| conductor | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Rebuild 23.55 miles of the East Cambridge – Smyrna b2890.1 34.5 kV circuit with 795 AEP (100%) ACSR conductor (128 MVA rating) and convert to 69 kV East Cambridge: Install a 2000 A 69 kV 40 kA circuit breaker for the East b2890.2 AEP (100%) Cambridge – Smyrna 69 kV circuit Old Washington: Install 69 kV 2000 A two way phase b2890.3 AEP (100%) over phase switch Install 69 kV 2000 A two way b2890.4 AEP (100%) phase over phase switch Rebuild the Midland Switch to East Findlay 34.5 kV line b2891 (3.31 miles) with 795 ACSR AEP (100%) (63 MVA rating) to match other conductor in the area 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 b2892 AEP (100%) the Ripley station with a new 138/69 kV 130 MVA transformer and move the distribution load to 138 kV service Rebuild approximately 6.7 b2936.1 AEP (100%) 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 | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Pigeon River Station: Replace existing MOAB Sw. 'W' with a new 69 kV 3000 A 40 kA b2936.2 breaker, and upgrade existing AEP (100%) relays towards HMD station. Replace CB H with a 3000 A 40 kA breaker Replace the existing 636 ACSR 138 kV bus at b2937 AEP (100%) Fletchers Ridge with a larger 954 ACSR conductor Perform a sag mitigations on the Broadford – Wolf Hills b2938 138 kV circuit to allow the AEP (100%) line to operate to a higher maximum temperature Cut George Washington -Tidd 138 kV circuit into Sand b2958.1 AEP (100%) Hill and reconfigure Brues & Warton Hill line entrances Add 2 138 kV 3000 A 40 kA breakers, disconnect switches, b2958.2 AEP (100%) and update relaying at Sand Hill station Upgrade existing 345 kV terminal equipment at Tanner b2968 AEP (100%) Creek station Replace terminal equipment b2969 on Maddox Creek - East AEP (100%) Lima 345 kV circuit Upgrade terminal equipment b2976 AEP (100%) at Tanners Creek 345 kV

| station. Upgrade 345 kV bus | |
|-----------------------------|--|
| and risers at Tanners Creek | |
| for the Dearborn circuit | |

| | | 1 | |
|---------|--|---|--------------|
| | Replace the Twin Branch 345 kV breaker "JM" with 63 kA | | |
| | breaker and associated | | |
| b2988 | substation works including | | AEP (100%) |
| | switches, bus leads, control | | |
| | cable and new DICM | | |
| | Rebuild the Torrey – South | | |
| | Gambrinus Switch – | | |
| | Gambrinus Road 69 kV line | | |
| b2993 | section (1.3 miles) with 1033 | | AEP (100%) |
| | ACSR 'Curlew' conductor | | |
| | and steel poles | | |
| | Replace South Canton 138 kV | | |
| b3000 | breaker 'N' with an 80kA | | AEP (100%) |
| | breaker | | ` , |
| | Replace South Canton 138 kV | | |
| b3001 | breaker 'N1' with an 80kA | | AEP (100%) |
| | breaker | | |
| | Replace South Canton 138 kV | | |
| b3002 | breaker 'N2' with an 80kA | | AEP (100%) |
| | breaker | | |
| | Rebuild 15.6 miles of | | |
| b3036 | Haviland - North Delphos 138 | | AEP (100%) |
| | kV line | | |
| b3037 | Upgrades at the Natrium | | AEP (100%) |
| 03037 | substation | | 1121 (10070) |
| b3038 | Reconductor the Capitol Hill | | AEP (100%) |
| 03030 | – Coco 138 kV line section | | 1121 (10070) |
| b3039 | Line swaps at Muskingum | | AEP (100%) |
| 03037 | 138 kV station | | 1121 (10070) |
| b3040.1 | Rebuild Ravenswood – | | AEP (100%) |
| 00010.1 | Racine tap 69 kV line section | | 1111 (10070) |

| | (~15 miles) to 69 kV | |
|-----|----------------------------|--|
| sta | ndards, utilizing 795 26/7 | |
| | ACSR conductor | |

| Required Tra | ansmission Enhancements A | 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- | | AEP (100%) |

| 11 (0.5 mile), utilizing 795 | |
|------------------------------|--|
| 26/7 ACSR conductor | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Rebuild West Melrose – Whirlpool 34 kV line Str's b3086.3 AEP (100%) 55–80 (1 mile), utilizing 795 26/7 ACSR conductor North Findlay station: Install a 138 kV 3000A 63kA line breaker and low side 34.5 kV b3086.4 AEP (100%) 2000A 40kA breaker, high side 138 kV circuit switcher on T1 Ebersole station: Install second 90 MVA 138/69/34 b3086.5 kV transformer. Install two AEP (100%) low side (69 kV) 2000A 40kA breakers for T1 and T2 Construct a new greenfield station to the west (approx. 1.5 miles) of the existing Fords Branch Station in the new Kentucky Enterprise Industrial Park. This station will consist of six 3000A b3087.1 40kA 138 kV breakers laid AEP (100%) out in a ring arrangement, two 30 MVA 138/34.5 kV transformers, and two 30 MVA 138/12 kV transformers. The existing Fords Branch Station will be retired Construct approximately 5 b3087.2 AEP (100%) miles of new double circuit

| 138 kV line in order to loop | |
|------------------------------|--|
| the new Kewanee station into | |
| the existing Beaver Creek – | |
| Cedar Creek 138 kV circuit | |

| Ttoquirea 11 | | Timaai revenae regan | rement Responsible Customer(s) |
|--------------|---------------------------------|----------------------|--------------------------------|
| 1 2007 2 | Remote end work will be | | AED (1000/) |
| b3087.3 | required at Cedar Creek | | AEP (100%) |
| | Station | | |
| | Install 28.8 MVar switching | | 177 (100) |
| b3087.4 | shunt at the new Fords | | AEP (100%) |
| | Branch substation | | |
| | Rebuild Lakin – Racine Tap | | |
| b3095 | 69 kV line section (9.2 miles) | | AEP (100%) |
| 03073 | to 69 kV standards, utilizing | | 1121 (10070) |
| | 795 26/7 ACSR conductor | | |
| | Install a 138 kV 3000A 40 kA | | |
| | circuit switcher on the high | | |
| b3099 | side of the existing 138/34.5 | | AEP (100%) |
| | kV transformer No.5 at | | |
| | Holston station | | |
| | Replace the 138 kV MOAB | | |
| | switcher "YY" with a new | | |
| b3100 | 138 kV circuit switcher on the | | AEP (100%) |
| | high side of Chemical | | |
| | transformer No.6 | | |
| | Rebuild the 1/0 Cu. conductor | | |
| | sections (approx. 1.5 miles) of | | |
| | the Fort Robinson – Moccasin | | |
| | Gap 69 kV line section | | |
| b3101 | (approx. 5 miles) utilizing | | AEP (100%) |
| 03101 | 556 ACSR conductor and | | ALF (100%) |
| | upgrade existing relay trip | | |
| | limit (WN/WE: 63 MVA, line | | |
| | limited by remaining | | |
| | conductor sections) | | |
| h2102 | Replace existing 50 MVA | | AED (1000/) |
| b3102 | 138/69 kV transformers #1 | | AEP (100%) |
| - | | | |

| and #2 (both 1957 vintage) at | |
|-------------------------------|--|
| Fremont station with new 130 | |
| MVA 138/69 kV transformers | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install a 138/69 kV transformer at Royerton station. Install a 69 kV bus with one 69 kV breaker toward Bosman station. b3103.1 AEP (100%) Rebuild the 138 kV portion into a ring bus configuration built for future breaker and a half with four 138 kV breakers Rebuild the Bosman/Strawboard station in the clear across the road to b3103.2 AEP (100%) move it out of the flood plain and bring it up to 69 kV standards Retire 138 kV breaker L at Delaware station and reb3103.3 AEP (100%) purpose 138 kV breaker M for the Jay line Retire all 34.5 kV equipment at Hartford City station. Reb3103.4 AEP (100%) purpose breaker M for the Bosman line 69 kV exit Rebuild the 138 kV portion of Jay station as a 6 breaker, breaker and a half station reusing the existing breakers b3103.5 AEP (100%) "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 | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Rebuild the 69 kV Hartford City – Armstrong Cork line b3103.6 but instead of terminating it AEP (100%) into Armstrong Cork, terminate it into Jay station Build a new 69 kV line from b3103.7 AEP (100%) Armstrong Cork – Jay station Rebuild the 34.5 kV Delaware – Bosman line as the 69 kV Royerton – b3103.8 AEP (100%) Strawboard line. Retire the line section from Royerton to Delaware stations Perform a sag study on the Polaris – Westerville 138 kV line (approx. 3.6 miles) to b3104 AEP (100%) increase the summer emergency rating to 310 **MVA** Rebuild the Delaware – Hyatt 138 kV line (approx. 4.3 miles) along with replacing b3105 AEP (100%) conductors at both Hyatt and Delaware substations Perform a sag study (6.8 miles of line) to increase the SE rating to 310 MVA. Note that results from the sag study b3106 AEP (100%) could cover a wide range of outcomes, from no work required to a complete rebuild

| | Rebuild 5.2 miles Bethel – | |
|-------|----------------------------|------------|
| b3109 | Sawmill 138 kV line | AEP (100%) |
| | including ADSS | |

Company, Ohio Power Company and Wheeling Power Company) (cont.)

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Construct a single circuit 138 kV line (approx. 3.5 miles) from Amlin to Dublin using 1033 ACSR Curlew (296 b3112 MVA SN), convert Dublin AEP (100%) station into a ring configuration, and reterminating the Britton UG cable to Dublin station Replace existing Mullens 138/46 kV 30 MVA transformer No.4 and associated protective b3116 AEP (100%) equipment with a new 138/46 kV 90 MVA transformer and associated protective equipment **Expand existing Chadwick** station and install a second 138/69 kV transformer at a new 138 kV bus tied into the Bellefonte – Grangston 138 kV circuit. The 69 kV bus b3118.1 AEP (100%) will be reconfigured into a ring bus arrangement to tie the new transformer into the existing 69 kV via installation of four 3000A 63 kA 69 kV circuit breakers Perform 138 kV remote end b3118.2 AEP (100%) work at Grangston station

| b3118.3 | Perform 138 kV remote end work at Bellefonte station | AEP (100%) |
|---------|--|------------|
| | Relocate the Chadwick – | |
| b3118.4 | Leach 69 kV circuit within | AEP (100%) |
| | Chadwick station | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Terminate the Bellefonte – b3118.5 Grangston 138 kV circuit to AEP (100%) the Chadwick 138 kV bus Chadwick – Tri-State #2 138 kV circuit will be reconfigured within the b3118.6 station to terminate into the AEP (100%) newly established 138 kV bus #2 at Chadwick due to construability aspects Reconductor Chadwick -Leach and Chadwick — England Hill 69 kV lines with 795 ACSS conductor. b3118.7 Perform a LiDAR survey and AEP (100%) a sag study to confirm that the reconductored circuits would maintain acceptable clearances Replace the 20 kA 69 kV circuit breaker 'F' at South Neal station with a new b3118.8 AEP (100%) 3000A 40 kA 69 kV circuit breaker. Replace line risers towards Leach station Rebuild 336 ACSR portion of Leach – Miller S.S 69 kV line b3118.9 AEP (100%) section (approx. 0.3 mile) with 795 ACSS conductor Replace 69 kV line risers (towards Chadwick) at Leach b3118.10 AEP (100%) station

| | Rebuild the Jay – Pennville | |
|---------|--------------------------------|-------------|
| | 138 kV line as double circuit | |
| h2110.1 | 138/69 kV. Build a new 9.8 | AED (1000/) |
| b3119.1 | mile single circuit 69 kV line | AEP (100%) |
| | from near Pennville station to | |
| | North Portland station | |

| | Install three (3) 69 kV | |
|---------|--------------------------------|--------------|
| | breakers to create the "U" | |
| b3119.2 | string and add a low side | AEP (100%) |
| | breaker on the Jay | |
| | transformer 2 | |
| | Install two (2) 69 kV breakers | |
| b3119.3 | at North Portland station to | AEP (100%) |
| 03119.3 | complete the ring and allow | AEF (100%) |
| | for the new line | |
| | At Conesville 138 kV station: | |
| | Remove line leads to | |
| | generating units, transfer | |
| b3129 | plant AC service to existing | AEP (100%) |
| 03127 | station service feeds in | ALI (100%) |
| | Conesville 345/138 kV yard, | |
| | and separate and reconfigure | |
| | protection schemes | |
| | At East Lima and Haviland | |
| | 138 kV stations, replace line | |
| b3131 | relays and wavetrap on the | AEP (100%) |
| | East Lima – Haviland 138 kV | |
| | facility | |
| | Rebuild 3.11 miles of the | |
| b3132 | LaPorte Junction – New | AEP (100%) |
| 03132 | Buffalo 69 kV line with 795 | 71L1 (10070) |
| | ACSR | |

| b3139 | Rebuild the Garden Creek – Whetstone 69 kV line | AEP (100%) |
|-------|---|-------------|
| 03137 | (approx. 4 miles) | 71E1 (100%) |
| | Rebuild the Whetstone – | |
| b3140 | Knox Creek 69 kV line | AEP (100%) |
| | (approx. 3.1 miles) | |
| | Rebuild the Knox Creek – | |
| b3141 | Coal Creek 69 kV line | AEP (100%) |
| | (approx. 2.9 miles) | |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Rebuild the 46 kV Bradley – Scarbro line to 96 kV standards using 795 ACSR to achieve a minimum rate of b3148.1 120 MVA. Rebuild the new AEP (100%) line adjacent to the existing one leaving the old line in service until the work is completed Bradley remote end station work, replace 46 kV bus, b3148.2 AEP (100%) install new 12 MVAR capacitor bank Replace the existing switch at Sun substation with a 2-way b3148.3 AEP (100%) SCADA-controlled motoroperated air-breaker switch Remote end work and associated equipment at b3148.4 AEP (100%) Scarbro station Retire Mt. Hope station and b3148.5 transfer load to existing Sun AEP (100%) station Rebuild the 2.3 mile Decatur b3149 - South Decatur 69 kV line AEP (100%) using 556 ACSR Rebuild Ferguson 69/12 kV station in the clear as the 138/12 kV Bear station and b3150 AEP (100%) 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 | |

| Required 11 | ansmission Ennancements | Annuai Revenue Require | ement 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%) |

| 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 | AEP (100%) |

| | Head to the 138 kV network | |
|---------|---|------------|
| 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%) |

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

| Required Tr | ansmission Enhancements | Annual Revenue Requiren | nent Responsible Customer(s) |
|-------------|-------------------------------|-------------------------|------------------------------|
| | Build new 138/69 kV drop | | |
| | down station to feed | | |
| | Lakehead with a 138 kV | | |
| b3160.4 | breaker, 138 kV switcher, | | AEP (100%) |
| | 138/69 kV transformer and a | | |
| | 138 kV Motor-Operated Air | | |
| | Break | | |
| | Rebuild the approx. 1.2 miles | | |
| | Buchanan South 69 kV | | |
| b3160.5 | Radial Tap using 795 ACSR | | AEP (100%) |
| | (Aluminum Conductor Steel | | |
| | Reinforced) | | |
| | Rebuild the approx.8.4 miles | | |
| | 69 kV Pletcher – Buchanan | | |
| | Hydro line as the approx. 9 | | |
| b3160.6 | miles Pletcher – Buchanan | | AEP (100%) |
| | South 69 kV line using 795 | | |
| | ACSR (Aluminum Conductor | | |
| | Steel Reinforced) | | |
| | Install a PoP (Point-of- | | |
| | Presence) switch at Buchanan | | |
| b3160.7 | South station with 2 line | | AEP (100%) |
| | MOABs (Motor-Operated Air | | |
| 1 | | | |

Break)

| Required Tra | ansmission 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%) |
| b3261 | Upgrade circuit breaker "R1" at Tanners Creek 345 kV. Install Transient Recovery | | AEP (100%) |

| Voltage capacitor to increase | |
|-------------------------------|--|
| the rating from 50 kA to 63 | |
| kA | |

Company, Ohio Power Company and Wheeling Power Company) (cont.)

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) At West New Philadelphia station, add a high side 138 kV breaker on the 138/69 kV b3269 Transformer #2 along with a 138 kV breaker on the line towards Newcomerstown AEP (100%) 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 b3270 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%) Replace Dragoon 34.5 kV breakers "B", "C", and "D" b3270.1 with 40 kA breakers AEP (100%) Install a 138 kV circuit breaker at Fremont station on the line towards Fremont b3271 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%) |

ATTACHMENT L List of Transmission Owners

Allegheny Electric Cooperative, Inc.

American Transmission Systems, Incorporated

Atlantic City Electric Company

Baltimore Gas and Electric Company

Delmarva Power & Light Company

Duke Energy Ohio, Inc.

Duke Energy Kentucky, Inc.

East Kentucky Power Cooperative, Inc.

Essential Power Rock Springs, LLC

Hudson Transmission Partners, LLC

ITC Interconnection LLC

Jersey Central Power & Light Company

Mid-Atlantic Interstate Transmission, LLC

Neptune Regional Transmission System, LLC

Old Dominion Electric Cooperative

PECO Energy Company

Pennsylvania Power & Light Company

Potomac Electric Power Company

Public Service Electric and Gas Company

Rockland Electric Company

Trans-Allegheny Interstate Line Company

Transource West Virginia, LLC

UGI Utilities, Inc.

Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power

Commonwealth Edison Company and Commonwealth Edison Company of Indiana, Inc.

The Dayton Power and Light Company

AEP East Operating Companies American Electric Power Service Corporation on behalf of its affiliate companies: AEP Appalachian Transmission Company, Inc.; AEP Indiana Michigan Transmission Company, Inc.; AEP Kentucky Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; (Appalachian Power Company; Columbus Southern Power Company, Indiana Michigan Power Company; Kentucky Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company)

Duquesne Light Company

Virginia Electric and Power Company

Linden VFT, LLC

City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power

City of Hamilton, OH

Southern Maryland Electric Cooperative, Inc.

Ohio Valley Electric Cooperative

AMP Transmission, LLC

Silver Run Electric, LLC

NextEra Energy Transmission MidAtlantic Indiana, Inc. Wabash Valley Power Association, Inc.

Attachment B

Revisions to the PJM Open Access Transmission Tariff

(Clean Format)

SCHEDULE 12 – APPENDIX

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

| Install a 765/138 kV transformer at Amos Replace entrance conductors, wave traps, and risers at the Tidd 345 kV station on the Tidd – Canton b0324 Central 345 kV circuit Replace Cook 345 kV breaker M2 Replace Cook 345 kV breaker M2 Replace Cook 345 kV breaker N2 AEP (100%) Load-Ratio Share Alloge | |
|--|-------------|
| Replace entrance conductors, wave traps, and risers at the Tidd 345 kV station on the Tidd – Canton b0324 Central 345 kV circuit AEP (100%) Replace Cook 345 kV breaker M2 AEP (100%) Replace Cook 345 kV breaker M2 AEP (100%) | |
| conductors, wave traps, and risers at the Tidd 345 kV station on the Tidd – Canton b0324 Central 345 kV circuit AEP (100%) Replace Cook 345 kV breaker M2 AEP (100%) Replace Cook 345 kV breaker M2 AEP (100%) | (1.00%) |
| risers at the Tidd 345 kV station on the Tidd – Canton b0324 | |
| b0324 Station on the Tidd – Canton b0324 Central 345 kV circuit AEP (100%) b0447 Replace Cook 345 kV AEP (100%) b0448 Replace Cook 345 kV AEP (100%) b0448 AEP (100%) | |
| b0324 Central 345 kV circuit AEP (100%) b0447 Replace Cook 345 kV breaker M2 AEP (100%) b0448 Replace Cook 345 kV breaker N2 AEP (100%) | |
| b0447 Replace Cook 345 kV breaker M2 AEP (100%) b0448 Replace Cook 345 kV breaker N2 AEP (100%) | |
| b0447 breaker M2 AEP (100%) b0448 Replace Cook 345 kV breaker N2 AEP (100%) | |
| breaker M2 AEP (100%) Replace Cook 345 kV breaker N2 AEP (100%) | |
| breaker N2 AEP (100%) | |
| breaker N2 AEP (100%) | |
| Load-Ratio Share Allo | |
| Loau-Natio Share And | cation: |
| AEC (1.71%) / AEP (14 | .04%)/ |
| APS (5.61%) / ATSI (8. | 10%)/ |
| BGE (4.36%) / ComEd (1 | 3.14%)/ |
| Dayton (2.15%) / DEOK (| 3.23%)/ |
| DL (1.73%) / DPL (2.6 | 5%)/ |
| Dominion (13.03%) / E | EKPC |
| (1.77%) / JCPL (3.84%) |) / ME |
| (1.93%) / NEPTUNE* (0 | .45%)/ |
| Construct an Amos – As specified under OVEC (0.07%) / PECO (3 | 5.29%)/ |
| I the procedures PENELECTIVES PE | EPCO |
| detailed in $(3.87\%)/PPI(4.77\%)$ | PSEG |
| (AEP equipment) Attachment H-19B (5.82%) / RE (0.26%) | %) |
| DFAX Allocation | : |
| AEC (5.01%) / AEP (4.39) | %)/APS |
| (9.26%) / BGE (4.43%) |) / DL |
| (0.02%) / DPL (6.91%) / D | Ominion |
| (10.82%) / JCPL (11.64%) | 6)/ME |
| (2.94%) / NEPTUNE (1. | 12%)/ |
| PECO (14.51%) / PEPCO | (6.11%)/ |
| PPL (6.39%) / PSEG (15 | .86%)/ |
| RE (0.59%) | |

* Neptune Regional Transmission System, LLC

| Required Transmission Enhancements | | Annual Revenue Req | uirement | Responsible Customer(s) | |
|------------------------------------|---------------------------------|--------------------|-----------------------------------|----------------------------|--|
| | | - | Load-Ratio Sh | | |
| | Replace Amos 138 kV breaker 'B' | | AEC (1.71%) / AEP (14.04%) / APS | | |
| | | | (5.61%) / ATSI (8.10%) / BGE | | |
| | | | (4.36%) / ComEd (13.14%) / Dayton | | |
| | | | (2.15% | 6) / DEOK (3.23%) / DL | |
| | | | (1.73%) | / DPL (2.65%) / Dominion | |
| | | | (13.03% | o) / EKPC (1.77%) / JCPL | |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* | |
| | | | (0.45%) | / OVEC (0.07%) / PECO | |
| b0490.2 | | | (5.29% | 6) / PENELEC (1.89%) / | |
| 00490.2 | | | PEPCC | 0 (3.82%) / PPL (4.72%) / | |
| | | | PSEC | G (6.21%) / RE (0.26%) | |
| | | | | DFAX Allocation: | |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS | |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) | |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / | |
| | | | JCPL (| (11.64%) / ME (2.94%) / | |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) | |
| | | | / PEPCO | O (6.11%) / PPL (6.39%) / | |
| | | | PSEG | (15.86%) / RE (0.59%) | |

| Required Transmission Enhancements | | Annual Revenue Requ | uirement | Responsible Customer(s) | |
|------------------------------------|----------------------------------|---------------------|----------------------------------|----------------------------|--|
| | | | Load-Ratio Share | | |
| | Replace Amos 138 kV breaker 'B1' | | AEC (1.71%) / AEP (14.04%) / APS | | |
| | | | (5.61%) / ATSI (8.10%) / BGE | | |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton | |
| | | | (2.15% | %) / DEOK (3.23%) / DL | |
| | | | (1.73%) | / DPL (2.65%) / Dominion | |
| | | | (13.03% | 5) / EKPC (1.77%) / JCPL | |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* | |
| | | | (0.45%) | / OVEC (0.07%) / PECO | |
| b0490.3 | | | (5.29% | 6) / PENELEC (1.89%) / | |
| 00490.3 | | | PEPCC | O (3.82%) / PPL (4.72%) / | |
| | | | PSEC | G (6.21%) / RE (0.26%) | |
| | | |] | DFAX Allocation: | |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS | |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) | |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / | |
| | | | JCPL (| (11.64%) / ME (2.94%) / | |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) | |
| | | | / PEPC0 | O (6.11%) / PPL (6.39%) / | |
| | | | PSEG | (15.86%) / RE (0.59%) | |

| Required Transmission Enhancements | | Annual Revenue Requirement | | Responsible Customer(s) | |
|------------------------------------|---------------------------------|----------------------------|-----------------------------------|----------------------------|--|
| | Replace Amos 138 kV breaker 'C' | Load | | Ratio Share Allocation: | |
| b0490.4 | | | AEC (1.71%) / AEP (14.04%) / APS | | |
| | | | (5.61%) / ATSI (8.10%) / BGE | | |
| | | | (4.36%) / ComEd (13.14%) / Dayton | | |
| | | | (2.15% | 6) / DEOK (3.23%) / DL | |
| | | | (1.73%) / DPL (2.65%) / Dominion | | |
| | | | (13.03% | 6) / EKPC (1.77%) / JCPL | |
| | | | (3.84%)/ | ME (1.93%) / NEPTUNE* | |
| | | | (0.45%) | / OVEC (0.07%) / PECO | |
| | | | (5.29% | %)/PENELEC (1.89%)/ | |
| | | | PEPCC | O (3.82%) / PPL (4.72%) / | |
| | | | PSEC | G (6.21%) / RE (0.26%) | |
| | | |] | DFAX Allocation: | |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS | |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) | |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / | |
| | | | JCPL (| (11.64%) / ME (2.94%) / | |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) | |
| | | | / PEPC0 | O (6.11%) / PPL (6.39%) / | |
| | | | PSEG | (15.86%) / RE (0.59%) | |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) |
|------------|----------------------------------|---------------------|------------|----------------------------|
| | | | Load- | Ratio Share Allocation: |
| | | | AEC (1.7 | (1%) / AEP (14.04%) / APS |
| | | | (5.61% | 6) / ATSI (8.10%) / BGE |
| | | | (4.36%)/ | ComEd (13.14%) / Dayton |
| | | | (2.15% | 6) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% | 6) / EKPC (1.77%) / JCPL |
| | Replace Amos 138 kV breaker 'C1' | | (3.84%)/ | ME (1.93%) / NEPTUNE* |
| | | | (0.45%) | / OVEC (0.07%) / PECO |
| b0490.5 | | | (5.29% | %)/PENELEC (1.89%)/ |
| 00490.3 | | | PEPCC | O (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | |] | DFAX Allocation: |
| | | | AEC (5.0 | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / |
| | | | JCPL (| (11.64%) / ME (2.94%) / |
| | | | NEPTUN. | E (1.12%) / PECO (14.51%) |
| | | | / PEPC0 | O (6.11%) / PPL (6.39%) / |
| | | | PSEG | (15.86%) / RE (0.59%) |

^{*} Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Require | rement Responsible Customer(s) |
|------------|---------------------------------|------------------------|-------------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | | | (1.73%) / DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / JCPL |
| | Replace Amos 138 kV breaker 'D' | | (3.84%) / ME (1.93%) / NEPTUNE* |
| | | | (0.45%) / OVEC (0.07%) / PECO |
| b0490.6 | | | (5.29%) / PENELEC (1.89%) / |
| 00490.0 | | aker 'D' | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEC (5.01%) / AEP (4.39%) / APS |
| | | | (9.26%) / BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.91%) / Dominion (10.82%) / |
| | | | JCPL (11.64%) / ME (2.94%) / |
| | | | NEPTUNE (1.12%) / PECO (14.51%) |
| | | | / PEPCO (6.11%) / PPL (6.39%) / |
| | | | PSEG (15.86%) / RE (0.59%) |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) | | |
|------------|----------------------------------|---------------------|----------|---------------------------|----------------------------|-------------------------|
| | | | Load- | Ratio Share Allocation: | | |
| | | | AEC (1.7 | 71%) / AEP (14.04%) / APS | | |
| | | | (5.61% | %) / ATSI (8.10%) / BGE | | |
| | | | (4.36%) | / ComEd (13.14%) / Dayton | | |
| | | | (2.159) | %) / DEOK (3.23%) / DL | | |
| | | | (1.73%) | / DPL (2.65%) / Dominion | | |
| | | | (13.03% | %) / EKPC (1.77%) / JCPL | | |
| | Replace Amos 138 kV breaker 'D2' | | | | (3.84%) | / ME (1.93%) / NEPTUNE* |
| | | | (0.45%) |) / OVEC (0.07%) / PECO | | |
| b0490.7 | | | (5.29% | %)/PENELEC (1.89%)/ | | |
| 00490.7 | | | PEPCO | O (3.82%) / PPL (4.72%) / | | |
| | | | PSE | G (6.21%) / RE (0.26%) | | |
| | | | | DFAX Allocation: | | |
| | | | AEC (5. | 01%) / AEP (4.39%) / APS | | |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) | | |
| | | | | / DPL (6. | 91%) / Dominion (10.82%) / | |
| | | | JCPL | (11.64%) / ME (2.94%) / | | |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) | | |
| | | | / PEPC | O (6.11%) / PPL (6.39%) / | | |
| | | | PSEC | G (15.86%) / RE (0.59%) | | |

^{*} Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Req | uirement | Responsible Customer(s) |
|------------|------------------------------------|--------------------|------------|----------------------------|
| | | | Load- | Ratio Share Allocation: |
| | | | AEC (1.7 | 71%) / AEP (14.04%) / APS |
| | | | (5.61% | 6) / ATSI (8.10%) / BGE |
| | | | (4.36%) | / ComEd (13.14%) / Dayton |
| | | | (2.15% | %) / DEOK (3.23%) / DL |
| | | | (1.73%) | / DPL (2.65%) / Dominion |
| | | | (13.03% | %) / EKPC (1.77%) / JCPL |
| | Replace Amos 138 kV breaker 'E' | | (3.84%) | / ME (1.93%) / NEPTUNE* |
| | | | (0.45%) |) / OVEC (0.07%) / PECO |
| b0490.8 | | | (5.29% | 6) / PENELEC (1.89%) / |
| 00490.8 | | | PEPCO | O (3.82%) / PPL (4.72%) / |
| | | | PSEC | G (6.21%) / RE (0.26%) |
| | | | | DFAX Allocation: |
| | | | AEC (5. | 01%) / AEP (4.39%) / APS |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) |
| | | | / DPL (6.9 | 91%) / Dominion (10.82%) / |
| | | | JCPL | (11.64%) / ME (2.94%) / |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) |
| | | | / PEPC | O (6.11%) / PPL (6.39%) / |
| | | | PSEC | G (15.86%) / RE (0.59%) |

| Required T | Transmission Enhancements | Annual Revenue Requ | uirement | Responsible Customer(s) | |
|------------|-------------------------------------|---------------------|-----------|----------------------------|---------------------|
| | | | Load- | Ratio Share Allocation: | |
| | | | AEC (1.7 | 71%) / AEP (14.04%) / APS | |
| | | | (5.61% | %) / ATSI (8.10%) / BGE | |
| | | | (4.36%) | / ComEd (13.14%) / Dayton | |
| | | | (2.159) | %) / DEOK (3.23%) / DL | |
| | | | (1.73%) | / DPL (2.65%) / Dominion | |
| | | | (13.03% | %) / EKPC (1.77%) / JCPL | |
| | Replace Amos 138 kV breaker 'E2' | | (3.84%) | / ME (1.93%) / NEPTUNE* | |
| | | | (0.45%) |) / OVEC (0.07%) / PECO | |
| b0490.9 | | Replace Amos 138 kV | | (5.29% | %)/PENELEC (1.89%)/ |
| 00490.9 | | | PEPCO | O (3.82%) / PPL (4.72%) / | |
| | | | PSE | G (6.21%) / RE (0.26%) | |
| | | | | DFAX Allocation: | |
| | | | AEC (5. | 01%) / AEP (4.39%) / APS | |
| | | | (9.26%)/ | BGE (4.43%) / DL (0.02%) | |
| | | | / DPL (6. | 91%) / Dominion (10.82%) / | |
| | | | JCPL | (11.64%) / ME (2.94%) / | |
| | | | NEPTUN | E (1.12%) / PECO (14.51%) | |
| | | | / PEPC | O (6.11%) / PPL (6.39%) / | |
| | | | PSEC | G (15.86%) / RE (0.59%) | |

^{*} Neptune Regional Transmission System, LLC

| Required | Transmission Enhancements | Annual Revenue Require | ement Responsible Customer(s) |
|----------|--|------------------------|---|
| b0504 | Add two advanced technology circuit breakers at Hanging Rock 765 kV to improve operational performance | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: AEP (100%) |
| b0570 | Reconductor East Side Lima – Sterling 138 kV | | AEP (41.99%) / ComEd (58.01%) |
| b0571 | Reconductor West Millersport – Millersport 138 kV | | AEP (73.83%) / ComEd (19.26%) / Dayton (6.91%) |
| b0748 | Establish a new 69 kV circuit between the Canal Road and East Wooster stations, establish a new 69 kV circuit between the West Millersburg and Moreland Switch stations (via Shreve), add reactive support via cap banks | | AEP (100%) |
| b0838 | Hazard Area 138 kV and 69 kV Improvement Projects | | AEP (100%) |
| b0839 | Replace existing 450 MVA transformer at Twin Branch 345 / 138 kV with a 675 MVA transformer | | AEP (99.73%) / Dayton (0.27%) |
| * | Neptune Regiona | l Transmission | n System, LLC |

| Required T | ransmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|---|----------------------------|-----------------------------------|
| b0840 | String a second 138 kV circuit on the open tower position between Twin | | AED (1000/) |
| b0840.1 | Establish a new 138/69-34.5kV Station to interconnect the existing | | AEP (100%) |
| b0917 | 34.5kV network Replace Baileysville 138 kV breaker 'P' | | AEP (100%) AEP (100%) |
| b0918 | Replace Riverview 138 kV breaker '634' | | AEP (100%) |
| b0919 | Replace Torrey 138 kV breaker 'W' | | AEP (100%) |
| b1032.1 | Construct a new 345/138kV station on the Marquis-Bixby 345kV line near the intersection with Ross - Highland 69kV | | AEP (89.97%) / Dayton (10.03%) |
| b1032.2 | Construct two 138kV outlets to Delano 138kV station and to Camp Sherman station | | AEP (89.97%) / Dayton (10.03%) |
| b1032.3 | Convert Ross - Circleville 69kV to 138kV | | AEP (89.97%) / Dayton (10.03%) |
| b1032.4 | Install 138/69kV transformer at new station and connect in the Ross - Highland 69kV line | | AEP (89.97%) / Dayton (10.03%) |
| b1033 | Add a third delivery point from AEP's East Danville Station to the City of Danville. | | AEP (100%) |

| Required T | Transmission Enhancements | Annual Revenue Requirement | nt Responsible Customer(s) |
|------------|---|----------------------------|------------------------------|
| | Establish new South | | AEP (96.01%) / APS (0.62%) / |
| | Canton - West Canton | | ComEd (0.19%) / Dayton |
| b1034.1 | 138kV line (replacing | | (0.44%) / DL (0.13%) / |
| 01034.1 | Torrey - West Canton) and | | PENELEC (2.61%) |
| | Wagenhals – Wayview | | |
| | 138kV | | |
| | Loop the existing South | | AEP (96.01%) / APS (0.62%) / |
| | Canton - Wayview 138kV | | ComEd (0.19%) / Dayton |
| b1034.2 | circuit in-and-out of West | | (0.44%) / DL (0.13%) / |
| | Canton | | PENELEC (2.61%) |
| | Install a 345/138kV 450 | | AEP (96.01%) / APS (0.62%) / |
| b1034.3 | | | ComEd (0.19%) / Dayton |
| 01034.3 | MVA transformer at Canton Central | | (0.44%) / DL (0.13%) / |
| | | | PENELEC (2.61%) |
| | Rebuild/reconductor the Sunnyside - Torrey 138kV line | | AEP (96.01%) / APS (0.62%) / |
| b1034.4 | | | ComEd (0.19%) / Dayton |
| 01034.4 | | | (0.44%) / DL (0.13%) / |
| | | | PENELEC (2.61%) |
| | Disconnect/eliminate the West Canton 138kV terminal at Torrey Station | | AEP (96.01%) / APS (0.62%) / |
| b1034.5 | | | ComEd (0.19%) / Dayton |
| 01034.3 | | | (0.44%) / DL (0.13%) / |
| | | | PENELEC (2.61%) |
| | Replace all 138kV circuit | | |
| | breakers at South Canton | | AEP (96.01%) / APS (0.62%) / |
| b1034.6 | Station and operate the | | ComEd (0.19%) / Dayton |
| | station in a breaker and a | | (0.44%) / DL (0.13%) / |
| | half configuration | | PENELEC (2.61%) |
| | Replace all obsolete 138kV | | AEP (96.01%) / APS (0.62%) / |
| b1034.7 | circuit breakers at the | | ComEd (0.19%) / Dayton |
| 01034.7 | Torrey and Wagenhals | | (0.44%) / DL (0.13%) / |
| | stations | | PENELEC (2.61%) |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install additional circuit breakers at the West Canton. South Canton. b1034.8 AEP (96.01%) / APS (0.62%) / Canton Central. and ComEd (0.19%) / Dayton Wagenhals stations to accommodate (0.44%) / DL (0.13%) / the new circuits PENELEC (2.61%) Establish a third 345kV breaker string in the West Millersport Station. Construct a new West b1035 Millersport Gahanna 138kV circuit. Miscellaneous improvements to 138kV transmission system. AEP (100%) Upgrade terminal equipment at Poston b1036 Station and update remote end relays AEP (100%) Sag check Bonsack-Cloverdale 138 kV. Cloverdale-Centerville 138kV. Centerville-Ivy Hill 138kV, Ivy Hillb1037 Reusens 138kV, Bonsack-138kV Reusens and Reusens-Monel-Gomingo-Joshua Falls 138 kV. AEP (100%) Check the Crooksville -Muskingum 138 kV sag b1038 and perform the required

improve

the

to

emergency rating

work

AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study for the Madison – Cross Street 138 b1039 kV line and perform the required work to improve the emergency rating AEP (100%) Rebuild an 0.065 mile section of the New Carlisle b1040 - Olive 138 kV line and change the 138 kV line switches at New Carlisle AEP (100%) Perform a sag study for the Moseley - Roanoke 138 kV b1041 to increase the emergency rating AEP (100%) Perform sag studies to raise the emergency rating of b1042 Amos – Poca 138kV AEP (100%) Perform sag studies to raise the emergency rating of b1043 Turner - Ruth 138kV AEP (100%) Perform sag studies to raise the emergency rating of b1044 Kenova - South Point 138kV AEP (100%) Perform sag studies of Tri b1045 State - Darrah 138 kV AEP (100%) Perform sag study Scottsville - Bremo 138kV b1046 to raise the emergency rating AEP (100%) Perform sag study of Otter Switch - Altavista 138kV b1047 to raise the emergency rating AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s)

| Required 1 | ransmission Ennancements | Annuai Revenue Requireme | ent Responsible Customer(s) |
|------------|-----------------------------|--------------------------|-----------------------------|
| | Reconductor the Bixby - | | |
| b1048 | Three C - Groves and | | |
| 01040 | Bixby - Groves 138 kV | | |
| | tower line | | AEP (100%) |
| | Upgrade the risers at the | | |
| | Riverside station to | | |
| b1049 | increase the rating of | | |
| | Benton Harbor – Riverside | | |
| | 138kV | | AEP (100%) |
| | Rebuilding and reconductor | | |
| b1050 | the Bixby – Pickerington | | |
| 01030 | Road - West Lancaster 138 | | |
| | kV line | | AEP (100%) |
| | Perform a sag study for the | | |
| | Kenzie Creek – Pokagon | | |
| b1051 | 138 kV line and perform | | |
| 01031 | the required work to | | |
| | improve the emergency | | |
| | rating | | AEP (100%) |
| | Unsix-wire the existing | | |
| b1052 | Hyatt - Sawmill 138 kV | | |
| 01032 | line to form two Hyatt - | | |
| | Sawmill 138 kV circuits | | AEP (100%) |
| | Perform a sag study and | | |
| b1053 | remediation of 32 miles | | |
| 01033 | between Claytor and Matt | | |
| | Funk. | | AEP (100%) |
| | Add 28.8 MVAR 138 kV | | |
| | capacitor bank at Huffman | | |
| b1091 | and 43.2 MVAR 138 kV | | |
| 01071 | Bank at Jubal Early and | | |
| | 52.8 MVAR 138 kV Bank | | |
| | at Progress Park Stations | | AEP (100%) |

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Add 28.8 MVAR 138 kV capacitor bank at Sullivan b1092 Gardens and 52.8 MVAR 138 kV Bank at Reedy **Creek Stations** AEP (100%) Add a 43.2 MVAR capacitor bank at the b1093 Morgan Fork 138 kV Station AEP (100%) Add a 64.8 MVAR b1094 capacitor bank at the West Huntington 138 kV Station AEP (100%) Replace Ohio Central 138 b1108 kV breaker 'C2' AEP (100%) Replace Ohio Central 138 b1109 kV breaker 'D1' AEP (100%) Replace Sporn A 138 kV b1110 breaker 'J' AEP (100%) Replace Sporn A 138 kV b1111 breaker 'J2' AEP (100%) Replace Sporn A 138 kV b1112 breaker 'L' AEP (100%) Replace Sporn A 138 kV b1113 breaker 'L1' AEP (100%) Replace Sporn A 138 kV b1114 breaker 'L2' AEP (100%) Replace Sporn A 138 kV b1115 breaker 'N' AEP (100%) Replace Sporn A 138 kV b1116 breaker 'N2' AEP (100%) Perform a sag study on Altavista – Leesville 138 b1227 kV circuit AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace the existing 138/69-12 kV transformer at West b1231 Moulton Station with a 138/69 kV transformer and a 69/12 kV transformer AEP (96.69%) / Dayton (3.31%) Replace Roanoke 138 kV b1375 breaker 'T' AEP (100%) Replace Roanoke 138 kV b1376 breaker 'E' AEP (100%) Replace Roanoke 138 kV b1377 breaker 'F' AEP (100%) Replace Roanoke 138 kV b1378 breaker 'G' AEP (100%) Replace Roanoke 138 kV b1379 breaker 'B' AEP (100%) Replace Roanoke 138 kV b1380 breaker 'A' AEP (100%) Replace Olive 345 kV b1381 breaker 'E' AEP (100%) Replace Olive 345 kV b1382 breaker 'R2' AEP (100%) Perform a sag study on the Desoto – Deer Creek 138 kV b1416 line to increase the emergency rating AEP (100%) Perform a sag study on the Delaware – Madison 138 kV b1417 line to increase the emergency rating AEP (100%) Perform a sag study on the Rockhill – East Lima 138 kV b1418 line to increase the emergency rating AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study on the Findlay Center – Fostoria Ctl b1419 138 kV line to increase the emergency rating AEP (100%) A sag study will be required to increase the emergency rating for this line. Depending on the outcome of b1420 this study, more action may be required in order to increase the rating AEP (100%) Perform a sag study on the Sorenson - McKinley 138 kV b1421 line to increase the emergency rating AEP (100%) Perform a sag study on John Amos – St. Albans 138 kV b1422 line to allow for operation up to its conductor emergency rating AEP (100%) A sag study will be performed on the Chemical – Capitol b1423 Hill 138 kV line to determine if the emergency rating can be utilized AEP (100%) Perform a sag study for Benton Harbor – West Street b1424 - Hartford 138 kV line to improve the emergency rating AEP (100%) Perform a sag study for the East Monument – East Danville 138 kV line to allow b1425 for operation up to the conductor's maximum operating temperature AEP (100%)

^{*} Neptune Regional Transmission System, LLC

| Required' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|-----------|--------------------------------|----------------------------|-------------------------|
| | Perform a sag study for the | | |
| | Reusens – Graves 138 kV line | | |
| b1426 | to allow for operation up to | | |
| | the conductor's maximum | | |
| | operating temperature | | AEP (100%) |
| | Perform a sag study on Smith | | |
| | Mountain – Leesville – | | |
| b1427 | Altavista – Otter 138 kV and | | |
| | on Boones – Forest – New | | |
| | London – JohnsMT – Otter | | AEP (100%) |
| | Perform a sag study on Smith | | |
| | Mountain – Candlers | | |
| b1428 | Mountain 138 kV and Joshua | | |
| | Falls – Cloverdale 765 kV to | | |
| | allow for operation up to | | AEP (100%) |
| | Perform a sag study on | | |
| | Fremont – Clinch River 138 | | |
| b1429 | kV to allow for operation up | | |
| | to its conductor emergency | | |
| | ratings | | AEP (100%) |
| | Install a new 138 kV circuit | | |
| | breaker at Benton Harbor | | |
| b1430 | station and move the load | | |
| | from Watervliet 34.5 kV | | |
| | station to West street 138 kV | | AEP (100%) |
| | Perform a sag study on the | | |
| | Kenova – Tri State 138 kV | | |
| b1432 | line to allow for operation up | | |
| | to their conductor emergency | | |
| | rating | | AEP (100%) |
| | Replace risers in the West | | |
| | Huntington Station to | | |
| b1433 | increase the line ratings | | |
| | which would eliminate the | | |
| | overloads for the | | |
| | contingencies listed | | AEP (100%) |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study on the line from Desoto to Madison. b1434 Replace bus and risers at Daleville station and replace bus and risers at Madison AEP (100%) Replace the 2870 MCM b1435 ACSR riser at the Sporn station AEP (100%) Perform a sag study on the Sorenson – Illinois Road 138 kV line to increase the b1436 emergency MOT for this line. Replace bus and risers at Illinois Road AEP (100%) Perform sag study on Rock Cr. – Hummel Cr. 138 kV to increase the emergency MOT for the line, replace bus and b1437 risers at Huntington J., and replace relays for Hummel Cr. – Hunt – Soren. Line at Soren AEP (100%) Replacement of risers at McKinley and Industrial Park stations and performance of a sag study for the 4.53 miles of b1438 795 ACSR section is expected to improve the Summer Emergency rating to 335 MVA AEP (100%) By replacing the risers at Lincoln both the Summar Normal and Summer b1439 Emergency ratings will improve to 268 MVA AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) By replacing the breakers at Lincoln the Summer b1440 Emergency rating will improve to 251 MVA AEP (100%) Replacement of risers at South Side and performance of a sag study for the 1.91 miles of 795 ACSR section is b1441 expected to improve the Summer Emergency rating to 335 MVA AEP (100%) Replacement of 954 ACSR conductor with 1033 ACSR and performance of a sag b1442 study for the 4.54 miles of 2-636 ACSR section is expected AEP (100%) Station work at Thelma and Busseyville Stations will be b1443 performed to replace bus and risers AEP (100%) Perform electrical clearance studies on Clinch River -Clinchfield 139 kV line b1444 (a.k.a. sag studies) to determine if the emergency ratings can be utilized AEP (100%) Perform a sag study on the Addison (Buckeye CO-OP) – Thinever and North Crown b1445 City – Thivener 138 kV sag study and switch AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study on the Parkersburg (Allegheny b1446 Power) – Belpre (AEP) 138 AEP (100%) Dexter – Elliot tap 138 kV b1447 sag check AEP (100%) Dexter - Meigs 138 kV b1448 **Electrical Clearance Study** AEP (100%) Meigs tap – Rutland 138 kV b1449 sag check AEP (100%) Muskingum – North b1450 Muskingum 138 kV sag check AEP (100%) North Newark – Sharp Road b1451 138 kV sag check AEP (100%) North Zanesville – Zanesville b1452 138 kV sag check AEP (100%) North Zanesville – Powelson b1453 and Ohio Central – Powelson 138 kV sag check AEP (100%) Perform an electrical clearance study on the Ross – Delano – Scioto Trail 138 kV b1454 line to determine if the emergency rating can be utilized AEP (100%) Perform a sag check on the Sunny – Canton Central – Wagenhals 138 kV line to b1455 determine if all circuits can be operated at their summer emergency rating AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) The Tidd – West Bellaire 345 kV circuit has been de-rated to its normal rating and would need an electrical clearance b1456 study to determine if the emergency rating can be utilized AEP (100%) The Tiltonsville – Windsor 138 kV circuit has been derated to its normal rating and would need an electrical b1457 clearance study to determine if the emergency rating could be utilized AEP (100%) Install three new 345 kV breakers at Bixby to separate the Marquis 345 kV line and transformer #2. Operate b1458 Circleville - Harrison 138 kV and Harrison – Zuber 138 kV up to conductor emergency ratings AEP (100%) Several circuits have been derated to their normal conductor ratings and could b1459 benefit from electrical clearance studies to determine if the emergency rating could be utilized AEP (100%) b1460 Replace 2156 & 2874 risers AEP (100%) Replace meter, metering CTs and associated equipment at b1461 the Paden City feeder AEP (100%) Replace relays at both South Cadiz 138 kV and Tidd 138 b1462 kV AEP (100%)

^{*} Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Reconductor the Bexley b1463 Groves 138 kV circuit AEP (100%) b1464 Corner 138 kV upgrades AEP (100%) AEC (0.71%) / AEP (75.06%) / APS (1.25%) / BGE (1.81%) / ComEd (5.91%) / Dayton (0.86%) / DL (1.23%) / DPL (0.95%) / Add a 3rd 2250 MVA b1465.1 765/345 kV transformer at Dominion (3.89%) / JCPL Sullivan station (1.58%) / NEPTUNE (0.15%) / HTP (0.07%) / PECO (2.08%) / PEPCO (1.66%) / ECP (0.07%)** / PSEG (2.62%) / RE (0.10%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK Replace the 100 MVAR 765 (3.23%) / DL (1.73%) / DPL kV shunt reactor bank on (2.65%) / Dominion (13.03%) / b1465.2 Rockport – Jefferson 765 kV EKPC (1.77%) / JCPL (3.84%) / line with a 300 MVAR bank ME (1.93%) / NEPTUNE* at Rockport Station (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (100%)

^{*}Neptune Regional Transmission System, LLC

^{**}East Coast Power, L.L.C.

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s)

| Required 1 | Tansinission Enhancements A | illuai Revenue Requirement Responsible Customer(s) |
|------------|------------------------------|--|
| | | Load-Ratio Share Allocation: |
| | | AEC (1.71%) / AEP (14.04%) / APS |
| | | (5.61%) / ATSI (8.10%) / BGE |
| | | (4.36%) / ComEd (13.14%) / Dayton |
| | | (2.15%) / DEOK (3.23%) / DL |
| | Transpose the Rockport – | (1.73%) / DPL (2.65%) / Dominion |
| b1465.3 | Sullivan 765 kV line and the | (13.03%) / EKPC (1.77%) / JCPL |
| 01403.3 | Rockport – Jefferson 765 | (3.84%) / ME (1.93%) / NEPTUNE* |
| | kV line | (0.45%) / OVEC (0.07%) / PECO |
| | | (5.29%) / PENELEC (1.89%) / |
| | | PEPCO (3.82%) / PPL (4.72%) / |
| | | PSEG (6.21%) / RE (0.26%) |
| | | DFAX Allocation: |
| | | AEP (100%) |
| | | Load-Ratio Share Allocation: |
| | | AEC (1.71%) / AEP (14.04%) / APS |
| | | (5.61%) / ATSI (8.10%) / BGE |
| | | (4.36%) / ComEd (13.14%) / Dayton |
| | | (2.15%) / DEOK (3.23%) / DL |
| | Make switching | (1.73%) / DPL (2.65%) / Dominion |
| b1465.4 | improvements at Sullivan | (13.03%) / EKPC (1.77%) / JCPL |
| 01703.7 | and Jefferson 765 kV | (3.84%) / ME (1.93%) / NEPTUNE* |
| | stations | (0.45%) / OVEC (0.07%) / PECO |
| | | (5.29%) / PENELEC (1.89%) / |
| | | PEPCO (3.82%) / PPL (4.72%) / |
| | | PSEG (6.21%) / RE (0.26%) |
| | | DFAX Allocation: |
| | | AEP (100%) |
| | Create an in and out loop at | |
| | Adams Station by removing | |
| b1466.1 | the hard tap that currently | |
| | exists | AEP (100%) |
| b1466.2 | Upgrade the Adams | |
| 01100.2 | transformer to 90 MVA | AEP (100%) |

| Required T | ransmission Enhancements | Annual Revenue Requiremen | t Responsible Customer(s) |
|------------|------------------------------|---------------------------|---------------------------|
| | At Seaman Station install a | | |
| b1466.3 | new 138 kV bus and two | | |
| | new 138 kV circuit breakers | | AEP (100%) |
| | Convert South Central Co- | | |
| b1466.4 | op's New Market 69 kV | | |
| | Station to 138 kV | | AEP (100%) |
| | The Seaman – Highland | | |
| | circuit is already built to | | |
| b1466.5 | 138 kV, but is currently | | |
| 01400.3 | operating at 69 kV, which | | |
| | would now increase to 138 | | |
| | kV | | AEP (100%) |
| | At Highland Station, install | | |
| | a new 138 kV bus, three | | |
| b1466.6 | new 138 kV circuit breakers | | |
| | and a new 138/69 kV 90 | | |
| | MVA transformer | | AEP (100%) |
| | Using one of the bays at | | |
| | Highland, build a 138 kV | | |
| b1466.7 | circuit from Hillsboro – | | |
| | Highland 138 kV, which is | | |
| | approximately 3 miles | | AEP (100%) |
| | Install a 14.4 MVAr | | |
| b1467.1 | Capacitor Bank at New | | |
| | Buffalo station | | AEP (100%) |
| | Reconfigure the 138 kV bus | | |
| | at LaPorte Junction station | | |
| b1467.2 | to eliminate a contingency | | |
| 01407.2 | resulting in loss of two 138 | | |
| | kV sources serving the | | |
| | LaPorte area | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required T | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|------------------------------|----------------------------|-------------------------|
| | Expand Selma Parker Station | | |
| b1468.1 | and install a 138/69/34.5 kV | | |
| | transformer | | AEP (100%) |
| b1468.2 | Rebuild and convert 34.5 kV | | |
| | line to Winchester to 69 kV, | | |
| | including Farmland Station | | AEP (100%) |
| b1468.3 | Retire the 34.5 kV line from | | |
| 01400.3 | Haymond to Selma Wire | | AEP (100%) |
| | Conversion of the | | |
| b1469.1 | Newcomerstown – | | |
| 01409.1 | Cambridge 34.5 kV system | | |
| | to 69 kV operation | | AEP (100%) |
| | Expansion of the Derwent 69 | 9 | |
| b1469.2 | kV Station (including | | |
| 01407.2 | reconfiguration of the 69 kV | , | |
| | system) | | AEP (100%) |
| | Rebuild 11.8 miles of 69 kV | | |
| b1469.3 | line, and convert additional | | |
| 01407.3 | 34.5 kV stations to 69 kV | | |
| | operation | | AEP (100%) |
| | Build a new 138 kV double | | |
| b1470.1 | circuit off the Kanawha – | | |
| 01470.1 | Bailysville #2 138 kV circui | t | |
| | to Skin Fork Station | | AEP (100%) |
| b1470.2 | Install a new 138/46 kV | | |
| 01470.2 | transformer at Skin Fork | | AEP (100%) |
| | Replace 5 Moab's on the | | |
| b1470.3 | Kanawha – Baileysville line | | |
| 014/0.3 | with breakers at the Sundial | | |
| | 138 kV station | | AEP (100%) |
| | Perform a sag study on the | | |
| | East Lima – For Lima – | | |
| b1471 | Rockhill 138 kV line to | | |
| | increase the emergency | | |
| | rating | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required' | Transmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|-----------|-------------------------------|----------------------------|-------------------------|
| | Perform a sag study on the | | |
| b1472 | East Lima – Haviland 138 kV | | |
| | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| | East New Concord – | | |
| b1473 | Muskingum River section of | | |
| | the Muskingum River – West | | |
| | Cambridge 138 kV circuit | | AEP (100%) |
| | Perform a sag study on the | | |
| b1474 | Ohio Central – Prep Plant tap | | |
| | 138 kV circuit | | AEP (100%) |
| | Perform a sag study on the | | |
| b1475 | S73 – North Delphos 138 kV | | |
| 014/3 | line to increase the | | |
| | emergency rating | | AEP (100%) |
| | Perform a sag study on the | | |
| b1476 | S73 – T131 138 kV line to | | |
| | increase the emergency rating | 5 | AEP (100%) |
| | The Natrium – North Martin | | |
| | 138 kV circuit would need an | | |
| b1477 | electrical clearance study | | |
| | among other equipment | | |
| | upgrades | | AEP (100%) |
| | Upgrade Strouds Run – | | |
| b1478 | Strounds Tap 138 kV relay | | |
| | and riser | | AEP (100%) |
| b1479 | West Hebron station upgrade | | |
| 014/9 | West Heoron station upgrade | ? | AEP (100%) |
| | Perform upgrades and a sag | | |
| | study on the Corner – | | |
| b1480 | Layman 138 kV section of the | e | |
| | Corner – Muskingum River | | |
| | 138 kV circuit | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study on the West Lima - Eastown Road - Rockhill 138 kV line and b1481 replace the 138 kV risers at Rockhill station to increase the emergency rating AEP (100%) Perform a sag study for the Albion – Robison Park 138 b1482 kV line to increase its emergency rating AEP (100%) Sag study 1 mile of the Clinch River – Saltville 138 kV line and replace the risers b1483 and bus at Clinch River, Lebanon and Elk Garden Stations AEP (100%) Perform a sag study on the Hacienda – Harper 138 kV b1484 line to increase the emergency rating AEP (100%) Perform a sag study on the Jackson Road - Concord b1485 183 kV line to increase the emergency rating AEP (100%) The Matt Funk – Poages Mill b1486 Starkey 138 kV line requires AEP (100%) Perform a sag study on the New Carlisle – Trail Creek b1487 138 kV line to increase the emergency rating AEP (100%) Perform a sag study on the Olive – LaPorte Junction 138 b1488 kV line to increase the emergency rating AEP (100%)

^{*}Neptune Regional Transmission System, LLC

| Required T | ransmission Enhancements Ann | nual Revenue Requirement | Responsible Customer(s) |
|------------|--------------------------------|--------------------------|-------------------------|
| | A sag study must be performed | | |
| b1489 | for the 5.40 mile Tristate – | | |
| | Chadwick 138 kV line to | | |
| | determine if a higher | | |
| | emergency rating can be used | | AEP (100%) |
| b1490.1 | Establish a new 138/69 kV | | |
| 01490.1 | Butler Center station | | AEP (100%) |
| | Build a new 14 mile 138 kV | | |
| b1490.2 | line from Auburn station to | | |
| 01490.2 | Woods Road station VIA | | |
| | Butler Center station | | AEP (100%) |
| | Replace the existing 40 MVA | | |
| b1490.3 | 138/69 kV transformer at | | |
| 01490.3 | Auburn station with a 90 MVA | | |
| | 138/96 kV transformer | | AEP (100%) |
| | Improve the switching | | |
| b1490.4 | arrangement at Kendallville | | |
| | station | | AEP (100%) |
| | Replace bus and risers at | | |
| | Thelma and Busseyville | | |
| b1491 | stations and perform a sag | | |
| | study for the Big Sandy – | | |
| | Busseyville 138 kV line | | AEP (100%) |
| | Reconductor 0.65 miles of the | | |
| b1492 | Glen Lyn – Wythe 138 kV line | | |
| | with 3 – 1590 ACSR | | AEP (100%) |
| | Perform a sag study for the | | |
| 1-1402 | Bellfonte – Grantston 138 kV | | |
| b1493 | line to increase its emergency | | |
| | rating | | AEP (100%) |
| b1494 | Perform a sag study for the | | |
| | North Proctorville – Solida – | | |
| | Bellefonte 138 kV line to | | |
| | increase its emergency rating | | AEP (100%) |

| Required T | Fransmission Enhancements Ann | nual Revenue Requireme | ent Responsible Customer(s) |
|------------|---|------------------------|--|
| b1495 | Add an additional 765/345 kV transformer at Baker Station | | AEC (0.41%) / AEP (87.22%) / BGE (1.03%) / ComEd (3.38%) / Dayton (1.23%) / DL (1.46%) / DPL (0.54%) / JCPL (0.90%) / NEPTUNE (0.09%) / HTP (0.04%) / PECO (1.18%) / PEPCO (0.94%) / ECP** (0.04%) / PSEG (1.48%) / RE (0.06%) |
| b1496 | Replace 138 kV bus and risers at Johnson Mountain Station | | AEP (100%) |
| b1497 | Replace 138 kV bus and risers at Leesville Station | | AEP (100%) |
| b1498 | Replace 138 kV risers at Wurno Station | | AEP (100%) |
| b1499 | Perform a sag study on Sporn A – Gavin 138 kV to determine if the emergency rating can be improved | | AEP (100%) |
| b1500 | The North East Canton – Wagenhals 138 kV circuit would need an electrical clearance study to determine if the emergency rating can be utilized | | AEP (100%) |
| b1501 | The Moseley – Reusens 138 kV circuit requires a sag study to determine if the emergency rating can be utilized to address a thermal loading issue for a category C3 | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Reconductor the Conesville East – Conesville Prep Plant Tap 138 kV section of b1502 the Conesville - Ohio Central to fix Reliability N-1-1 thermal overloads AEP (100%) AEP (93.61%) / ATSI (2.99%) / Establish Sorenson 345/138 ComEd (2.07%) / HTP (0.03%) / b1659 kV station as a 765/345 kV PENELEC (0.31%) / ECP** (0.03%) / PSEG (0.92%) / RE station (0.04%)Replace Sorenson 138 kV b1659.1 breaker 'L1' AEP (100%) Replace Sorenson 138 kV b1659.2 breaker 'L2' breaker AEP (100%) Replace Sorenson 138 kV b1659.3 breaker 'M1' AEP (100%) Replace Sorenson 138 kV b1659.4 breaker 'M2' AEP (100%) Replace Sorenson 138 kV b1659.5 breaker 'N1' AEP (100%) Replace Sorenson 138 kV b1659.6 breaker 'N2' AEP (100%) Replace Sorenson 138 kV b1659.7 breaker 'O1' AEP (100%) Replace Sorenson 138 kV b1659.8 breaker 'O2' AEP (100%) Replace Sorenson 138 kV b1659.9 breaker 'M' AEP (100%) Replace Sorenson 138 kV b1659.10 breaker 'N' AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Sorenson 138 kV b1659.11 breaker 'O' AEP (100%) Replace McKinley 138 kV b1659.12 breaker 'L1' AEP (100%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / Establish 765 kV yard at EKPC (1.77%) / JCPL (3.84%) / b1659.13 Sorenson and install four ME (1.93%) / NEPTUNE* 765 kV breakers (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (75.95%) / Dayton (7.52%) / DEOK (12.77%) / EKPC (3.76%) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / Build approximately 14 EKPC (1.77%) / JCPL (3.84%) / miles of 765 kV line from b1659.14 ME (1.93%) / NEPTUNE* existing Dumont -(0.45%) / OVEC (0.07%) / PECO Marysville line (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (71.06%) / ATSI (15.95%) / Dayton (7.10%) / DL (4.84%) / EKPC (0.77%) / OVEC (0.28%)

^{*}Neptune Regional Transmission System, LLC

| Required Transmission Enhancements | | Annual Revenue Require | ement Responsible Customer(s) |
|------------------------------------|---|------------------------|-----------------------------------|
| _ | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | | | (1.73%) / DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / JCPL |
| h1660 | Install a 765/500 kV | | (3.84%) / ME (1.93%) / NEPTUNE* |
| b1660 | transformer at Cloverdale | | (0.45%) / OVEC (0.07%) / PECO |
| | | | (5.29%) / PENELEC (1.89%) / |
| | | | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | Dayton (8.37%) / DEOK (21.94%) / |
| | | | Dominion (56.40%) / EKPC |
| | | | (13.29%) |
| | | | Load-Ratio Share Allocation: |
| | Install a 765 kV circuit breaker at Wyoming station | | AEC (1.71%) / AEP (14.04%) / APS |
| | | | (5.61%) / ATSI (8.10%) / BGE |
| | | | (4.36%) / ComEd (13.14%) / Dayton |
| | | | (2.15%) / DEOK (3.23%) / DL |
| | | | (1.73%) / DPL (2.65%) / Dominion |
| b1661 | | | (13.03%) / EKPC (1.77%) / JCPL |
| 01001 | | | (3.84%) / ME (1.93%) / NEPTUNE* |
| | | | (0.45%) / OVEC (0.07%) / PECO |
| | | | (5.29%) / PENELEC (1.89%) / |
| | | | PEPCO (3.82%) / PPL (4.72%) / |
| | | | PSEG (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |

| Required Transmission Enhancements | | Annual Revenue Requirement | | sponsible Customer(s) |
|------------------------------------|---------------------------|----------------------------|---|-----------------------|
| 1.1660 | Rebuild 4 miles of 46 kV | | | |
| | line to 138 kV from | | | |
| b1662 | Pemberton to Cherry | | | |
| | Creek | | A | AEP (100%) |
| | Circuit Breakers are | | | |
| b1662.1 | installed at Cherry Creek | | | |
| | (facing Pemberton) and at | | | |
| | Pemberton (facing Tams | | | |
| | Mtn. and Cherry Creek) | | A | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required 7 | Γransmission Enhancements Δ | Annual Revenue Requirement Responsible Customer(s) |
|------------|---|--|
| b1662.2 | Install three 138 kV breakers at Grandview Station (facing Cherry Creek, Hinton, and Bradley | AED (1000() |
| b1662.3 | Stations) Remove Sullivan Switching Station (46 kV) | AEP (100%) AEP (100%) |
| b1663 | Install a new 765/138 kV transformer at Jackson Ferry substation | AEP (100%) |
| b1663.1 | Establish a new 10 mile double circuit 138 kV line between Jackson Ferry and Wythe | AEP (100%) |
| b1663.2 | Install 2 765 kV circuit breakers, breaker disconnect switches and associated bus work for the new 765 kV breakers, and new relays for the 765 kV breakers at Jackson's Ferry | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS |
| b1664 | Install switched capacitor banks at Kenwood 138 kV stations | AEP (100%) |
| b1665 | Install a second 138/69 kV transformer at Thelma station | AEP (100%) |
| b1665.1 | Construct a single circuit 69 kV line from West Paintsville to the new Paintsville station | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s)

| b1665.2 | Install new 7.2 MVAR, 46 kV bank at Kenwood Station | AEP (100%) |
|---------|---|-------------------------------|
| b1666 | Build an 8 breaker 138 kV station tapping both circuits of the Fostoria - East Lima 138 kV line | AEP (90.65%) / Dayton (9.35%) |
| b1667 | Establish Melmore as a switching station with both 138 kV circuits terminating at Melmore. Extend the double circuit 138 kV line from Melmore to Fremont Center | AEP (100%) |
| b1668 | Revise the capacitor setting at Riverside 138 kV station | AEP (100%) |
| b1669 | Capacitor setting changes at Ross 138 kV stations | AEP (100%) |
| b1670 | Capacitor setting changes at Wooster 138 kV station | AEP (100%) |
| b1671 | Install four 138 kV breakers in Danville area | AEP (100%) |
| b1676 | Replace Natrium 138 kV breaker 'G (rehab)' | AEP (100%) |
| b1677 | Replace Huntley 138 kV breaker '106' | AEP (100%) |
| b1678 | Replace Kammer 138 kV breaker 'G' | AEP (100%) |
| b1679 | Replace Kammer 138 kV breaker 'H' | AEP (100%) |
| b1680 | Replace Kammer 138 kV breaker 'J' | AEP (100%) |
| b1681 | Replace Kammer 138 kV breaker 'K' | AEP (100%) |
| b1682 | Replace Kammer 138 kV breaker 'M' | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Kammer 138 kV b1683 breaker 'N' AEP (100%) Replace Clinch River 138 kV b1684 breaker 'E1' AEP (100%) Replace Lincoln 138 kV b1685 breaker 'D' AEP (100%) Advance s0251.7 (Replace Corrid 138 kV breaker b1687 '104S') AEP (100%) Advance s0251.8 (Replace b1688 Corrid 138 kV breaker '104C') AEP (100%) Perform sag study on b1712.1 Altavista - Leesville 138 kV Dominion (75.30%) / PEPCO line (24.70%)Rebuild the b1712.2 Altavista - Leesville 138 kV Dominion (75.30%) / PEPCO (24.70%)Perform a sag study of the Bluff Point - Jauy 138 kV line. Upgrade breaker, b1733 wavetrap, and risers at the terminal ends AEP (100%) Perform a sag study of Randoph - Hodgins 138 kV b1734 line. Upgrade terminal equipment AEP (100%) Perform a sag study of R03 -Magely 138 kV line. b1735 Upgrade terminal equipment AEP (100%) Perform a sag study of the b1736 Industrial Park - Summit 138 kV line AEP (100%) Sag study of Newcomerstown - Hillview b1737 138 kV line. Upgrade terminal equipment AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study of the Wolf Creek - Layman 138 kV b1738 line. -Upgrade terminal equipment including a 138 kV breaker and wavetrap AEP (100%) Perform a sag study of the b1739 Ohio Central - West Trinway 138 kV line AEP (100%) Replace Beatty 138 kV b1741 breaker '2C(IPP)' AEP (100%) Replace Beatty 138 kV b1742 breaker '1E' AEP (100%) Replace Beatty 138 kV b1743 breaker '2E' AEP (100%) Replace Beatty 138 kV b1744 breaker '3C' AEP (100%) Replace Beatty 138 kV b1745 breaker '2W' AEP (100%) Replace St. Claire 138 kV b1746 breaker '8' AEP (100%) Replace Cloverdale 138 kV b1747 breaker 'C' AEP (100%) Replace Cloverdale 138 kV b1748 breaker 'D1' AEP (100%) Install two 138kV breakers and two 138kV circuit switchers at South Princeton b1780 Station and one 138kV breaker and one 138kV circuit switcher at Switchback Station AEP (100%) Install three 138 kV breakers and a 138kV circuit switcher b1781 at Trail Fork Station in Pineville, WV AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install a 46kV Moab at Montgomery Station facing b1782 Carbondale (on the London -Carbondale 46 kV circuit) AEP (100%) Add two 138 kV Circuit Breakers and two 138 kV b1783 circuit switchers on the Lonesome Pine - South Bluefield 138 kV line AEP (100%) Install a 52.8 MVAR b1784 capacitor bank at the Clifford 138 kV station AEP (100%) Perform a sag study of 4 b1811.1 miles of the Waterford -Muskingum line AEP (100%) Rebuild 0.1 miles of b1811.2 Waterford - Muskingum 345 kV with 1590 ACSR AEP (100%) Reconductor the AEP portion of the South Canton -Harmon 345 kV with 954 ACSR and upgrade terminal b1812 equipment at South Canton. Expected rating is 1800 MVA S/N and 1800 MVA S/E AEP (100%) Install (3) 345 kV circuit breakers at East Elkhart b1817 station in ring bus designed as a breaker and half scheme AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Expand the Allen station by installing a second 345/138 kV transformer and adding four 138 b1818 kV exits by cutting in the Lincoln - Sterling and Milan -Timber Switch 138 kV double AEP (88.30%) / ATSI (8.86%) / circuit tower line Dayton (2.84%) Rebuild the Robinson Park -Sorenson 138 kV line corridor as b1819 a 345 kV double circuit line with one side operated at 345 kV and AEP (87.18%) / ATSI (10.06%) / one side at 138 kV Dayton (2.76%) Perform a sag study for Hancock - Cave Spring - Roanoke 138 kV circuit to reach new SE ratings b1859 of 272MVA (Cave Spring-Hancock), 205MVA (Cave Spring-Sunscape), 245MVA (ROANO2-Sunscape) AEP (100%) Perform a sag study on the Crooksville - Spencer Ridge section (14.3 miles) of the b1860 Crooksville-Poston-Strouds Run 138 kV circuit to see if any remedial action needed to reach the SE rating (175MVA) AEP (100%) Reconductor 0.83 miles of the Dale - West Canton 138 kV Tieb1861 line and upgrade risers at West Canton 138 kV AEP (100%) Perform a sag study on the Grant - Greentown 138 kV circuit and replace the relay CT at Grant b1862 138 kV station to see if any remedial action needed to reach the new ratings of 251/286MVA AEP (100%)

^{*}Neptune Regional Transmission System, LLC

| Required T | Fransmission Enhancements | Annual Revenue Requirement | Responsible Customer(s) |
|------------|--------------------------------|----------------------------|------------------------------|
| | Perform a sag study of the | | |
| | Kammer - Wayman SW 138 | | |
| b1863 | kV line to see if any remedial | | |
| | action needed to reach the | | |
| | new SE rating of 284MVA | | AEP (100%) |
| b1864.1 | Add two additional 345/138 | | AEP (87.22%) / APS (8.22%) / |
| 01004.1 | kV transformers at Kammer | | ATSI (3.52%) / DL (1.04%) |
| b1864.2 | Add second West Bellaire - | | AEP (87.22%) / APS (8.22%) / |
| 01004.2 | Brues 138 kV circuit | | ATSI (3.52%) / DL (1.04%) |
| b1864.3 | Replace Kammer 138 kV | | |
| 01804.3 | breaker 'E' | | AEP (100%) |
| | Perform a sag study on the | | |
| | Kanawha - Carbondale 138 | | |
| b1865 | kV line to see if any remedial | | |
| | action needed to reach the | | |
| | new ratings of 251/335MVA | | AEP (100%) |
| | Perform a sag study on the | | |
| | Clinch River-Lock Hart- | | |
| | Dorton 138kV line,increase | | |
| b1866 | the Relay Compliance Trip | | |
| 01000 | Limit at Clinch River on the | | |
| | C.RDorton 138kV line to | | |
| | 310 and upgrade the risers | | |
| | with 1590ACSR | | AEP (100%) |
| | Perform a sag study on the | | |
| | Newcomerstown - South | | |
| b1867 | Coshocton 138 kV line to see | | |
| 01007 | if any remedial action is | | |
| | needed to reach the new SE | | |
| | rating of 179MVA | | AEP (100%) |
| | Perform sag study on the | | |
| | East Lima - new Liberty 138 | | |
| b1868 | kV line to see if any remedial | | |
| | action is needed to reach the | | |
| | new SE rating of 219MVA | | AEP (100%) |

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study of the Ohio Central - South Coshocton 138 kV circuit to b1869 see if any remedial action needed to reach the new SE ratings of 250MVA AEP (100%) Replace the Ohio Central transformer #1 345/138/12 b1870 kV 450 MVA for a AEP (68.16%) / ATSI (25.27%) / 345/138/34.5 kV 675 MVA Dayton (3.88%) / PENELEC transformer (1.59%) / DEOK (1.10%) Perform a sag study on the Central - West Coshocton b1871 138 kV line (improving the emergency rating of this line to 254 MVA) AEP (100%) Add a 57.6 MVAr capacitor b1872 bank at East Elkhart 138 kv station in Indiana AEP (100%) Install two 138 kV circuit breakers at Cedar Creek b1873 Station and primary side circuit switcher on the 138/69/46 kV transformer AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install two 138 kV circuit breakers and one 138 kV b1874 circuit switcher at Magely 138 kV station in Indiana AEP (100%) Build 25 miles of new 138 kV line from Bradley Station through Tower 117 Station and terminating at McClung b1875 138 kV station. Existing 69 kV distribution transformers will be replaced with 138 kV transformers APS (100%) Install a 14.4 MVAr capacitor bank at Capital Avenue b1876 (AKA Currant Road) 34.5 kV bus AEP (100%) Relocate 138 kV Breaker G to the West Kingsport - Industry b1877 Drive 138 kV line and Remove 138 kV MOAB AEP (100%) Perform a sag study on the Lincoln - Robinson Park 138 b1878 kV line (Improve the emergency rating to 244 MVA) AEP (100%) Perform a sag study on the Hansonville - Meadowview 138 kV line (Improve the b1879 emergency rating to 245 MVA) AEP (100%) Rebuild the 15 miles of the Moseley - Roanoke 138 kV line. This project would b1880 consist of rebuilding both circuits on the double circuit AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace existing 600 Amp switches, station risers and increase the CT ratios associated b1881 with breaker 'G' at Sterling 138 kV Station. It will increase the rating to 296 MVA S/N and 384 MVA S/E AEP (100%) Perform a sag study on the Bluff Point - Randolf 138 kV line to b1882 see if any remedial action needed to reach the new SE rating of 255 MVA AEP (100%) Switch the breaker position of b1883 transformer #1 and SW Lima at East Lima 345 kV bus AEP (100%) Perform a sag study on Strawton station - Fisher Body - Deer Creek 138 kV line to see if any b1884 remedial action needed to reach the new SE rating of 250 MVA AEP (100%) Establish a new 138/69 kV source at Carrollton and construct two new 69 kV lines from Carrollton b1887 to tie into the Dennison - Miller SW 69 kV line and to East Dover 69 kV station respectively AEP (100%) Install a 69 kV line breaker at Blue Pennant 69 kV Station b1888 facing Bim Station and 14.4 MVAr capacitor bank AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Install a 43.2 MVAR capacitor b1889 bank at Hinton 138 kV station (APCO WV) AEP (100%) Rebuild the Ohio Central - West Trinway (4.84 miles) section of the Academia - Ohio Central 138 b1901 kV circuit. Upgrade the Ohio Central riser, Ohio Central switch and the West Trinway riser AEP (100%) Construct new 138/69 Michiana Station near Bridgman by tapping b1904.1 the new Carlisle - Main Street 138 kV and the Bridgman -Buchanan Hydro 69 kV line AEP (100%) Establish a new 138/12 kV New Galien station by tapping the b1904.2 Olive - Hickory Creek 138 kV line AEP (100%) Retire the existing Galien station and move its distribution load to b1904.3 New Galien station. Retire the Buchanan Hydro - New Carlisile 34.5 kV line AEP (100%) Implement an in and out scheme at Cook 69 kV by eliminating the b1904.4 Cook 69 kV tap point and by installing two new 69 kV circuit breakers AEP (100%) Rebuild the Bridgman - Cook 69 b1904.5 kV and the Derby - Cook 69 kV lines AEP (100%) Perform a sag study on the Brues b1946 - West Bellaire 138 kV line AEP (100%) A sag study of the Dequine -Meadowlake 345 kV line #1 line

rating to 1400 MVA

may improve the emergency

b1947

AEP (100%)

^{*}Neptune Regional Transmission System, LLC

| Required 7 | Transmission Enhancements | Annual Revenue Requireme | ent Responsible Customer(s) |
|------------|--------------------------------|--------------------------|-------------------------------|
| | Establish a new 765/345 | | - |
| | interconnection at Sporn. | | |
| L1040 | Install a 765/345 kV | | |
| b1948 | transformer at Mountaineer | | ATSI (61.08%) / DL (21.87%) / |
| | and build 34 mile of 345 kV to | | Dominion (13.97%) / PENELEC |
| | Sporn | | (3.08%) |
| | Perform a sag study on the | | |
| b1949 | Grant Tap – Deer Creek 138 | | |
| 01949 | kV line and replace bus and | | |
| | risers at Deer Creek station | | AEP (100%) |
| | Perform a sag study on the | | |
| b1950 | Kammer – Ormet 138 kV line | | |
| | of the conductor section | | AEP (100%) |
| | Perform a sag study of the | | |
| b1951 | Maddox- Convoy 345 kV line | | |
| 01931 | to improve the emergency | | |
| | rating to 1400 MVA | | AEP (100%) |
| | Perform a sag study of the | | |
| b1952 | Maddox – T130 345 kV line | | |
| 01732 | to improve the emergency | | |
| | rating to 1400 MVA | | AEP (100%) |
| | Perform a sag study of the | | |
| | Meadowlake - Olive 345 kV | | |
| b1953 | line to improve the | | |
| | emergency rating to 1400 | | |
| | MVA | | AEP (100%) |
| | Perform a sag study on the | | |
| b1954 | Milan - Harper 138 kV line | | |
| 01731 | and replace bus and switches | | |
| | at Milan Switch station | | AEP (100%) |
| | Perform a sag study of the R- | | |
| b1955 | 049 - Tillman 138 kV line | | |
| 01733 | may improve the emergency | | |
| | rating to 245 MVA | | AEP (100%) |

| Required' | Transmission Enhancements | Annual Revenue Requirement Responsible Customer(s) |
|-----------|---|---|
| b1956 | Perform a sag study of the Tillman - Dawkins 138 kV line may improve the emergency rating to 245 MVA | AEP (100%) |
| b1957 | Terminate Transformer #2 at SW Lima in a new bay position | AEP (69.41%) / ATSI (23.11%) / ECP** (0.17%) / HTP (0.19%) / PENELEC (2.42%) / PSEG (4.52%) / RE (0.18%) |
| b1958 | Perform a sag study on the Brookside - Howard 138 kV line and replace bus and risers at AEP Howard station | S AEP (100%) |
| b1960 | Sag Study on 7.2 miles SE Canton-Canton Central 138kV ckt | AEP (100%) |
| b1961 | Sag study on the Southeast Canton – Sunnyside 138kV line | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

^{**}East Coast Power, L.L.C.

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) **Load-Ratio Share Allocation:** AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC Add four 765 kV breakers at b1962 (1.77%) / JCPL (3.84%) / ME Kammer (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) **DFAX Allocation:** AEP (100%) Build approximately 1 mile of circuit comprising of 2-954 b1963 ACSR to get the rating of Waterford-Muskinum 345 kV higher AEP (100%) APS (33.51%) / ATSI (32.21%) / DL (18.64%) / Dominion (6.01%) / Reconductor 13 miles of the ECP** (0.10%) / HTP (0.11%) / b1970 Kammer – West Bellaire JCPL (1.68%) / Neptune* (0.18%) 345kV circuit / PENELEC (4.58%) / PSEG (2.87%) / RE (0.11%) Perform a sag study to improve the emergency rating b1971 on the Bridgville -Chandlersville 138 kV line AEP (100%) Replace disconnect switch on b1972 the South Canton 765/345 kV transformer AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study to improve the emergency b1973 rating on the Carrollton – Sunnyside 138 kV line AEP (100%) Perform a sag study to improve the emergency b1974 rating on the Bethel Church -West Dover 138 kV line AEP (100%) Replace a switch at South b1975 Millersburg switch station AEP (100%) ATSI (37.04%) / AEP (34.35%) / DL (10.41%) / Dominion (6.19%) Reconductor or rebuild / APS (3.94%) / PENELEC Sporn - Waterford b2017 (3.09%) / JCPL (1.39%) / Dayton Muskingum River 345 kV (1.20%) / Neptune* (0.14%) / line HTP (0.09%) / ECP** (0.08%) / PSEG (2.00%) / RE (0.08%) ATSI (58.58%) / AEP (14.16%) / Loop Conesville - Bixby 345 APS (12.88%) / DL (7.93%) / b2018 kV circuit into Ohio Central PENELEC (5.73%) / Dayton (0.72%)AEP (93.74%) / APS (4.40%) / Establish Burger 345/138 kV DL (1.11%) / ATSI (0.74%) / b2019 station PENELEC (0.01%) AEP (88.39%) / APS (7.12%) / Rebuild Amos - Kanawah b2020 ATSI (2.89%) / DEOK (1.58%) / River 138 kV corridor PEPCO (0.02%) AEP (91.92%) / DEOK (3.60%) / Add 345/138 transformer at APS (2.19%) / ATSI (1.14%) / b2021 Sporn, Kanawah River & DL (1.08%) / PEPCO (0.04%) / Muskingum River stations BGE (0.03%) Replace Kanawah 138 kV b2021.1 breaker 'L' AEP (100%) Replace Muskingum 138 kV b2021.2 breaker 'HG' AEP (100%)

^{*}Neptune Regional Transmission System, LLC

^{**}East Coast Power, L.L.C.

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Muskingum 138 b2021.3 kV breaker 'HJ' AEP (100%) Replace Muskingum 138 b2021.4 kV breaker 'HE' AEP (100%) Replace Muskingum 138 b2021.5 kV breaker 'HD' AEP (100%) Replace Muskingum 138 b2021.6 kV breaker 'HF' AEP (100%) Replace Muskingum 138 b2021.7 kV breaker 'HC' AEP (100%) Replace Sporn 138 kV b2021.8 breaker 'D1' AEP (100%) Replace Sporn 138 kV b2021.9 breaker 'D2' AEP (100%) Replace Sporn 138 kV b2021.10 breaker 'F1' AEP (100%) Replace Sporn 138 kV b2021.11 breaker 'F2' AEP (100%) Replace Sporn 138 kV b2021.12 breaker 'G' AEP (100%) Replace Sporn 138 kV b2021.13 breaker 'G2' AEP (100%) Replace Sporn 138 kV b2021.14 breaker 'N1' AEP (100%) Replace Kanawah 138 kV b2021.15 breaker 'M' AEP (100%) Terminate Tristate - Kyger b2022 Creek 345 kV line at Sporn AEP (97.99%) / DEOK (2.01%) Perform a sag study of the b2027 Tidd - Collier 345 kV line AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Perform a sag study on East b2028 Lima - North Woodcock 138 kV line to improve the rating AEP (100%) Perform a sag study on b2029 Bluebell - Canton Central 138 kV line to improve the rating AEP (100%) Install 345 kV circuit b2030 breakers at West Bellaire AEP (100%) Sag study on Tilton - W. Bellaire section 1 (795 b2031 ACSR), about 12 miles AEP (100%) Rebuild 138 kV Elliot tap -ATSI (73.02%) / Dayton b2032 Poston line (19.39%) / DL (7.59%) Perform a sag study of the b2033 Brues - W. Bellaire 138 kV AEP (100%) Adjust tap settings for b2046 Muskingum River transformers AEP (100%) b2047 Replace relay at Greenlawn AEP (100%) Replace both 345/138 kV transformers with one bigger b2048 transformer AEP (92.49%) / Dayton (7.51%) b2049 Replace relay AEP (100%) b2050 Perform sag study AEP (100%) Install 3 138 kV breakers and b2051 a circuit switcher at Dorton station AEP (100%) AEP (67.17%) / ATSI (27.37%) / b2052 Replace transformer Dayton (3.73%) / PENELEC (1.73%)Perform a sag study of Sporn b2054 - Rutland 138 kV line AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace George Washington b2069 138 kV breaker 'A' with 63kA rated breaker AEP (100%) Replace Harrison 138 kV breaker '6C' with 63kA rated b2070 breaker AEP (100%) Replace Lincoln 138 kV b2071 breaker 'L' with 63kA rated breaker AEP (100%) Replace Natrum 138 kV b2072 breaker 'I' with 63kA rated breaker AEP (100%) Replace Darrah 138 kV b2073 breaker 'B' with 63kA rated AEP (100%) Replace Wyoming 138 kV breaker 'G' with 80kA rated b2074 breaker AEP (100%) Replace Wyoming 138 kV b2075 breaker 'G1' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV b2076 breaker 'G2' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV breaker 'H' with 80kA rated b2077 breaker AEP (100%) Replace Wyoming 138 kV b2078 breaker 'H1' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV b2079 breaker 'H2' with 80kA rated breaker AEP (100%) Replace Wyoming 138 kV b2080 breaker 'J' with 80kA rated breaker AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Wyoming 138 kV breaker 'J1' with 80kA rated b2081 breaker AEP (100%) Replace Wyoming 138 kV breaker 'J2' with 80kA rated b2082 breaker AEP (100%) Replace Natrum 138 kV breaker 'K' with 63kA rated b2083 breaker AEP (100%) Replace Tanner Creek 345 b2084 kV breaker 'P' with 63kA rated breaker AEP (100%) Replace Tanner Creek 345 kV breaker 'P2' with 63kA b2085 rated breaker AEP (100%) Replace Tanner Creek 345 kV breaker 'O1' with 63kA b2086 rated breaker AEP (100%) Replace South Bend 138 kV b2087 breaker 'T' with 63kA rated breaker AEP (100%) Replace Tidd 138 kV breaker b2088 'L' with 63kA rated breaker AEP (100%) Replace Tidd 138 kV breaker b2089 'M2' with 63kA rated breaker AEP (100%) Replace McKinley 138 kV b2090 breaker 'A' with 40kA rated breaker AEP (100%) Replace West Lima 138 kV breaker 'M' with 63kA rated b2091 breaker AEP (100%) Replace George Washington 138 kV breaker 'B' with 63kA b2092 rated breaker AEP (100%)

^{*}Neptune Regional Transmission System, LLC

Required Transmission Enhancements Annual Revenue Requirement Responsible Customer(s) Replace Turner 138 kV b2093 breaker 'W' with 63kA rated breaker AEP (100%) Build a new 138 kV line from Falling Branch to Merrimac b2135 and add a 138/69 kV transformer at Merrimac Station AEP (100%) Add a fourth circuit breaker to the station being built for the U4-038 project b2160 (Conelley), rebuild U4-038 -Grant Tap line as double circuit tower line AEP (100%) Rebuild approximately 20 miles of the Allen - S073 double circuit 138 kV line (with one circuit from Allen b2161 Tillman - Timber Switch -S073 and the other circuit from Allen - T-131 - S073) utilizing 1033 ACSR AEP (100%) Perform a sag study to improve the emergency rating b2162 of the Belpre - Degussa 138 kV line AEP (100%) Replace breaker and wavetrap b2163 at Jay 138 kV station

AEP (100%)

^{*}Neptune Regional Transmission System, LLC

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 Kentucky Transmission Company, Inc.; AEP Ohio Transmission Company, Inc.; AEP West Virginia Transmission Company, Inc.; Appalachian Power Company; Indiana Michigan Power Company; Kentucky Power Company; Kingsport Power Company; Ohio Power Company and Wheeling Power Company

| Required 11 | ansimission Emianeements Anni | iai Revenue Requirement | responsible edisioner(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 | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: Dayton (8.37%) / DEOK (21.94%) / Dominion (56.40%) / EKPC (13.29%) |

^{*}Neptune Regional Transmission System, LLC

| Required Tra | insmission Enhancements Annu | ial Revenue Requirement | Responsible Customer(s) |
|--------------|------------------------------|-------------------------|--|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | | | DEOK (3.23%) / DL (1.73%) / |
| | | | DPL (2.65%) / Dominion |
| | | | (13.03%) / EKPC (1.77%) / |
| | Reconductor the AEP | | JCPL (3.84%) / ME (1.93%) / |
| b1797.1 | portion of the Cloverdale - | | NEPTUNE* (0.45%) / OVEC |
| 01/9/.1 | Lexington 500 kV line with | | (0.07%) / PECO (5.29%) / |
| | 2-1780 ACSS | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | |
| | | | DFAX Allocation: AEP (0.79%) / APS (53.70%) / Dayton (0.15%) / DEOK |
| | | | |
| | | | (0.40%) / Dominion (1.13%) / |
| | | | EKPC (0.23%) / PEPCO |
| | | | (43.60%) |
| b2055 | Upgrade relay at Brues | | AEP (100%) |
| 02033 | station | | 71L1 (10070) |
| | Upgrade terminal | | |
| | equipment at Howard on | | |
| b2122.3 | the Howard - Brookside | | AEP (100%) |
| | 138 kV line to achieve | | |
| | ratings of 252/291 (SN/SE) | | |
| | Perform a sag study on the | | |
| b2122.4 | Howard - Brookside 138 | | AEP (100%) |
| | kV line | | |
| b2229 | Install a 300 MVAR | | AEP (100%) |
| 02227 | reactor at Dequine 345 kV | | ALI (10070) |

^{*}Neptune Regional Transmission System, LLC

| Kequileu 11 | ansmission Ennancements Annu | iai Revenue Requirement | Responsible Customer(s) |
|-------------|------------------------------|-------------------------|---|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | Replace existing 150 | | DEOK (3.23%) / DL (1.73%) / |
| | MVAR reactor at Amos 765 | | DPL (2.65%) / Dominion |
| b2230 | kV substation on Amos - N. | | (13.03%) / EKPC (1.77%) / |
| 02230 | Proctorville - Hanging Rock | | JCPL (3.84%) / ME (1.93%) / |
| | with 300 MVAR reactor | | NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / |
| | With 500 W VI W ICactor | | |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| | Install 765 kV reactor | | AEP (100%) |
| b2231 | breaker at Dumont 765 kV | | |
| 02201 | substation on the Dumont - | | |
| | Wilton Center line | | |
| | Install 765 kV reactor | | |
| 1.0000 | breaker at Marysville 765 | | AED (1000) |
| b2232 | kV substation on the | | AEP (100%) |
| | Marysville - Maliszewski | | |
| | line | | |
| 1-2222 | Change transformer tap | | AED (1000() |
| b2233 | settings for the Baker | | AEP (100%) |
| | 765/345 kV transformer | | |
| | Loop the North Muskingum | | |
| | - Crooksville 138 kV line | | |
| b2252 | into AEP's Philo 138 kV | | AEP (100%) |
| | station which lies | | (, |
| | approximately 0.4 miles | | |
| | from the line | | |

^{*}Neptune Regional Transmission System, LLC

| | | 1 | 1 |
|-------|---|---|------------|
| b2253 | Install an 86.4 MVAR capacitor bank at Gorsuch | | AEP (100%) |
| | 138 kV station in Ohio | | (|
| | Rebuild approximately 4.9 | | |
| b2254 | miles of Corner - Degussa | | AEP (100%) |
| | 138 kV line in Ohio | | , , |
| | Rebuild approximately 2.8 | | |
| b2255 | miles of Maliszewski - | | AEP (100%) |
| | Polaris 138 kV line in Ohio | | |
| | Upgrade approximately 36 | | |
| | miles of 138 kV through | | |
| b2256 | path facilities between | | AEP (100%) |
| | Harrison 138 kV station and | | |
| | Ross 138 kV station in Ohio | | |
| | Rebuild the Pokagon - | | |
| | Corey 69 kV line as a | | |
| | double circuit 138 kV line | | |
| b2257 | with one side at 69 kV and | | AEP (100%) |
| | the other side as an express | | |
| | circuit between Pokagon | | |
| | and Corey stations | | |
| | Rebuild 1.41 miles of #2 | | |
| | CU 46 kV line between | | |
| b2258 | Tams Mountain - Slab Fork | | AEP (100%) |
| | to 138 kV standards. The | | |
| | line will be strung with | | |
| | 1033 ACSR | | |
| | Install a new 138/69 kV | | |
| | transformer at George | | |
| b2259 | Washington 138/69 kV | | AEP (100%) |
| | substation to provide support to the 69 kV system | | |
| | in the area | | |
| | Rebuild 4.7 miles of | | |
| | Muskingum River - Wolf | | |
| b2286 | Creek 138 kV line and | | AEP (100%) |
| 02200 | remove the 138/138 kV | | 1100/0) |
| | transformer at Wolf Creek | | |
| | transformer at 1, on Steek | | |

| Station | |
|---------|--|
| | |

| 110000000000000000000000000000000000000 | | responsible contonion(s) |
|---|--|--------------------------|
| b2287 | Loop in the Meadow Lake - Olive 345 kV circuit into Reynolds 765/345 kV station | AEP (100%) |
| b2344.1 | Establish a new 138/12 kV station, transfer and consolidate load from its Nicholsville 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 Nicholsville 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%) |

| Required 11 | ansmission Emiancements – Annuai Nevenue Nequii | ement Responsible Customer(s) |
|-------------|---|-------------------------------|
| b2345.2 | Rebuild the 34.5 kV lines between Keeler - Sister Lakes and Glenwood tap switch to 69 kV (~12 miles) | AEP (100%) |
| 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 | AEP (100%) |

| circuit | |
|---------|--|
| | |

| required 11 | ansimission 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%) |

| Required 11 | ansmission Ennancements Annu | iai 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 | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: AEP (100%) |

| Required 11 | ansmission Enhancements Annu | ial Revenue Requirement | Responsible Customer(s) |
|-------------|---|-------------------------|-------------------------|
| b2444 | Willow - Eureka 138 kV line: Reconductor 0.26 mile | | AEP (100%) |
| 92 | of 4/0 CU with 336 ACSS | | (10070) |
| 1-0445 | Complete a sag study of | | AED (1000/) |
| b2445 | Tidd - Mahans Lake 138 kV line | | AEP (100%) |
| | Rebuild the 7-mile 345 kV | | |
| b2449 | line between Meadow Lake | | AEP (100%) |
| 02119 | and Reynolds 345 kV | | 1121 (10070) |
| | stations Add two 138 kV circuit | | |
| | breakers at Fremont station | | |
| b2462 | to fix tower contingency | | AEP (100%) |
| | '408_2' | | |
| | Construct a new 138/69 kV | | |
| | Yager station by tapping 2- | | |
| b2501 | 138 kV FE circuits | | AEP (100%) |
| | (Nottingham-Cloverdale, Nottingham-Harmon) | | |
| | Build a new 138 kV line | | |
| b2501.2 | from new Yager station to | | AEP (100%) |
| | Azalea station | | (/ |
| | Close the 138 kV loop back | | |
| b2501.3 | into Yager 138 kV by | | AEP (100%) |
| | converting part of local 69 | | (, |
| | kV facilities to 138 kV Build 2 new 69 kV exits to | | |
| | reinforce 69 kV facilities | | |
| 1-2501 4 | and upgrade conductor | | AED (1000/) |
| b2501.4 | between Irish Run 69 kV | | AEP (100%) |
| | Switch and Bowerstown 69 | | |
| | kV Switch | | |

| | iai Revenue Requirement | Responsible Customer(s) |
|-----------------------------|--|---|
| Construct new 138 kV | | |
| switching station | | |
| Nottingham tapping 6-138 | | |
| kV FE circuits (Holloway- | | |
| Brookside, Holloway- | | |
| Harmon #1 and #2, | | AEP (100%) |
| Holloway-Reeds, | | |
| Holloway-New Stacy, | | |
| Holloway-Cloverdale). Exit | | |
| a 138 kV circuit from new | | |
| station to Freebyrd station | | |
| Convert Freebyrd 69 kV to | | AEP (100%) |
| 138 kV | | ALI (10070) |
| Rebuild/convert Freebyrd- | | |
| South Cadiz 69 kV circuit | | AEP (100%) |
| to 138 kV | | |
| Upgrade South Cadiz to 138 | | AED (100%) |
| kV breaker and a half | | AEP (100%) |
| Replace the Sporn 138 kV | | |
| breaker 'G1' with 80kA | | AEP (100%) |
| breaker | | |
| Replace the Sporn 138 kV | | |
| breaker 'D' with 80kA | | AEP (100%) |
| breaker | | |
| Replace the Sporn 138 kV | | |
| breaker 'O1' with 80kA | | AEP (100%) |
| breaker | | |
| Replace the Sporn 138 kV | | |
| breaker 'P2' with 80kA | | AEP (100%) |
| breaker | | |
| Replace the Sporn 138 kV | | |
| breaker 'U' with 80kA | | AEP (100%) |
| breaker | | |
| Replace the Sporn 138 kV | | |
| breaker 'O' with 80 kA | | AEP (100%) |
| breaker | | |
| | 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 Convert Freebyrd 69 kV to 138 kV Rebuild/convert Freebyrd- South Cadiz 69 kV circuit to 138 kV Upgrade South Cadiz to 138 kV breaker and a half Replace the Sporn 138 kV breaker 'G1' with 80kA breaker Replace the Sporn 138 kV breaker 'D' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'P2' with 80kA breaker Replace the Sporn 138 kV breaker 'U' with 80kA breaker Replace the Sporn 138 kV | 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 Convert Freebyrd 69 kV to 138 kV Rebuild/convert Freebyrd- South Cadiz 69 kV circuit to 138 kV Upgrade South Cadiz to 138 kV breaker and a half Replace the Sporn 138 kV breaker 'G1' with 80kA breaker Replace the Sporn 138 kV breaker 'O' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'O1' with 80kA breaker Replace the Sporn 138 kV breaker 'P2' with 80kA breaker Replace the Sporn 138 kV breaker 'U' with 80kA breaker |

| required 11 | ansmission Enhancements Annu | iai 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%) |

| Construct a new 69 kV line | |
|---|--|
| approximately 2.5 miles from Colfax to Drewry's. | |
| b2591 Construct a new Drewry's AEP (100%) | |
| station and install a new | |
| circuit breaker at Colfax | |
| station. | |
| Rebuild existing East | |
| Coshocton – North | |
| Coshocton double circuit | |
| line which contains | |
| b2592 Newcomerstown – N. AEP (100%) | |
| Coshocton 34.5 kV Circuit | |
| and Coshocton – North | |
| Coshocton 69 kV circuit | |
| Rebuild existing West | |
| Bellaire – Glencoe 69 kV | |
| line with 138 kV & 69 kV | |
| b2593 Mile With 136 KV & 69 KV circuits and install 138/69 AEP (100%) | |
| kV transformer at Glencoe | |
| Switch | |
| Rebuild 1.0 mile of | |
| Brantley – Bridge Street 69 | |
| b2594 Braintey = Bridge Street 67 AEP (100%) | |
| overhead conductor | |
| Rebuild 7.82 mile Elkhorn | |
| b2595.1 City – Haysi S.S 69 kV line AEP (100%) | |
| b2595.1 City Traysi 5.5 67 k V line utilizing 1033 ACSR built AEP (100%) | |
| to 138 kV standards | |
| Rebuild 5.18 mile Moss – | |
| b2595.2 Haysi SS 69 kV line AEP (100%) | |
| b2595.2 utilizing 1033 ACSR built AEP (100%) | |
| to 138 kV standards | |
| Move load from the 34.5 | |
| kV bus to the 138 kV bus | |
| b2596 by installing a new 138/12 AEP (100%) | |
| kV XF at New Carlisle | |
| station in Indiana | |

| Required 11 | | iai Kevenue Kequitement | Responsible Customer(s) |
|------------------------------------|---|-------------------------|-------------------------|
| | Rebuild approximately 1 | | |
| | mi. section of Dragoon- | | |
| | _ | | |
| | between Dragoon and | | |
| b2597 | <u> </u> | | AEP (100%) |
| | | | |
| | MOAB to increase thermal | | |
| | capability of Dragoon- | | |
| | <u> </u> | | |
| | 11 | | |
| | mile section of the Kline- | | |
| | Virgil Street 34.5 kV line | | |
| b2598 | between Kline and Virgil | | AEP (100%) |
| 02370 | Street tap. Replace MOAB | | ALI (10070) |
| | _ | | |
| | · · | | |
| | Š | | |
| | 1.1 | | |
| b2599 | miles of 69 kV line between | | AEP (100%) |
| | between Dragoon and Dodge Tap switch and replace Dodge switch MOAB to increase thermal capability of Dragoon- Dodge Tap branch 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. Rebuild approximately 0.1 miles of 69 kV line between Albion and Albion tap Rebuild Fremont – Pound line as 138 kV Fremont Station Improvements Replace MOAB towards Beaver Creek with 138 kV breaker Replace MOAB towards Clinch River with 138 kV breaker Replace 138 kV Breaker A with new bus-tie breaker Re-use Breaker A as high side protection on transformer #1 Install two (2) circuit | | |
| b2600 | | | AEP (100%) |
| 02000 | line as 138 kV | | ALI (100%) |
| b2601 | Fremont Station | | AEP (100%) |
| 02001 | Improvements | | ALI (10070) |
| | Replace MOAB towards | | |
| b2601.1 | Beaver Creek with 138 kV | | AEP (100%) |
| | 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 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. Rebuild approximately 0.1 miles of 69 kV line between Albion and Albion tap Bebuild Fremont – Pound line as 138 kV Fremont Station Improvements Replace MOAB towards Beaver Creek with 138 kV breaker Replace MOAB towards Clinch River with 138 kV breaker Replace 138 kV Breaker A with new bus-tie breaker Re-use Breaker A as high side protection on transformer #1 Install two (2) circuit switchers on high side of | | |
| | | | |
| b2601.2 | Clinch River with 138 kV | | AEP (100%) |
| b2599 b2600 b2601 b2601.1 | | | |
| h2601 3 | Replace 138 kV Breaker A | | AEP (100%) |
| 02001.3 | with new bus-tie breaker | | ALI (10070) |
| | Re-use Breaker A as high | | |
| b2601.4 | | | AEP (100%) |
| | transformer #1 | | |
| | Install two (2) circuit | | |
| b2601.5 | | | AEP (100%) |
| | transformers # 2 and 3 at | | |
| | | | |

| Fremont Station | |
|-----------------|--|
| | |

| rtequired 11. | ansimission Emiancements Ami | iai ite venae itequirement | Responsible Customer(s) |
|---------------|--|----------------------------|-------------------------|
| b2602.1 | Install 138 kV breaker E2 at | | AEP (100%) |
| | North Proctorville | | . , |
| 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%) |

| required 11 | | iai icvenue requirement | Responsible Customer(s) |
|-------------|-----------------------------|-------------------------|-------------------------|
| | Rebuild and reconductor | | |
| | Kammer – George | | |
| | Washington 69 kV circuit | | |
| | and George Washington – | | |
| b2605 | Moundsville ckt #1, | | AEP (100%) |
| | designed for 138kV. | | |
| | Upgrade limiting equipment | | |
| | at remote ends and at tap | | |
| | stations | | |
| | Convert Bane – | | |
| b2606 | Hammondsville from 23 kV | | AEP (100%) |
| | to 69 kV operation | | |
| b2607 | Pine Gap Relay Limit | | AED (1000/) |
| 02007 | Increase | | AEP (100%) |
| b2608 | Richlands Relay Upgrade | | AEP (100%) |
| 02000 | . 10 | | ALI (10070) |
| | Thorofare – Goff Run – | | |
| b2609 | Powell Mountain 138 kV | | AEP (100%) |
| | Build | | |
| b2610 | Rebuild Pax Branch – | | AEP (100%) |
| 02010 | Scaraboro as 138 kV | | 71L1 (10070) |
| b2611 | Skin Fork Area | | AEP (100%) |
| 02011 | Improvements | | ALF (100%) |
| | New 138/46 kV station near | | |
| b2611.1 | Skin Fork and other | | AEP (100%) |
| | components | | |
| | Construct 3.2 miles of 1033 | | |
| | ACSR double circuit from | | |
| b2611.2 | new Station to cut into | | AEP (100%) |
| | Sundial-Baileysville 138 kV | | • |
| | line | | |
| | Replace metering BCT on | | |
| | Tanners Creek CB T2 with | | |
| | a slip over CT with higher | | |
| b2634.1 | thermal rating in order to | | AEP (100%) |
| | remove 1193 MVA limit on | | , , |
| | facility (Miami Fort- | | |
| | Tanners Creek 345 kV line) | | |
| • | | L | |

| Required 11 | ansmission Ennancements Annu | iai Revenue Requirement | Responsible Customer(s) |
|-------------|--|-------------------------|-------------------------|
| b2643 | Replace the Darrah 138 kV breaker 'L' with 40kA 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 (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%) |

| rtequired III | distribution Lindrice Terms Time | uai revenue requirement | Responsible Customer(s) |
|---------------|--|-------------------------|------------------------------|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | | BGE (4.36%) / ComEd |
| | | | (13.14%) / Dayton (2.15%) / |
| | | | DEOK (3.23%) / DL (1.73%) / |
| | Install o + / 450 MVAD | | DPL (2.65%) / Dominion |
| L2697 1 | Install a +/- 450 MVAR SVC at Jacksons Ferry 765 kV substation | | (13.03%) / EKPC (1.77%) / |
| 02087.1 | | | JCPL (3.84%) / ME (1.93%) / |
| | | | NEPTUNE* (0.45%) / OVEC |
| | | | (0.07%) / PECO (5.29%) / |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |

^{*}Neptune Regional Transmission System, LLC

| Required Tr | ansmission Enhancements Annu | ial Revenue Requirement | Responsible Customer(s) |
|-------------|------------------------------|--|---|
| | | | Load-Ratio Share Allocation: |
| | | | AEC (1.71%) / AEP (14.04%) / |
| | | | APS (5.61%) / ATSI (8.10%) / |
| | | AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: AEP (100%) | |
| | | | Load-Ratio Share Allocation: AEC (1.71%) / AEP (14.04%) / APS (5.61%) / ATSI (8.10%) / BGE (4.36%) / ComEd (13.14%) / Dayton (2.15%) / DEOK (3.23%) / DL (1.73%) / DPL (2.65%) / Dominion (13.03%) / EKPC (1.77%) / JCPL (3.84%) / ME (1.93%) / NEPTUNE* (0.45%) / OVEC (0.07%) / PECO (5.29%) / PENELEC (1.89%) / PEPCO (3.82%) / PPL (4.72%) / PSEG (6.21%) / RE (0.26%) DFAX Allocation: AEP (100%) |
| | Install a 300 MVAR shunt | | DEOK (3.23%) / DL (1.73%) / |
| | line reactor on the | | DPL (2.65%) / Dominion |
| b2687.2 | Broadford end of the | | (13.03%) / EKPC (1.77%) / |
| 02087.2 | Broadford – Jacksons Ferry | | JCPL (3.84%) / ME (1.93%) / |
| | 765 kV line | | NEPTUNE* (0.45%) / OVEC |
| | 703 K V IIIIE | | ` ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' |
| | | | PENELEC (1.89%) / PEPCO |
| | | | (3.82%) / PPL (4.72%) / PSEG |
| | | | (6.21%) / RE (0.26%) |
| | | | DFAX Allocation: |
| | | | AEP (100%) |
| | Mitigate violations | | |
| | identified by sag study to | | |
| | operate Fieldale-Thornton- | | |
| b2697.1 | Franklin 138 kV overhead | | ΔED (100%) |
| 02077.1 | line conductor at its max. | | ALI (100%) |
| | operating temperature. 6 | | |
| | potential line crossings to | | |
| | be addressed. | | |
| | Replace terminal equipment | | |
| | at AEP's Danville and East | | |
| b2697.2 | Danville substations to | | AEP (100%) |
| 02071.2 | improve thermal capacity of | | ALI (10070) |
| | Danville – East Danville | | |
| | 138 kV circuit | | |

^{*}Neptune Regional Transmission System, LLC

| Required 11 | ansmission Enhancements Annua | al Revenue Requirement | Responsible Customer(s) |
|-------------|-------------------------------|------------------------|-------------------------|
| | Replace relays at AEP's | | |
| | Cloverdale and Jackson's | | |
| b2698 | Ferry substations to improve | | AEP (100%) |
| 02070 | the thermal capacity of | | (100/0) |
| | Cloverdale – Jackson's Ferry | | |
| | 765 kV line | | |
| | Construct Herlan station as | | |
| | breaker and a half | | |
| b2701.1 | configuration with 9-138 kV | | AEP (100%) |
| | CB's on 4 strings and with 2- | | |
| | 28.8 MVAR capacitor banks | | |
| | Construct new 138 kV line | | |
| | from Herlan station to Blue | | |
| b2701.2 | Racer station. Estimated | | AED (1000/) |
| 02/01.2 | approx. 3.2 miles of 1234 | | AEP (100%) |
| | ACSS/TW Yukon and | | |
| | OPGW | | |
| | Install 1-138 kV CB at Blue | | |
| 2701.3 | Racer to terminate new | | AEP (100%) |
| | Herlan circuit | | |
| | Rebuild/upgrade line | | |
| b2714 | between Glencoe and | | AEP (100%) |
| | Willow Grove Switch 69 kV | | |
| | Build approximately 11.5 | | |
| | miles of 34.5 kV line with | | |
| L0715 | 556.5 ACSR 26/7 Dove | | AED (1000/) |
| b2715 | conductor on wood poles | | AEP (100%) |
| | from Flushing station to | | |
| | Smyrna station | | |
| | Replace the South Canton | | |
| b2727 | 138 kV breakers 'K', 'J', | | AED (1000/) |
| | 'J1', and 'J2' with 80kA | | AEP (100%) |
| | breakers | | |

| required 11 | | ii Revenue Requirement | Responsible Customer(s) |
|-------------|--|------------------------|-------------------------|
| | Convert the Sunnyside – East Sparta – Malvern 23 kV | | |
| b2731 | sub-transmission network to | | AEP (100%) |
| | 69 kV. The lines are already | | , , |
| | built to 69 kV standards | | |
| | Replace South Canton 138 | | |
| b2733 | kV breakers 'L' and 'L2' | | AEP (100%) |
| | with 80 kA rated breakers | | |
| | Retire Betsy Layne | | |
| | 138/69/43 kV station and | | |
| b2750.1 | replace it with the greenfield | | AEP (100%) |
| 02,0011 | Stanville station about a half | | 1121 (100,0) |
| | mile north of the existing | | |
| | Betsy Layne station | | |
| | Relocate the Betsy Layne | | |
| b2750.2 | capacitor bank to the Stanville 69 kV bus and | | AED (1000/) |
| b2750.2 | increase the size to 14.4 | | AEP (100%) |
| | MVAR | | |
| | Replace existing George | | |
| | Washington station 138 kV | | |
| | yard with GIS 138 kV | | |
| 1.0550.4 | breaker and a half yard in | | A FID (4000()) |
| b2753.1 | existing station footprint. | | AEP (100%) |
| | Install 138 kV revenue | | |
| | metering for new IPP | | |
| | connection | | |
| | Replace Dilles Bottom 69/4 | | |
| b2753.2 | kV Distribution station as | | |
| | breaker and a half 138 kV | | |
| | yard design including AEP | | AEP (100%) |
| | Distribution facilities but | | 1111 (10070) |
| | initial configuration will | | |
| | constitute a 3 breaker ring | | |
| | bus | | |

| required 11 | ansmission Ennancements Annua | a Revenue Requirement | Responsible Customer(s) |
|-------------|--------------------------------|-----------------------|-------------------------|
| | Connect two 138 kV 6-wired | | |
| | circuits from "Point A" | | |
| | (currently de-energized and | | |
| | owned by FirstEnergy) in | | |
| b2753.3 | circuit positions previously | | AEP (100%) |
| 02733.3 | designated Burger #1 & | | 71L1 (10070) |
| | Burger #2 138 kV. Install | | |
| | interconnection settlement | | |
| | metering on both circuits | | |
| | exiting Holloway | | |
| | Build double circuit 138 kV | | |
| | line from Dilles Bottom to | | |
| | "Point A". Tie each new | | |
| | AEP circuit in with a 6-wired | | |
| b2753.6 | line at Point A. This will | | AEP (100%) |
| | create a Dilles Bottom – | | |
| | Holloway 138 kV circuit and | | |
| | a George Washington – | | |
| | Holloway 138 kV circuit | | |
| | Retire line sections (Dilles | | |
| | Bottom – Bellaire and | | |
| | Moundsville – Dilles Bottom | | |
| | 69 kV lines) south of | | |
| b2753.7 | FirstEnergy 138 kV line | | AEP (100%) |
| 02/33.7 | corridor, near "Point A". Tie | | AEF (100%) |
| | George Washington – | | |
| | Moundsville 69 kV circuit to | | |
| | George Washington – West | | |
| | Bellaire 69 kV circuit | | |
| | Rebuild existing 69 kV line | | |
| b2753.8 | as double circuit from | | |
| | George Washington – Dilles | | |
| | Bottom 138 kV. One circuit | | AEP (100%) |
| | will cut into Dilles Bottom | | ALF (100%) |
| | 138 kV initially and the other | | |
| | will go past with future plans | | |
| | to cut in | | |

| Kequileu 11 | ansmission Ennancements Annua | 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%) |
| b2761.1 | Replace the Hazard 161/138 kV transformer | | 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 – Wooton 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 (100%) |
| b2777 | Reconductor the entire Dequine – Eugene 345 kV circuit #1 | | EKPC (100%) |
| b2779.1 | Construct a new 138 kV station, Campbell Road, tapping into the Grabill – South Hicksville138 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%) |

| required Tre | ansimission Emancements Aminual | 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%) |
| 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%) |
| 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%) |
|---------|---|------------|
| 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%) |

| rtequired III | distinssion Lindicentents 1 | minaar revenae reganen | ient responsible editioner(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%) |

| | • | _ | <u> </u> |
|---------|--------------------------------|----------|--------------|
| | Rebuild 12 miles of Valley – | | |
| | Almena 69 kV line as a | | |
| | double circuit 138/69 kV line | | |
| b2799.1 | using 795 ACSR conductor | | AEP (100%) |
| 02777.1 | (360 MVA rating) to | | ALI (100%) |
| | introduce a new 138 kV | | |
| | source into the 69 kV load | | |
| | pocket around Almena station | | |
| | Rebuild 3.2 miles of Almena | | |
| b2799.2 | to Hartford 69 kV line using | | AEP (100%) |
| 02177.2 | 795 ACSR conductor (90 | | ALI (100%) |
| | MVA rating) | | |
| | Rebuild 3.8 miles of | | |
| b2799.3 | Riverside – South Haven 69 | | AEP (100%) |
| 02177.3 | kV line using 795 ACSR | | 71L1 (10070) |
| | conductor (90 MVA rating) | | |
| | At Valley station, add new | | |
| | 138 kV line exit with a 3000 | | |
| b2799.4 | A 40 kA breaker for the new | | AEP (100%) |
| 02199.4 | 138 kV line to Almena and | | ALI (100%) |
| | replace CB D with a 3000 A | | |
| | 40 kA breaker | | |
| | At Almena station, install a | | |
| | 90 MVA 138/69 kV | | |
| b2799.5 | transformer with low side | | AEP (100%) |
| 02199.3 | 3000 A 40 kA breaker and | | ALI (100%) |
| | establish a new 138 kV line | | |
| | exit towards Valley | | |
| | At Hartford station, install a | | |
| | second 90 MVA 138/69 kV | | |
| b2799.6 | transformer with a circuit | | AEP (100%) |
| | switcher and 3000 A 40 kA | | |
| | low side breaker | | |

| Required 11 | ansimission Emiancements | Annual Revenue Requiren | nent Responsible Customer(s) |
|-------------|-------------------------------|-------------------------|------------------------------|
| | Replace Delaware 138 kV | | |
| b2817 | breaker 'P' with a 40 kA | | AEP (100%) |
| | breaker | | |
| | Replace West Huntington 138 | | |
| b2818 | kV breaker 'F' with a 40 kA | | AEP (100%) |
| | breaker | | |
| | Replace Madison 138 kV | | |
| b2819 | breaker 'V' with a 63 kA | | AEP (100%) |
| | breaker | | |
| | Replace Sterling 138 kV | | |
| b2820 | breaker 'G' with a 40 kA | | AEP (100%) |
| | breaker | | |
| | Replace Morse 138 kV | | |
| b2821 | breakers '103', '104', '105', | | AED (1000/) |
| 02821 | and '106' with 63 kA | | AEP (100%) |
| | breakers | | |
| | Replace Clinton 138 kV | | |
| b2822 | breakers '105' and '107' with | | AEP (100%) |
| | 63 kA breakers | | |
| | Install 300 MVAR reactor at | | |
| b2826.1 | Ohio Central 345 kV | | AEP (100%) |
| | substation | | |

| 1 1 1 1 1 1 | T III 200 NATION | | (*) |
|-------------|--|--|--------------------------------|
| b2826.2 | Install 300 MVAR reactor at West Bellaire 345 kV | | AEP (100%) |
| | substation | | , |
| | Upgrade the Tanner Creek – | | DFAX Allocation: |
| b2831.1 | Miami Fort 345 kV circuit | | Dayton (61.71%) / DEOK |
| | (AEP portion) | | (37.68%) / OVEC (0.61%) |
| | Six wire the Kyger Creek – | | |
| b2832 | Sporn 345 kV circuits #1 and | | AED (1000/) |
| 02832 | #2 and convert them to one | | AEP (100%) |
| | circuit | | |
| | Reconductor the Maddox | | DFAX Allocation: |
| b2833 | Creek – East Lima 345 kV | | AEP (80.83%) / Dayton (18.73%) |
| 02033 | circuit with 2-954 ACSS | | / OVEC (0.44%) |
| | Cardinal conductor | | 7 0 1 1 2 (0.4470) |
| | Reconductor and string open | | |
| b2834 | position and sixwire 6.2 miles | | AEP (100%) |
| 02031 | of the Chemical – Capitol Hill | | 1121 (100/0) |
| | 138 kV circuit | | |
| | Replace the South Canton 138 | | 177 (100) |
| b2872 | kV breaker 'K2' with a 80 kA | | AEP (100%) |
| | breaker | | |
| | Replace the South Canton 138 | | 177 (1001) |
| b2873 | kV breaker "M" with a 80 kA | | AEP (100%) |
| | breaker 120 | | |
| 1.007.4 | Replace the South Canton 138 | | A ED (1000() |
| b2874 | kV breaker "M2" with a 80 | | AEP (100%) |
| | kA breaker | | |
| b2878 | Upgrade the Clifty Creek | | AEP (100%) |
| | 345 kV risers | | |
| | Rebuild approximately 4.77 | | |
| b2880 | miles of the Cannonsburg – | | A ED (1000) |
| | South Neal 69 kV line section | | AEP (100%) |
| | utilizing 795 ACSR | | |
| | conductor (90 MVA rating) | | |

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|---------|---|------------|
| b2881 | Rebuild ~1.7 miles of the Dunn Hollow – London 46 kV line section utilizing 795 26/7 ACSR conductor (58 | AEP (100%) |
| | MVA rating, non-conductor limited) | |
| 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%) |

| 110401110 | MISITING OF CITY CONTROL OF CONTR | T HILLIAND T TO TOTAL TOTAL | ment responsible editionier(s) |
|-----------|--|-----------------------------|--------------------------------|
| | Install a new Ironman Switch to serve a new delivery point | | |
| b2885.1 | requested by the City of | | AEP (100%) |
| | Jackson for a load increase | | |
| | request | | |
| | Install a new 138/69 kV | | |
| | station (Rhodes) to serve as a | | |
| b2885.2 | third source to the area to help | | AEP (100%) |
| | relieve overloads caused by | | |
| | the customer load increase | | |
| | Replace Coalton Switch with | | |
| b2885.3 | a new three breaker ring bus | | AEP (100%) |
| | (Heppner) | | |
| | Install 90 MVA 138/69 kV | | |
| | transformer, new transformer | | |
| b2886 | high and low side 3000 A 40 | | AEP (100%) |
| 02000 | kA CBs, and a 138 kV 40 kA | | 1121 (10070) |
| | bus tie breaker at West End | | |
| | Fostoria | | |
| | Add 2-138 kV CB's and | | |
| | relocate 2-138 kV circuit exits | | |
| b2887 | to different bays at Morse | | AEP (100%) |
| 02007 | Road. Eliminate 3 terminal | | 1221 (10070) |
| | line by terminating Genoa - | | |
| | Morse circuit at Morse Road | | |
| | Retire Poston substation. | | . == |
| b2888 | Install new Lemaster | | AEP (100%) |
| | substation | | |
| b2888.1 | Remove and retire the Poston | | AEP (100%) |
| 02000.1 | 138 kV station | | 1121 (10070) |
| | Install a new greenfield | | |
| b2888.2 | station, Lemaster 138 kV | | AEP (100%) |
| | Station, in the clear | | |

| 1100/0011000 111 | D 1 1 1 1 CO 1 V | | |
|------------------|--|--|------------|
| 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%) |

| Rebuild 23.55 miles of the East Cambridge – Smyrna b2890.1 34.5 kV circuit with 795 ACSR conductor (128 MVA rating) and convert to 69 kV East Cambridge: Install a | |
|--|---|
| b2890.1 34.5 kV circuit with 795 ACSR conductor (128 MVA rating) and convert to 69 kV East Cambridge: Install a | |
| ACSR conductor (128 MVA rating) and convert to 69 kV East Cambridge: Install a | |
| rating) and convert to 69 kV East Cambridge: Install a | |
| East Cambridge: Install a | |
| | |
| | |
| 2000 A 69 kV 40 kA circuit | |
| b2890.2 breaker for the East AEP (100%) | |
| Cambridge – Smyrna 69 kV | |
| circuit | |
| Old Washington: Install 69 | |
| b2890.3 kV 2000 A two way phase AEP (100%) | |
| over phase switch | |
| b2890.4 Install 69 kV 2000 A two way AEP (100%) | _ |
| b2890.4 phase over phase switch AEP (100%) | |
| Rebuild the Midland Switch | |
| to East Findlay 34.5 kV line | |
| b2891 (3.31 miles) with 795 ACSR AEP (100%) | |
| (63 MVA rating) to match | |
| other conductor in the area | |
| Install new 138/12 kV | |
| transformer with high side | |
| circuit switcher at Leon and a | |
| new 138 kV line exit towards | |
| b2892 Ripley. Establish 138 kV at AEP (100%) | |
| the Ripley station with a new AEP (100%) | |
| 138/69 kV 130 MVA | |
| transformer and move the | |
| distribution load to 138 kV | |
| service | |
| Rebuild approximately 6.7 | |
| miles of 69 kV line between | |
| Mottville and Pigeon River | |
| b2936.1 using 795 ACSR conductor AEP (100%) | |
| (129 MVA rating). New AEP (100%) | |
| construction will be designed | |
| to 138 kV standards but | |
| operated at 69 kV | |

| required 11 | ansimission Emiancements | Annual Revenue Require | ement 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%) |

| 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 Rebuild the Torrey – South Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR "Curlew" conductor and steel poles Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV broaker 'NI' with an 80kA breaker Replace South Canton 138 kV broaker 'NI' with an 80kA breaker Replace South Canton 138 kV broaker 'N2' with an 80kA breaker Rebuild 15.6 miles of Haviland - North Delphos 138 kV line Bood Bood Beconductor the Capitol Hill Coco 138 kV line section Line swaps at Muskingum 138 kV station Rebuild Ravenswood – Racine tap 69 kV line section (~15 miles) to 69 kV standards, utilizing 795 26/7 ACSR conductor | required 11 | ansimission Emiancements | 7 Miliaai 180 vende 180quilen | nent Responsible Customer(s) |
|--|-------------|-------------------------------|-------------------------------|------------------------------|
| b2988 breaker and associated substation works including switches, bus leads, control cable and new DICM | | * | | |
| Substation works including switches, bus leads, control cable and new DICM | b2988 | | | |
| Switches, bus leads, control cable and new DICM | | | | AEP (100%) |
| Cable and new DICM Rebuild the Torrey — South Gambrinus Switch — Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR 'Curlew' conductor and steel poles Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N' with an 80kA breaker Rebuild 15.6 miles of b3036 Haviland - North Delphos 138 kV line b3037 Upgrades at the Natrium substation AEP (100%) b3038 Reconductor the Capitol Hill - Coco 138 kV line section AEP (100%) AEP (100%) AEP (100%) Coco 138 kV station Rebuild Ravenswood Racine tap 69 kV line section Racine tap 69 kV line section Capitol Hill Capitol Hill Capitol Hill Rebuild Ravenswood Racine tap 69 kV line section AEP (100%) AEP (100%) Standards, utilizing 795 26/7 | | _ | | |
| Rebuild the Torrey — South Gambrinus Switch — Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR 'Curlew' conductor and steel poles | | | | |
| Gambrinus Switch Gambrinus Road 69 kV line section (1.3 miles) with 1033 ACSR 'Curlew' conductor and steel poles Replace South Canton 138 kV b3000 breaker 'N' with an 80kA breaker breaker 'N' with an 80kA breaker 'N' wit | | | | |
| Barrinus Road 69 kV line section (1.3 miles) with 1033 ACSR 'Curlew' conductor and steel poles Replace South Canton 138 kV b3000 breaker 'N' with an 80kA breaker breaker Replace South Canton 138 kV b3001 breaker 'N1' with an 80kA breaker 'N1' with an 80kA breaker 'N2' with an 80kA AEP (100%) breaker 'N2' with an 80kA breaker 'N2' with an | | _ | | |
| Section (1.3 miles) with 1033 ACSR 'Curlew' conductor and steel poles | | | | |
| Section (1.5 miles) with 1035 | b2993 | | | AEP (100%) |
| Band steel poles Replace South Canton 138 kV | | | | , , |
| Replace South Canton 138 kV breaker 'N' with an 80kA breaker | | | | |
| b3000 breaker 'N' with an 80kA breaker Replace South Canton 138 kV breaker 'N1' with an 80kA breaker Replace South Canton 138 kV breaker Replace South Canton 138 kV breaker 'N2' with an 80kA breaker Rebuild 15.6 miles of Haviland - North Delphos 138 kV line Upgrades at the Natrium substation B3038 Reconductor the Capitol Hill - Coco 138 kV line section Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | • | | |
| Breaker Replace South Canton 138 kV | 1 2000 | ± | | AED (1000() |
| Replace South Canton 138 kV breaker 'N1' with an 80kA breaker | 63000 | | | AEP (100%) |
| b3001 breaker 'N1' with an 80kA | | | | |
| Breaker Replace South Canton 138 kV breaker 'N2' with an 80kA breaker 'N2' with an 80kA breaker | 1 2001 | <u> </u> | | AED (1000() |
| Replace South Canton 138 kV breaker 'N2' with an 80kA breaker | 63001 | | | AEP (100%) |
| b3002 breaker 'N2' with an 80kA breaker Rebuild 15.6 miles of Haviland - North Delphos 138 kV line b3037 Upgrades at the Natrium substation B3038 Reconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | |
| Breaker Rebuild 15.6 miles of Haviland - North Delphos 138 KV line | 1 2002 | * | | A ED (1000() |
| Rebuild 15.6 miles of Haviland - North Delphos 138 kV line b3037 Upgrades at the Natrium substation Reconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | 63002 | | | AEP (100%) |
| b3036 Haviland - North Delphos 138 kV line b3037 Upgrades at the Natrium substation b3038 Reconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | |
| kV line b3037 Upgrades at the Natrium substation Bacconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | 1.000 | | | A ED (1000() |
| b3037 Upgrades at the Natrium substation Reconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood - Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | 63036 | | | AEP (100%) |
| b3037 Substation Reconductor the Capitol Hill Coco 138 kV line section Line swaps at Muskingum 138 kV station Rebuild Ravenswood – Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | |
| b3038 Reconductor the Capitol Hill - Coco 138 kV line section b3039 Line swaps at Muskingum 138 kV station Rebuild Ravenswood – Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | b3037 | 10 | | AEP (100%) |
| D3038 | | | | () |
| Line swaps at Muskingum AEP (100%) | b3038 | | | AEP (100%) |
| 138 kV station Rebuild Ravenswood – Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | (10070) |
| Rebuild Ravenswood – Racine tap 69 kV line section b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | b3039 | | | AEP (100%) |
| Bacine tap 69 kV line section (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | 71L1 (100%) |
| b3040.1 (~15 miles) to 69 kV standards, utilizing 795 26/7 | | | | |
| standards, utilizing 795 26/7 | b3040.1 | Racine tap 69 kV line section | | |
| | | | | AEP (100%) |
| ACSR conductor | | | | |
| Treat conductor | | ACSR conductor | | |

| | | ment responsible editioner(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%) |

| 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 40kA 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 40kA breakers for T1 and T2 | AEP (100%) |
| b3087.1 | Construct a new greenfield station to the west (approx. 1.5 miles) of the existing Fords Branch Station in the new Kentucky Enterprise Industrial Park. This station will consist of six 3000A 40kA 138 kV breakers laid out in a ring arrangement, two 30 MVA 138/34.5 kV transformers, and two 30 MVA 138/12 kV transformers. The existing Fords Branch Station will be retired | AEP (100%) |
| b3087.2 | Construct approximately 5 miles of new double circuit 138 kV line in order to loop the new Kewanee station into the existing Beaver Creek – Cedar Creek 138 kV circuit | AEP (100%) |

| | D 1 1 1111 | 1 | Terrient Responsible Customer(s) |
|---------|---------------------------------|---|----------------------------------|
| | Remote end work will be | | 177 (1001) |
| b3087.3 | required at Cedar Creek | | AEP (100%) |
| | Station | | |
| | Install 28.8 MVar switching | | |
| b3087.4 | shunt at the new Fords | | AEP (100%) |
| | Branch substation | | |
| | Rebuild Lakin – Racine Tap | | |
| b3095 | 69 kV line section (9.2 miles) | | AEP (100%) |
| 03093 | to 69 kV standards, utilizing | | ALF (100%) |
| | 795 26/7 ACSR conductor | | |
| | Install a 138 kV 3000A 40 kA | | |
| | circuit switcher on the high | | |
| b3099 | side of the existing 138/34.5 | | AEP (100%) |
| | kV transformer No.5 at | | |
| | Holston station | | |
| | Replace the 138 kV MOAB | | |
| | switcher "YY" with a new | | |
| b3100 | 138 kV circuit switcher on the | | AEP (100%) |
| | high side of Chemical | | , , |
| | transformer No.6 | | |
| | Rebuild the 1/0 Cu. conductor | | |
| | sections (approx. 1.5 miles) of | | |
| | the Fort Robinson – Moccasin | | |
| | Gap 69 kV line section | | |
| 1.0101 | (approx. 5 miles) utilizing | | 177 (1001) |
| b3101 | 556 ACSR conductor and | | AEP (100%) |
| | upgrade existing relay trip | | |
| | limit (WN/WE: 63 MVA, line | | |
| | limited by remaining | | |
| | conductor sections) | | |
| | Replace existing 50 MVA | | |
| | 138/69 kV transformers #1 | | |
| b3102 | and #2 (both 1957 vintage) at | | AEP (100%) |
| | Fremont station with new 130 | | (200,0) |
| | MVA 138/69 kV transformers | | |

| | distinssion Emidicements | 1 1111101011 1 10 1 011010 1 10 0 011 | rement responsible editioner(s) |
|----------|---------------------------------|---------------------------------------|---------------------------------|
| | Install a 138/69 kV | | |
| | transformer at Royerton | | |
| | station. Install a 69 kV bus | | |
| | with one 69 kV breaker | | |
| b3103.1 | toward Bosman station. | | AEP (100%) |
| 03103.1 | Rebuild the 138 kV portion | | ALI (100%) |
| | into a ring bus configuration | | |
| | built for future breaker and a | | |
| | half with four 138 kV | | |
| | breakers | | |
| | Rebuild the | | |
| | Bosman/Strawboard station in | | |
| 1 2102 2 | the clear across the road to | | AED (1000/) |
| b3103.2 | move it out of the flood plain | | AEP (100%) |
| | and bring it up to 69 kV | | |
| | standards | | |
| | Retire 138 kV breaker L at | | |
| 1 2102 2 | Delaware station and re- | | A ED (1000()) |
| b3103.3 | purpose 138 kV breaker M | | AEP (100%) |
| | for the Jay line | | |
| | Retire all 34.5 kV equipment | | |
| 1 2102 4 | at Hartford City station. Re- | | AED (1000/) |
| b3103.4 | purpose breaker M for the | | AEP (100%) |
| | Bosman line 69 kV exit | | |
| | Rebuild the 138 kV portion of | | |
| | Jay station as a 6 breaker, | | |
| | breaker and a half station re- | | |
| | using the existing breakers | | |
| b3103.5 | "A", "B", and "G." Rebuild | | A FIR (1000()) |
| | the 69 kV portion of this | | AEP (100%) |
| | station as a 6 breaker ring bus | | |
| | re-using the 2 existing 69 kV | | |
| | breakers. Install a new 138/69 | | |
| | kV transformer | | |
| L | 11 | 1 | |

| 1100001100 110 | ansimission Emiliarections | 1 111110001 1 10 + 011000 1 10 0 011 | rement responsible editioner(s) |
|----------------|---------------------------------|--------------------------------------|---------------------------------|
| | Rebuild the 69 kV Hartford | | |
| | City – Armstrong Cork line | | |
| b3103.6 | but instead of terminating it | | AEP (100%) |
| | into Armstrong Cork, | | |
| | terminate it into Jay station | | |
| b3103.7 | Build a new 69 kV line from | | AEP (100%) |
| 03103.7 | Armstrong Cork – Jay station | | 71121 (10070) |
| | Rebuild the 34.5 kV | | |
| | Delaware – Bosman line as | | |
| b3103.8 | the 69 kV Royerton – | | AEP (100%) |
| 03103.8 | Strawboard line. Retire the | | ALI (100%) |
| | line section from Royerton to | | |
| | Delaware stations | | |
| | Perform a sag study on the | | |
| | Polaris – Westerville 138 kV | | |
| b3104 | line (approx. 3.6 miles) to | | AED (1000/) |
| 03104 | increase the summer | | AEP (100%) |
| | emergency rating to 310 | | |
| | MVA | | |
| | Rebuild the Delaware – Hyatt | | |
| | 138 kV line (approx. 4.3 | | |
| b3105 | miles) along with replacing | | AEP (100%) |
| | conductors at both Hyatt and | | |
| | Delaware substations | | |
| | Perform a sag study (6.8 | | |
| | miles of line) to increase the | | |
| | SE rating to 310 MVA. Note | | |
| b3106 | that results from the sag study | | AEP (100%) |
| | could cover a wide range of | | , , , |
| | outcomes, from no work | | |
| | required to a complete rebuild | | |
| | Rebuild 5.2 miles Bethel – | | |
| b3109 | Sawmill 138 kV line | | AEP (100%) |
| | including ADSS | | , , , , |

| required in | distinssion Lindicements | i minadi ite vende itequi | efficit 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 reterminating 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%) |
| b3118.1 | Expand existing Chadwick station and install a second 138/69 kV transformer at a new 138 kV bus tied into the Bellefonte – Grangston 138 kV circuit. The 69 kV bus will be reconfigured into a ring bus arrangement to tie the new transformer into the existing 69 kV via installation of four 3000A 63 kA 69 kV circuit breakers | | AEP (100%) |
| b3118.2 | Perform 138 kV remote end work at Grangston station | | AEP (100%) |
| b3118.3 | Perform 138 kV remote end work at Bellefonte station | | AEP (100%) |
| b3118.4 | Relocate the Chadwick – Leach 69 kV circuit within Chadwick station | | AEP (100%) |

| b3118.5 | Terminate the Bellefonte – | |
|----------|---------------------------------|--------------|
| | Grangston 138 kV circuit to | AEP (100%) |
| | the Chadwick 138 kV bus | |
| | Chadwick – Tri-State #2 138 | |
| | kV circuit will be | |
| | reconfigured within the | |
| b3118.6 | station to terminate into the | AEP (100%) |
| | newly established 138 kV bus | |
| | #2 at Chadwick due to | |
| | construability aspects | |
| | Reconductor Chadwick – | |
| | Leach and Chadwick — | |
| | England Hill 69 kV lines with | |
| | 795 ACSS conductor. | |
| b3118.7 | Perform a LiDAR survey and | AEP (100%) |
| | a sag study to confirm that the | |
| | reconductored circuits would | |
| | maintain acceptable | |
| | clearances | |
| | Replace the 20 kA 69 kV | |
| | circuit breaker 'F' at South | |
| b3118.8 | Neal station with a new | AEP (100%) |
| 03110.0 | 3000A 40 kA 69 kV circuit | 71E1 (10070) |
| | breaker. Replace line risers | |
| | towards Leach station | |
| | Rebuild 336 ACSR portion of | |
| b3118.9 | Leach – Miller S.S 69 kV line | AEP (100%) |
| 3611319 | section (approx. 0.3 mile) | 122 (100,0) |
| | with 795 ACSS conductor | |
| | Replace 69 kV line risers | |
| b3118.10 | (towards Chadwick) at Leach | AEP (100%) |
| | station | |
| | Rebuild the Jay – Pennville | |
| | 138 kV line as double circuit | |
| b3119.1 | 138/69 kV. Build a new 9.8 | AEP (100%) |
| | mile single circuit 69 kV line | 1(100/0) |
| | from near Pennville station to | |
| | North Portland station | |

| required 11 | ansinission Emiancements | Annual Revenue Require | ement Responsible Customer(s) |
|-------------|--------------------------------|------------------------|-------------------------------|
| | Install three (3) 69 kV | | |
| b3119.2 | breakers to create the "U" | | |
| | string and add a low side | | AEP (100%) |
| | breaker on the Jay | | |
| | transformer 2 | | |
| | Install two (2) 69 kV breakers | | |
| h2110.2 | at North Portland station to | | AED (1000/) |
| b3119.3 | complete the ring and allow | | AEP (100%) |
| | for the new line | | |
| | At Conesville 138 kV station: | | |
| | Remove line leads to | | |
| | generating units, transfer | | |
| b3129 | plant AC service to existing | | AED (1000/) |
| 03129 | station service feeds in | | AEP (100%) |
| | Conesville 345/138 kV yard, | | |
| | and separate and reconfigure | | |
| | protection schemes | | |
| | At East Lima and Haviland | | |
| | 138 kV stations, replace line | | |
| b3131 | relays and wavetrap on the | | AEP (100%) |
| | East Lima – Haviland 138 kV | | |
| | facility | | |
| | Rebuild 3.11 miles of the | | |
| b3132 | LaPorte Junction – New | | AEP (100%) |
| 03132 | Buffalo 69 kV line with 795 | | ALI (100%) |
| | ACSR | | |
| | Rebuild the Garden Creek – | | |
| b3139 | Whetstone 69 kV line | | AEP (100%) |
| | (approx. 4 miles) | | |
| b3140 | Rebuild the Whetstone – | | |
| | Knox Creek 69 kV line | | AEP (100%) |
| | (approx. 3.1 miles) | | |
| | Rebuild the Knox Creek – | | |
| b3141 | Coal Creek 69 kV line | | AEP (100%) |
| | (approx. 2.9 miles) | | |

| Required Transmission Educationics | | Affiliali Revenue Requirement Responsible Customer(s) | | |
|------------------------------------|--|---|--------------|--|
| | Rebuild the 46 kV Bradley – | | | |
| b3148.1 | Scarbro line to 96 kV | | | |
| | standards using 795 ACSR to | | | |
| | achieve a minimum rate of | | | |
| | 120 MVA. Rebuild the new | | AEP (100%) | |
| | line adjacent to the existing | | | |
| | one leaving the old line in | | | |
| | service until the work is | | | |
| | completed | | | |
| | Bradley remote end station | | | |
| 1 21 40 2 | work, replace 46 kV bus, | | A ED (1000/) | |
| b3148.2 | install new 12 MVAR | | AEP (100%) | |
| | capacitor bank | | | |
| | Replace the existing switch at | | | |
| b3148.3 | Sun substation with a 2-way | | AEP (100%) | |
| 03148.3 | SCADA-controlled motor- | | ALI (100%) | |
| | operated air-breaker switch | | | |
| | Remote end work and | | | |
| b3148.4 | associated equipment at | | AEP (100%) | |
| | Scarbro station | | | |
| | Retire Mt. Hope station and | | | |
| b3148.5 | transfer load to existing Sun | | AEP (100%) | |
| | station | | | |
| | Rebuild the 2.3 mile Decatur | | | |
| b3149 | South Decatur 69 kV line | | AEP (100%) | |
| | using 556 ACSR | | | |
| 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 | | AEP (100%) | |
| | extension from the Aviation – | | | |
| | Ellison Road 138 kV line to | | | |
| | remove the load from the 69 | | | |
| | kV line | | | |

| required III | distinssion Lindheethens | 7 Hilliadi Tte vellae Ttequi | rement responsible editioner(s) |
|--------------|--|------------------------------|---------------------------------|
| b3151.1 | Rebuild the 30 mile Gateway - Wallen 34.5 kV circuit as the 27 mile Gateway - | | AEP (100%) |
| | Wallen 69 kV line | | |
| | Retire approx. 3 miles of the | | |
| b3151.2 | Columbia – Whitley 34.5 kV | | AEP (100%) |
| 03131.2 | line | | (100,0) |
| | At Gateway station, remove | | |
| | all 34.5 kV equipment and | | |
| b3151.3 | install one (1) 69 kV circuit | | AEP (100%) |
| | breaker for the new Whitley | | , , |
| | line entrance | | |
| | Rebuild Whitley as a 69 kV | | |
| b3151.4 | station with two (2) lines and | | AEP (100%) |
| | one (1) bus tie circuit breaker | | |
| | Replace the Union 34.5 kV | | |
| b3151.5 | switch with a 69 kV switch | | AEP (100%) |
| | structure | | |
| | Replace the Eel River 34.5 | | |
| b3151.6 | kV switch with a 69 kV | | AEP (100%) |
| | switch structure | | |
| b3151.7 | Install a 69 kV Bobay switch | | AEP (100%) |
| 03131.7 | at Woodland station | | 1121 (10070) |
| | Replace the Carroll and | | |
| | Churubusco 34.5 kV stations | | |
| | with the 69 kV Snapper | | |
| b3151.8 | station. Snapper station will | | AEP (100%) |
| 03131.0 | have two (2) line circuit | | (/ |
| | breakers, one (1) bus tie | | |
| | circuit breaker and a 14.4 | | |
| | MVAR cap bank | | |
| b3151.9 | Remove 34.5 kV circuit | | AED (1000() |
| | breaker "AD" at Wallen | | AEP (100%) |
| | station Rebuild the 2.5 miles of the | | |
| b3151.10 | | | AED (1000/) |
| | Columbia – Gateway 69 kV | | AEP (100%) |
| | line | | |

| 110 40110 07 111 | | 1 1111101011 110 / 011010 110 0 | rement responsible edistorner(s) |
|------------------|--|---------------------------------|----------------------------------|
| b3151.11 | Rebuild Columbia station in the clear as a 138/69 kV | | |
| | station with two (2) 138/69 kV transformers and 4- | | 177 (1001) |
| | breaker ring buses on the high | | AEP (100%) |
| | and low side. Station will | | |
| | reuse 69 kV breakers "J" & | | |
| | "K" and 138 kV breaker "D" | | |
| | Rebuild the 13 miles of the | | |
| b3151.12 | Columbia – Richland 69 kV | | AEP (100%) |
| | line | | |
| | Rebuild the 0.5 mile Whitley | | |
| b3151.13 | – Columbia City No.1 line as | | AEP (100%) |
| | 69 kV | | |
| 10151 14 | Rebuild the 0.5 mile Whitley | | A ED (1000() |
| b3151.14 | - Columbia City No.2 line as | | AEP (100%) |
| | 69 kV Rebuild the 0.6 mile double | | |
| | circuit section of the Rob | | |
| b3151.15 | Park – South Hicksville / Rob | | AEP (100%) |
| 03131.13 | Park – Diebold Road as 69 | | ALI (100%) |
| | kV | | |
| | Construct an approx. 2.4 | | |
| b3160.1 | miles double circuit 138 kV | | |
| | extension using 1033 ACSR | | A F.D. (1000() |
| | (Aluminum Conductor Steel | | AEP (100%) |
| | Reinforced) to connect Lake | | |
| | Head to the 138 kV network | | |
| b3160.2 | Retire the approx.2.5 miles | | |
| | 34.5 kV Niles – Simplicity | | AEP (100%) |
| | Tap line | | |
| b3160.3 | Retire the approx.4.6 miles | | AEP (100%) |
| | Lakehead 69 kV Tap | | 1121 (10070) |

| Required 11 | ansinission Enhancements | Allitual Nevertue Nequite | ement Responsible Customer(s) |
|-------------|-------------------------------|---------------------------|-------------------------------|
| | Build new 138/69 kV drop | | |
| | down station to feed | | |
| | Lakehead with a 138 kV | | |
| b3160.4 | breaker, 138 kV switcher, | | AEP (100%) |
| | 138/69 kV transformer and a | | |
| | 138 kV Motor-Operated Air | | |
| | Break | | |
| | Rebuild the approx. 1.2 miles | | |
| | Buchanan South 69 kV | | |
| b3160.5 | Radial Tap using 795 ACSR | | AEP (100%) |
| | (Aluminum Conductor Steel | | |
| | Reinforced) | | |
| | Rebuild the approx.8.4 miles | | |
| | 69 kV Pletcher – Buchanan | | |
| | Hydro line as the approx. 9 | | |
| b3160.6 | miles Pletcher – Buchanan | | AEP (100%) |
| | South 69 kV line using 795 | | |
| | ACSR (Aluminum Conductor | | |
| | Steel Reinforced) | | |
| b3160.7 | Install a PoP (Point-of- | | |
| | Presence) switch at Buchanan | | |
| | South station with 2 line | | AEP (100%) |
| | MOABs (Motor-Operated Air | | |
| | Break) | | |

| | 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 | | |
| b3208 | from Joshua Falls – Riverville | | AEP (100%) |
| | (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) | | |
| | Rebuild the 10.5 mile Berne – | | |
| b3209 | South Decatur 69 kV line | | AEP (100%) |
| | using 556 ACSR | | |
| | Replace approx. 0.7 mile | | |
| b3210 | Beatty – Galloway 69 kV line | | AEP (100%) |
| | with 4000 kcmil XLPE cable | | |
| b3220 | Install 14.4 MVAR capacitor | | |
| 03220 | bank at Whitewood 138 kV | | AEP (100%) |
| | Upgrade circuit breaker "R1" | | |
| | at Tanners Creek 345 kV. | | |
| h2261 | Install Transient Recovery | | |
| b3261 | Voltage capacitor to increase | | |
| | the rating from 50 kA to 63 | | |
| | kA | | AEP (100%) |

| | distinssion Emidicements | 1 1111101011 110 / 011010 1100 011 | rement responsible editionier(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%) |
| | 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 | | |
| b3270 | 138/34.5 kV transformer at | | |
| 03270 | 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%) |
| | Replace Dragoon 34.5 kV | | |
| b3270.1 | breakers "B", "C", and "D" | | |
| | with 40 kA breakers | | AEP (100%) |
| | Install a 138 kV circuit | | |
| | breaker at Fremont station on | | |
| h2271 | the line towards Fremont | | |
| b3271 | 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%) |

ATTACHMENT L List of Transmission Owners

Allegheny Electric Cooperative, Inc.

American Transmission Systems, Incorporated

Atlantic City Electric Company

Baltimore Gas and Electric Company

Delmarva Power & Light Company

Duke Energy Ohio, Inc.

Duke Energy Kentucky, Inc.

East Kentucky Power Cooperative, Inc.

Essential Power Rock Springs, LLC

Hudson Transmission Partners, LLC

ITC Interconnection LLC

Jersey Central Power & Light Company

Mid-Atlantic Interstate Transmission, LLC

Neptune Regional Transmission System, LLC

Old Dominion Electric Cooperative

PECO Energy Company

Pennsylvania Power & Light Company

Potomac Electric Power Company

Public Service Electric and Gas Company

Rockland Electric Company

Trans-Allegheny Interstate Line Company

Transource West Virginia, LLC

UGI Utilities, Inc.

Monongahela Power Company, The Potomac Edison Company, and West Penn Power Company, all doing business as Allegheny Power

Commonwealth Edison Company and Commonwealth Edison Company of Indiana, Inc.

The Dayton Power and Light Company

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

Duquesne Light Company

Virginia Electric and Power Company

Linden VFT, LLC

City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power

City of Hamilton, OH

Southern Maryland Electric Cooperative, Inc.

Ohio Valley Electric Cooperative

AMP Transmission, LLC

Silver Run Electric, LLC

NextEra Energy Transmission MidAtlantic Indiana, Inc.

Wabash Valley Power Association, Inc.