



SUBJECT: AEP East Operating Companies' and East Transmission Companies' 2017 Formula Rate True Discovery Responses to Interested Parties.

East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000

Responses to
Set AMP-JI Set 2 of Data Requests

NOTE: The responses herein are sorted based on the date they were provided and then numerically by request.

Because of their voluminous nature, attachments referenced in these responses will be provided based on an emailed request. Requests for attachments deemed confidential will require execution of a non-disclosure agreement prior to being provided.

Requests can be sent to:

David Weiss
American Electric Power Service Corporation
Regulatory Case Manager
dbweiss@aep.com

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-239:

In reference to AEP responses to JI 1-34 Attachment 1, please provide the gross plant investment, accumulated depreciation, and depreciation expense for each of the facilities listed in the attachment.

Response:

The Company cannot provide the requested information in the format requested. As an example, multiple line names are listed as a single asset locations in the Company systems. Therefore there is no way to identify the information requested that would align with the attachment provided in JI-1-034 Attachment 1.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-240:

In reference to AEP's response to JI 1-40, the original question was seeking information based on the definition of "Smart Grid" as set forth by AEP on its website:

<https://www.aepsustainability.com/energy/reliability/>

The East Joint Interveners are concerned about the general level of Smart Grid project costs and expenses that are included in the transmission formula update, and, more importantly, whether such costs and expenses were properly allocated between the distribution and transmission functions. Please provide the data and information as originally requested in JI 1-

Response:

a. Please see JI-2-240 Attachment 1 for fiber optic investments made by AEP's transmission subsidiaries in the PJM region related to Smart Grid Fiber Optic Cable.

b. & c. The fiber optic cable to support Transmission is a Transmission asset. At the beginning of the program, a bandwidth study was conducted and the asset was split 95%/5% Transmission/Distribution based upon current circuit usage as measured on the AEP System fiber support backbone. This study is done tri-annually. AEP's transmission and distribution control centers have multiple groups within each facility, making it impossible to distinctly define who is utilizing how much of the aggregated bandwidth at any specific location. AEP uses Quality of Service (QoS) to make sure critical traffic gets first priority. Other facility users' usage will vary depending upon their current requirements and daily usage.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-244:

APCO - Refer to AEP's response JI 1-60 Attachment 1, Excel row 1133, with account long description of "Belle 46KV Substation: APCo : 3205" and activity cost of \$580,096.57. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The improvements at Belle Station are part of an effort to replace obsolete equipment that will no longer be supported by telecommunication companies by replacing analog leased lines, frame relay circuits (obsolete digital leased line), and tone telemetry installations (obsolete 2-point system alarms). Telecom providers are phasing out these older technologies, which they will no longer support, and which AEP will no longer be able to support due to lack of expertise and unavailability of parts. This upgrade will also require the replacement of related station equipment such as older model Remote Terminal Units (RTUs) that will not support newer technology, and, in the case of obsolete tone telemetry, RTUs will need to be added to support the newer Telecom technology. Belle Station is a 46 kV transmission station and this work is related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-245:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 319, with account long description of "BRADLEY-SCARBRO46: RELOCATE - BOY SCOUT OF AMERICA" and activity cost of \$149,193.52. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves relocating structure 313-41 on the Bradley - Scarbro 46 kV line pursuant to a request by the Boy Scouts of America for their J.W. and Hazel Ruby Welcome Center. This project was 100% reimbursable by the customer. The sum of all charges listed under work order number 42606098 nets approximately to \$0. All work was performed on the Bradley-Scarbro 46 kV transmission line, and is therefore related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-246:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 341, with account long description of "BRADLEY - TAMS MT. 46KV: REHAB" and activity cost of \$2,353,825.61. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involve the replacement of ten deteriorated structures (STR's 12, 15, 16, 27, 85, 134, 135, 136, 137, 146). Existing conductor and shieldwires will be transferred to new structures. Between Structures 135 and 136 there will be a relocation of the line due to a house under the line. This relocation will be accomplished by the addition of one new structure. All work was performed on the Bradley-Tams Mountain 46 kV transmission line, and is therefore related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-247:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 345, with account long description of "CHEMICAL - WASHINGTON STREET 46KV; APCO" and activity cost of \$448,702.24. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is to bring the existing 46kV Chemical-Washington Street line into the Washington Street expanded station. The work includes a single pole double circuit custom steel pole structure.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-248:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 346, with account long description of "CHAUNCEY-HUFF CREEK 46KV" and activity cost of \$3,811,782.44. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves replacement of deteriorated structures 1, 2, 3, 4, 6, 9, 14, 15, 17, 20 and 31. Existing conductor and shieldwires will be used. No wire replacement is included in this scope. New structures will be designed for Drake conductor and 7 #8 Shieldwire. All work was performed on the Chauncey-Huff Creek 46 kV transmission line, and is therefore related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-249:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 348, with account long description of "CABIN CREEK - CLENDE CP STR 84" and activity cost of \$145,914.32. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of deteriorated structure 84 on the Cabin Creek-Clendenin 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-250:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 350, with account long description of "BAILEYSVILLE - TAMS 2015 NSW R" and activity cost of \$258,657.06. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of deteriorated structure(s) on the Baileysville-Tams Mountain 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
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Data Request JI Set 2-251:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 353, with account long description of "BELLE - KANAWHA CITY CP WO 2" and activity cost of \$175,488.72. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of deteriorated structure(s) on the Belle-Kanawha City 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
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Data Request JI Set 2-252:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 354, with account long description of "BAILEYSVILLE - SUNDI CP REPLAC" and activity cost of \$140,831.86. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of damaged facilities on the Baileysville-Sundial 46 kV line at structure 306-11. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
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Data Request JI Set 2-253:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 361, with account long description of "BELVA - CLENDENIN CP WO REPLA" and activity cost of \$215,861.07. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of damaged facilities on the Belva-Cledenin 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-254:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 370, with account long description of "GLADSTONE TAP CP WO 1 CONDITI" and activity cost of \$528,212.22. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the replacement of deteriorated structures on the Gladstone Tap 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-255:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 632, with account long description of "Poles and Fixtures" and activity cost of \$760,910.04. Please explain the nature of this project and verify whether the item is related to the distribution or transmission function.

Response:

The circuit from Becco - Latrobe - Craneco - Skin Fork 46 kV has experienced various outages. Currently, the system does not have any sectionalization capabilities and an outage removes the entire circuit from service. To minimize the outage exposure, this project will install motorized switches at Latrobe and Craneco stations to sectionalize the system. To accommodate the work at Craneco Station, line modifications were required on the Becco-Skin Fork 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-256:

APCO - Refer to AEP's response JI 1-61 Attachment 1, Excel row 633, with account long description of "Poles and Fixtures" and activity cost of \$293,968.66. Please explain the nature of this project and verify whether the it is related to the distribution or transmission function.

Response:

The circuit from Becco - Latrobe - Craneco - Skin Fork 46 kV has experienced various outages. Currently, the system does not have any sectionalization capabilities and an outage removes the entire circuit from service. To minimize the outage exposure, this project will install motorized switches at Latrobe and Craneco stations to sectionalize the system. To accommodate the work at Latrobe Station, line modifications were required on the Becco-Skin Fork 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-257:

APCO - Refer to AEP's response JI 1-63 Attachment 1, Excel row 19, with account long description of "T Ap T Anda" and activity cost for 2017 of \$1,116,881.36. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Project ID ETN000150 (T Ap T Anda) is a non-specific Transmission Project ID. See JI-257 Attachment 1, Tab ABM for more details of the charges to this project by Activity Based Management (ABM) Code. This provides what type of activity that was charged. The top four activities, totaling 76% of the total charges were:

- Operate Transmission System Facilities
- Perform Transmission Line Preventative Maintenance
- Participate in Process Improvement Efforts
- Engineer & Design Transmission Line Facilities

Preparer of Response: Sheila Balster

Date: 11/20/2018

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**Responses to
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Data Request JI Set 2-258:

APCO - In reference to AEP's response to JI 1-64, please provide the following:

- a. A detailed listing (Excel format) of all items booked to Account 566 (the spreadsheet provided does not provide the necessary detail).
- b. Explain the nature of the expenses related to the Virginia T-RAC.
- c. APCo's 2017 FERC Form 1, page 232.3, indicates that the total amount related to the Virginia T-RAC that was written off to Account 566 during the period was \$20,224,577. However, the total charges to Account 566 for 2017 was \$11,535,295. Reconcile the differences between the amount written off to the total amount recorded to Account 566 during 2017.
- d. Provide the FERC docket authorizing APCo's recovery of this regulatory asset in the transmission formula rate.

Response:

- a. Please refer to Attachment JI-258 Attachment 1 for the detailed transactions recorded to account 566.
- b. The Virginia T-RAC is the APCo Virginia retail recovery mechanism for that retail jurisdiction's PJM LSE OATT charges.
- c. Please refer to JI-258 Attachment 2 for a reconciliation between the amount written off and the amount recorded in 566 (part c).
- d. APCo Virginia T-RAC expenses, revenues and regulatory assets and liabilities are not included in the transmission formula rate.

Preparer of Response: Craig Adelman

Preparer of Response: Alex Vaughan

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-260:

APCO - Refer to AEP's response to JI 1-66 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Legal Services and Expenses" on Excel row 20 in the amount of \$1,167,745.87. Sheila Balster

Response:

Please see JI-260 Attachment 1 for the detail of the outside services that were coded to the cost component "Legal Services and Expenses".

Preparer of Response: Sheila Balster

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-261:

APCO - Refer to AEP's response to JI 1-66 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Outside Svcs-Audit Fees Financ" on Excel row 26 in the amount of \$1,653,260.78. Sheila Balster

Response:

Please see JI-261 Attachment 1 for the detail of the outside services that were coded to the cost component "Outside Svcs-Audit Fees.". In summary, these are fees for AEP/APCo's external auditors (PricewaterhouseCoopers) in conjunction with quarterly and annual audit activities.

Preparer of Response: Sheila Balster

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-262:

I&M - In reference to AEP's response to JI 1-82 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "AEPSC Bill" on Excel row 13 in the amount of \$1,232,107.17.
Craig Adelman

Response:

Please see JI-262 Attachment 1 for a summary and the detail line items of the "AEPSC Bill" in the amount of \$1,232,107.17.

Preparer of Response: Craig Adelman

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-263:

I&M - In AEP's response to JI 1-83 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Accounts Payable Accruals" on Excel row 5 in the amount of \$1,113,186.61. Craig Adelman

Response:

Please see JI-263 Attachment 1 for a summary and the detail line items of the "Accounts Payable Accrual" in the amount of \$1,113,186.61.

Preparer of Response: Craig Adelman

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-264:

I&M - In AEP's response to JI 1-83 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Legal Services and Expenses" on Excel row 25 in the amount of \$1,441,634.23. Craig Adelman

Response:

Please see JI-264 Attachment 1 for a summary and the detail line items of "Legal Services and Expenses" in the amount of \$1,441,634.23.

Preparer of Response: Craig Adelman

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-266:

KPCO - In reference to AEP's response to JI 1-97 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "AEPSC Bill" on Excel row 13 in the amount of \$645,193.44.

Response:

Please see JI-266 Attachment 1 for a summary and the detail line items of the "AEPSC Bill" in the amount of \$645, 193.44.

Preparer of Response: Craig Adelman

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-267:

KPCO In reference to AEP's response to JI 1-107 Attachment 1, Excel row 159, Account 454001, Account Description "Rent From Elect Property – Af", Line Description "Transmission Operations Center", please explain the nature of this line item and provide a detailed explanation as to why Kentucky Power does not include the credit as transmission revenue in its formula rate.

Response:

Based on the Company's review of the detail in JI 1-107 Attachment 1, the Company notes that Excel row 159 is referring to activity in account 4561060, "Affil PJM Trans Enhancmnt Cost." While information for account 4540001, "Rent from Elect Property-Af" can be found starting on excel row 16 of the Attachment 1, there is no reference to a line description "Transmission Operations Center." These observations notwithstanding, the Company responds that KPCO, (or any operating company) would only receive affiliated rent revenue from an affiliate if KPCO (or any operating company) owned the asset for which the affiliate was paying rent. As a specific example, the KPCO Distribution Business Unit "Unit 110" receives a revenue credit for the rents paid from affiliates (AEP Service Corporation (BU 103) and Kentucky Power Transmission (BU180)) for the use of the Hazard Service Center, which is a distribution owned asset.

Preparer of Response: Diane Keegan

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-270:

OPCO - In reference to AEP's response to JI 1-128 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Accounts Payable Accruals" on Excel row 11 in the amount of \$1,294,903.

Response:

Please see JI-270 Attachment 1 for a summary and the detail line items of the "Accounts Payable Accrual" in the amount of \$1,294,903.

Preparer of Response: Craig Adelman

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-271:

OPCO - In reference to AEP's response to JI 1-128 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "AEPSC Bill" on Excel row 13 in the amount of \$2,708,791.

Response:

Please note that the amount provided for the "AEPSC Bill" in data request JI-128 was incorrect. The correct amount is \$3,050,170. See JI-171 Attachment 1 for the revised response and see JI-271 Attachment 2 for a summary and the detail line items of the "AEPSC Bill" in the amount of \$3,050,170.

Preparer of Response: Craig Adelman

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-272:

OPCO - In AEP's response to JI 1-130 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Contract Labor (General)" on Excel row 11 in the amount of \$742,263.77.

Response:

Please see JI-272 Attachment 1 for a summary and the detail line items of "Contract Labor (General)" in the amount of \$742,263.77.

Preparer of Response: Sheila Balster

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-273:

OPCO - In AEP's response to JI 1-130 Attachment 1, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item that total the "Legal Services and Expenses" on Excel row 22 in the amount of \$789,818.27.

Response:

Please see Attachment JI-273 Attachment 1 for the detail of the outside services that were coded to the cost component "Legal Services and Expenses" for \$789,818.27.

Preparer of Response: Sheila Balster

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-277:

IMTCO - Refer to AEP's response to JI 1-155 Attachment 1, Excel row 854, with account long description of "TULIP ROAD 69 KV TRANSCO" and activity cost of \$1,899,793.82. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

In order to consolidate the two delivery points, to simplify grid connectivity, and to improve reliability, the construction of a new 69 kV switching station, Tulip Road is required. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-278:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 274, with account long description of "CONSOLIDATED DIE CAST TAP 69 KV: NEW LINE" and activity cost of \$685,512.58. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

Studies indicate that the sub-transmission system in the Hartford, Michigan area could experience low voltages under N-1 contingency conditions. In addition, Sister Lakes, Keeler, and Consolidated Die Cast stations are currently fed from a radial 34.5 kV line tapped off of the Colby-Valley line. Because of this configuration and the significant outage exposure, Sister Lakes is one of the worst performing stations in I&M according to historical outage data. To alleviate the low voltage concerns and to improve reliability, this program provides a loop feed to Sister Lakes, Keeler, and Consolidated Die Cast. The recommended improvements include: Rebuild the existing radial Sister Lakes Tap line to 69 kV standards (11 miles), construct the new Rothadew 69 kV station with three circuit breakers, construct the new Keelette 69 kV station with line switches near the tap to Keeler, and construct a new 69 kV line from Hartford to Keelette (9 miles) creating a loop feed to the area. All of the new facilities will be constructed to 69 kV standards, but will be operated at 34.5 kV. These upgrades are included in the PJM RTEP as baseline upgrade b2345. All work was related to transmission function.

Note that the charges at issue in this question were recorded in October 2017 business.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-279:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 301, with account long description of "CONSOLIDATED DIE CAST TAP 69 KV: NEW LINE" and activity cost of \$206,341.72. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

Please refer to the response to JI-2-278 for the description of this project. These specific amounts represent trailing charges incurred in November, 2017.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-280:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 321, with account long description of "TULIP ROAD -HARBISON 69 KV LINE" and activity cost of \$799,618.76. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

In order to consolidate the two delivery points, to simplify grid connectivity, and to improve reliability, the construction of a new 69 kV switching station, Tulip Road is required. A new section of line, Tulip Road-Harbison 69 kV Line is required to connect the existing circuit into the new Tulip Road Station. All work was related to transmission function.

Note that the activity at issue in this question was recorded in November, 2017 business.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-281:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 359, with account long description of "STRAWTON-OHIO OIL 34.5 KV LINE" and activity cost of \$4,638,908.72. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

To alleviate the low voltage violations and aging infrastructure concerns, this program will convert the Alexandria area from 34.5 kV to 138 kV operation. This requires a station expansion at the 138 kV Strawton station; the retirement of Mullens Creek and a new station Makahoy arranged in a three breaker ring bus; the retirement of the 34.5 kV Alexandria station and a new 138/12 kV station Aladdin constructed. These upgrades allow for 14 miles of the obsolete 34.5 kV system be retired and a 138 kV line be constructed from Strawton - Aladdin - Jones Creek. These upgrades are included in the PJM RTEP as baseline upgrade b2410. The improvements specifically include the installation of a 138/34.5 kV transformer at Strawton Station and the construction of a 34.5 kV line from Strawton to Ohio Oil. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-282:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 360, with account long description of "STRAWTON-SOUTH SUMMITVILLE 34.5 KV LINE" and activity cost of \$2,476,771.83. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

To alleviate the low voltage violations and aging infrastructure concerns, this program will convert the Alexandria area from 34.5 kV to 138 kV operation. This requires a station expansion at the 138 kV Strawton station; the retirement of Mullens Creek and a new station Makahoy arranged in a three breaker ring bus; the retirement of the 34.5 kV Alexandria station and a new 138/12 kV station Aladdin constructed. These upgrades allow for 14 miles of the obsolete 34.5 kV system be retired and a 138 kV line be constructed from Strawton - Aladdin - Jones Creek. These upgrades are included in the PJM RTEP as baseline upgrade b2410. The improvements specifically include the installation of a 138/34.5 kV transformer at Strawton Station and the construction of a 34.5 kV line from Strawton to South Summitville. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-283:

IMTCO - Refer to AEP's response to JI 1-157 Attachment 1, Excel row 362, with account long description of "TULIP ROAD-HARBISON 69 KV LINE" and activity cost of \$36,402.23. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

Please see the Company's project description in the response to JI-2-280. The charges in this response represent trailing charges booked in December, 2017.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-284:

IMTCO - Refer to AEP's response to JI 1-160 Attachment 1, Excel row 26, with account long description of "Underground Conductor, All sizes and types - Span/Run Feet" and activity cost of \$675,844.27. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The antiquated transmission system in the downtown Fort Wayne area is in need of reinforcement due to reliability and capacity concerns. Spy Run Station is a critical terminus of distribution and subtransmission facilities, and is currently radially fed at 138 kV. The 34.5 kV lines have become unreliable. To address these concerns, it is proposed to convert the Robison Park - Spy Run 34.5 kV circuit to 138 kV operation, and provide system enhancements to the Spy Run and Three Rivers Stations. The Spy Run-Three Rivers 34.5 kV underground line was completely replaced with new underground cables. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-285:

IMTCO - In reference to AEP's response to JI 1-162 Attachment 1, for the Cost Type items listed below, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item for both 2016 and 2017:

- a. Employee Incentives
- b. Incentives
- c. Labor & Fringes
- d. Outside Services
- e. Shared Services
- f. Less I&M T-Co billings to AEP affiliates.

Response:

Please refer to JI-285 Attachments 1-12 for the requested information.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-286:

IMTCO - In reference to AEP's response to JI 1-163 Attachment 1, for each item listed below, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item:

- a. Services provided by AEPSC
 - i. Labor & labor-related costs
 - ii. Outside Services
 - iii. Shared Services
- b. Services provided by other AEP affiliates
 - i. Labor & labor-related costs
- c. Research & Development

Response:

Please refer to JI-286 Attachments 1-5 for the requested information.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-287:

IMTCO - In reference to AEP's response to JI 1-163, the narrative response states that "The AEPSC billings are for a variety of services including corporate initiatives...". Please provide the following:

- a. Explain the nature of the "corporate initiatives";
- b. Provide the 2017 cost of the "corporate initiatives"; and
- c. Provide a detailed breakout (workable Excel format) of all corporate initiatives during 2017 and their associated amounts.

Response:

Corporate initiatives include employee development programs, research & development efforts, process improvement efforts and safety meetings and training. The total costs incurred for these programs totaled \$91,909 in 2017. Please refer to JI-287 Attachment 1 for a summary of these items.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-288:

IMTCO - In reference to AEP's response to JI 1-165 Attachment 1, please explain the nature of the Outside Services of \$365,774 and Shared Services of \$332,689 and provide a detailed breakout (workable Excel format) of these items.

Response:

I&M T-Co uses a variety of service providers to meet the needs of the company, these types of costs are typically grouped and classified as Outside Services. Please refer to JI-288 Attachment 1 for the detail of Outside Services billed through AEPSC to I&M T-Co for 2017.

Shared Services are part of the services provided by AEPSC to all AEP affiliates, these services are typically billed to affiliates based on direct labor charges to the affiliates. Shared services include the following groups that support the entire AEP organization, Human Resources, Information Technology, Real Estate and Workplace Services and Fleet Services. Please refer to JI-288 Attachment 2 for the detail of Shared Services billed to I&M T-Co by AEPSC.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-289:

OPTCO - Refer to AEP's response to JI 1-180 Attachment 1, Excel row 546, with account long description of "NORTH FINDLAY - NORTH BALTIMORE NO. 2 34 KV" and activity cost of \$7,567,792.54. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

This project involves the rebuilding of 7.96 miles of the existing deteriorated wood-pole 69kV line utilizing tubular steel single pole structures with braced post. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-290:

OPTCO - Refer to AEP's response to JI 1-180 Attachment 1, Excel row 566, with account long description of "WEST MELROSE 69 KV EXTENSION - T/OHTC" and activity cost of \$259,068.12. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

Due to the underground transmission line failures at West Melrose station, the transmission lines will need to be rerouted overhead into the station. The West Melrose Extension portion will begin at structure 37 of the New Liberty-Findlay line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-291:

OPTCO - In reference to AEP's response to JI 1-182 Attachment 1, for the Cost Type items listed below, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item for both 2016 and 2017:

- a. Employee Expenses
- b. Employee Incentives
- c. Labor & Fringes
- d. Outside Services
- e. Shared Services

Response:

Please refer to JI-291 Attachments 1-10 for the requested information.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-292:

OPTCO - In reference to AEP's response to JI 1-183 Attachment 1, for each item listed below, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item:

- a. Services provided by AEPSC
 - i. Labor & labor-related costs
 - ii. Outside Service
- b. Services provided by other AEP affiliates
 - i. Outside Services
- c. Research & Development

Response:

Please refer to JI-292 Attachments 1-4 for the requested information.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-294:

OPTCO - In reference to AEP's response to JI 1-183, the narrative response states that "The AEPSC billings are for a variety of services including corporate initiatives...". Please provide the following:

- a. Explain the nature of the "corporate initiatives";
- b. Provide the 2017 cost of the "corporate initiatives"; and
- c. Provide a detailed breakout (workable Excel format) of all corporate initiatives during 2017 and their associated amounts.

Response:

Corporate initiatives include employee development programs, research & development efforts, process improvement efforts and safety meetings and training. The total costs incurred for these programs totaled \$186,517 in 2017. Please refer to JI-294 Attachment 1 for a summary of these items.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-295:

OPTCO - In reference to AEP's response to JI 1-185 Attachment 1, please explain the nature of the Outside Services of \$1,017,185 and provide a detailed breakout (workable Excel format) of the item.

Response:

OH T-Co uses a variety of service providers to meet the needs of the company, these types of costs are typically grouped and classified as Outside Services. Please refer to JI-295 Attachment 1 for the detail of Outside Services billed through AEPSC to OH T-Co for 2017.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-296:

OPTCO - In reference to AEP's response to JI 1-190 Attachment 1, please provide the following:

- a. Explain the difference between the Revenue Credit of \$5,887,587 included in the 2017 ATRR for AEP Ohio Transmission Company (see tab TCOS, Excel cell G13) and the \$5,873,487.20, reported in excel cell D8 of the referenced attachment, with the accompanying description "Account 454, Rent From Elec Property, Line Description: AEP TRANSMISSION NEW ALBANY HD" and confirm which value should be included in the 2017 ATRR.
- b. Provide a detailed explanation as to why the Ohio Transmission Company does not include the following Account 454 Rent from Electric Property items:
 - i. S. Charleston WV Transco Store, \$422,010.24, Excel cell F9; and
 - ii. AEP Transmission Tulsa Office, \$2,226,132.99, Excel cell I10.

Response:

- a. The difference between the total revenue credit of \$5,887,587 included in the 2017 ATRR for AEP Ohio Transmission Company and the \$5,873,487.20 of rent associated with the AEP Transmission New Albany HD are \$14,100 of rents paid by nonaffiliated companies for land owned by AEP Ohio Transmission Company. All of this revenue is included as a revenue credit to the transmission formula.
- b. The response to JI-1 190 was intended to display the revenue credits recorded on the AEP OPTCO formula rate. This formula does not include revenue credits for the Charleston WVTCO warehouse or the Tulsa office because those assets are recorded on the books of AEP WV TransCo and AEP Oklahoma TransCo, respectively. This can be ascertained by the "Unit" identifier on row seven of the referenced attachment.

Preparer of Response: Diane Keegan

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-297:

WVTCO - Refer to AEP's response to JI 1-198 Attachment 1, Excel row 82, with account long description of "BULLITT ST. - WASHINGTON ST. 69KV OPER @ 46KV: ROW; TRANSCO" and activity cost of \$541,444.23. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is for obtaining right-of-way for the new Bullitt-Washington Street 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-298:

WVTCO - Refer to AEP's response to JI 1-198 Attachment 1, Excel row 83, with account long description of "BULLITT STREET - WASHINGTON STREET 69KV OPER @ 46KV; TRANSCO" and activity cost of \$25,362.06. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is for obtaining right-of-way for the new Bullitt-Washington Street 46 kV line. All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-299:

WVTCO - Refer to AEP's response JI 1-199 Attachment 1, Excel row 142, with account long description of "WASHINGTON STREET 46KV SUBSTATION: 46KV TRANSCO EXPANSION" and activity cost of \$1,071,736.57. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is for new facilities in the Washington Street 46 kV line (account 352 is for structures, etc.). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-300:

WVTCO - Refer to AEP's response JI 1-200 Attachment 1, Excel row 407, with account long description of "WASHINGTON STREET 46KV SUBSTATION: 46KV TRANSCO EXPANSION" and activity cost of \$7,364,028.23. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is for new facilities in the Washington Street 46 kV line (account 353 is for equipment, etc.). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-301:

WVTCO - Refer to AEP's response JI 1-201 Attachment 1, on the multiple line items that contain the long description in Excel Column I of "Chemical - Turner 138kV Line (operating at 46kV): Water: 0038". Please explain the nature of these projects and verify whether it is related to the distribution or transmission function.

Response:

The Chemical - Turner 46 kV transmission line in Charleston, West Virginia, originally constructed in 1928, has served its useful life and requires complete replacement. This involves the retirement and removal of the APCo line and its rebuild as a WV Transco asset. The 46 kV line will be rebuilt to 138 kV standards (account 354 is for towers and fixtures). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-302:

WVTCO - Refer to AEP's response JI 1-202 Attachment 1, on the multiple line items that contain the long description in Excel Column I of "Chemical - Turner 138kV Line (operating at 46kV): Water: 0038". Please explain the nature of these projects and verify whether it is related to the distribution or transmission function. Laurie Spears

Response:

The Chemical - Turner 46 kV transmission line in Charleston, West Virginia, originally constructed in 1928, has served its useful life and requires complete replacement. This involves the retirement and removal of the APCo line and its rebuild as a WV Transco asset. The 46 kV line will be rebuilt to 138 kV standards (account 355 is for poles and fixtures). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-303:

WVTCO - Refer to AEP's response JI 1-202 Attachment 1, Excel row 135, with account long description of "BULLITT STREET - WASHINGTON STREET 69KV OPER @ 46KV; TRANSCO" and activity cost of \$2,738,240.95. Please explain the nature of this project and verify whether the it related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is construction the new Bullitt-Washington Street 46 kV line (account 355 is for poles and fixtures). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-304:

WVTCO - Refer to AEP's response JI 1-204 Attachment 1, Excel row 8, with account long description of "BULLITT STREET - WASHINGTON STREET 69KV OPER @ 46KV; TRANSCO" and activity cost of \$2,795,569.39. Please explain the nature of this project and verify whether it is related to the distribution or transmission function.

Response:

The Charleston Area Improvements Project will ensure reliable electric service in the downtown Charleston area and provide sufficient capacity for future growth in and around the downtown area. Based on present conditions, thermal violations have been identified under various N-1 conditions involving the loss of 46 kV transmission lines sharing underground duct banks in the Charleston downtown area. This project will address the identified thermal violations as well as provide increased long-term capacity and improved operational flexibility of the downtown Charleston area electrical system. This specific work order is construction of the new Bullitt-Washington Street 46 kV line (account 358 is for underground conductors and devices). All work was related to transmission function.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-305:

WVTCO - In reference to AEP's response to JI 1-206 Attachment 1, for the Cost Type items listed below, please provide a detailed breakout (workable Excel format) of every line entry, their associated amounts, and a description of the cost item for both 2016 and 2017:

- a. Employee Incentives
- b. Incentives
- c. Labor & Fringes
- d. Outside Services
- e. Shared Services

Response:

Please refer to JI-305 Attachments 1-10 for the requested information.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-306:

WVTCO - In reference to AEP's response to JI 1-208 Attachment 1, please explain the nature of the Labor & labor-related costs of \$303,999 and Outside Services of \$306,549 and provide a detailed breakout (workable Excel format) of these items.

Response:

Services are provided to WV T-Co primarily by AEP's Service Corporation (AEPSC), Labor and labor-related costs are billed to WV T-Co based on the services provided by AEPSC. Please refer to JI-306 Attachment 1 for the detail of labor and labor-related costs billed by AEPSC to WV T-Co.

WV T-Co uses a variety of service providers to meet the needs of the company, these types of costs are typically grouped and classified as Outside Services. Please refer to JI-306 Attachment 2 for the detail of Outside Services billed through AEPSC to WVT-Co for 2017.

Preparer of Response: Rhoderick Griffin

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-307:

WVTCO - Refer to AEP's response JI 1-212 Attachment 1, please provide a detailed explanation as to why the West Virginia Transmission Company does not include the following Account 454 Rent from Electric Property items:

- a. NEW ALBANY HD, \$5,873,487.20, Excel cell D5; and
- b. TULSA OFFICE, \$2,226,132.99, Excel cell I7.

Response:

The response to JI-1 212 was intended to display the revenue credits recorded on AEP WVTCO formula rate. This formula does not include revenue credits for the New Albany Transmission HQ or the Tulsa office because those assets are recorded on the books of AEP Ohio Power Trans Co and AEP Oklahoma TransCo, respectively . This can be ascertained by the "Unit" identifier on row four of the referenced attachment.

Preparer of Response: Diane Keegan

Date: 11/20/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
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**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-241:

In reference to AEP responses to JI 1-47 Attachment 1, AEP stated that the I&M -Transmission business unit's "Rockcreek 138/34.5kV Substation" was transferred to the distribution function because "The primary purpose of this station changed from transmission to distribution when the station was rebuilt from a 138/34.5kV station to a 138/12kV station." Please explain why there are amounts associated with this project recorded in AEP's response to JI 1-043 Attachment 1? In particular please see tab "JI Set 1-43 IM", Excel rows 1880, 1881, 1882, 1883. In addition, please verify that all other amounts in respect of this project were removed from plant and associated O&M FERC accounts.

Response:

The response to JI 1-043 reflects the balance of additions to transmission investments during 2017. The specific debits identified as part of the Rock Creek Project were additional capital charges related to the project that were subsequently included in amounts shown as transmission transfers in the 2017 I&M FERC Form 1, page 207, Col F.

To confirm this, see JI Set 2-241 Attachment 1 for the detail of the transfers by transmission plant account shown on FF1 Page 207, Col (F), Rows 48-58. This includes the detail of the transfers originally provided in the response to JI Set 1-047. See JI Set 2-241 Attachment 2 for the corresponding entries to the distribution plant accounts to which these assets were transferred. The specific line items shown in JI Set 1-43 Attachment 1 are highlighted in the attachments to this response, with the exception of the transfer for \$243.24. This transfer was not made until October, 2018 business, so it doesn't appear in the detail of the 2017 transfers provided in this response. See JI Set 2-241 Attachment 3 for detail of the transfer itself, which will comport with the detail provided in Attachments 1 & 2.

All amounts related to this project have been properly recorded. O&M related to these assets are accounted for on the distribution ledger.

Preparer of Response: David Hummel

Preparer of Response: Thomas Sulhan

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-242:

In reference to AEP responses to JI 1-47 Attachment 1, AEP stated that the OPCo -Transmission business unit's "Elliott – Meigs 69kV line" was transferred to the distribution function because "This was a transmission line with distribution underbuild. The transmission line was removed from a 20 mile section of the line so the investment in this section of the line was transferred to distribution." Please explain why there are amounts associated with this project recorded in AEP's response to JI 1-043 Attachment 1? In particular please see tab "JI Set 1-43 OPCo, Excel row 785. In addition, please verify that all other amounts in respect of this project were removed from plant and associated O&M FERC accounts.

Response:

In AEP's response to JI-1-047 Attachment 1, the Company lists details about the Elliott - Meigs 69kV line. Please the attachments listed below for the detail of the plant transfers shown in AEP Ohio's FERC Form 1, p 206, Col (F). The detail of the transfers for the Elliot-Meigs are provided in these attachments and show that it was made in February, 2017 business. The information referenced on Excel Row 785 in OCPos detail tab on AEP's response to JI-1-043 Attachment 1 pertain to transmission improvements made on this line subsequent to the transfer. The detail on line 785 specifically indicates that the amount thereon was a transfer from CWIP to account 106 that was made in December 2017 business.

See the following attachments to show the detail of all transfers by plant account as shown page 206, Col (F) of AEP Ohio's FERC Form 1 for 2017. The details of the specific transfers requested here and in JI Set 2-243 are highlighted in these attachments.

- 1) JI Set 2-242 Attachment 1 for the detail of the transfers in Transmission plant account 355 for 2017.
- 2) JI Set 2-242 Attachment 2 for the detail of the transfers in Transmission plant account 356 for 2017.
- 3) JI Set 2-242 Attachment 3 for the detail of the transfers in Distribution plant account 364 for 2017.
- 4) JI Set 2-242 Attachment 4 for the detail of the transfers in Distribution plant account 365 for 2017.

Once transferred to distribution, any O&M activity on this asset would be recorded as distribution O&M.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-243:

GENERAL - In reference to AEP responses to JI 1-47 Attachment 1, AEP stated that the OPCo - Transmission business unit's "Groves Road - Livingston 40kV Line" was transferred to the distribution function because "This was a transmission line with distribution underbuild. A portion of the overhead transmission line was replaced with underground so the investment in this portion of the line was transferred to distribution." Please explain why there are amounts associated with this project recorded in AEP's response to JI 1-043 Attachment 1? In particular please see tab "JI Set 1-43 OPCo, Excel rows 1039 with a total activity cost of \$1,981,925.51. In addition, please verify that all other amounts in respect of this project were removed from plant and associated O&M FERC accounts.

Response:

In JI-1-043 Attachment 1, in the OPCo tab, the excel row 1039 indicates an activity cost total of \$501.25; the Company is unclear as to the source of the \$1,981,925 requested herein. The detail supporting the 501.25 reflects the cumulative activity of miscellaneous transfers from CWIP to plant in service or transfers between FERC accounts 106/101 incurred on the Groves Road - Livingston Project. See the detail of the transfer requested herein in the attachments provided in the Company's response to JI Set 2-242.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-259:

JI-259. APCO - In reference to APCo's 2017 FERC Form 1, page 232.2, line 35, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that \$588,818 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing APCo's recovery of this regulatory asset in the transmission formula rate.

Response:

(a) The Patient Protection and Affordable Care Act and the related Health Care and Education Reconciliation Act enacted in March 2010 amended tax rules so that a portion of the employer health care costs that are reimbursed by the Medicare Part D prescription drug subsidy are no longer deductible by the employer for federal income tax purposes effective for years beginning after December 31, 2012. In March 2010 AEP reduced deferred tax assets offset by net tax regulatory assets. AEP changed its retiree prescription drug program from the Medicare Part D subsidy to the Employer Group Waiver Plan (EGWP) in 2013. With the adoption of the EGWP in 2013, there was no longer a temporary difference to reverse in the future and the tax regulated asset was reclassified as a regulated asset.

(b) Based on the operation of the formula, the labor allocated functional share of this expense is being recovered in the formula rate.

(c) There is no FERC docket specifically addressing the amortization of this deferred asset.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-265:

I&M - In reference to I&M's 2017 FERC Form 1, page 232.1, line 35, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that \$1,020,135 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing I&M's recovery of this regulatory asset in the transmission formula rate.

Response:

Please see the response to JI Set 2-259.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-268:

JI-268. KPCO - In reference to KPCo's 2017 FERC Form 1, page 232.1, line 7, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that \$216,620 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing KPCo's recovery of this regulatory asset in the transmission formula rate.

Response:

Please see the response to JI Set 2-259.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-269:

JI-269. KGPCO - In reference to KGPCo's 2017 FERC Form 1, page 232, line 13, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that 30,531 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing KGPCo's recovery of this regulatory asset in the transmission formula rate.

Response:

Please see the response to JI Set 2-259.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-274:

JI-274. OPCO - In reference to OPCo's 2017 FERC Form 1, page 232.1, line 39, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that \$1,032,204 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing OPCo's recovery of this regulatory asset in the transmission formula rate.

Response:

See the response to JI Set 2-259.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-275:

JI-275. WPCO - In reference to WPCo's 2017 FERC Form 1, page 232, line 22, SFAS 106 Medicare Subsidy, please provide the following:

- a. Explain the nature of this regulatory asset.
- b. Column (e) indicates that \$38,738 was written off to Account 926. Are these write-offs recovered in the transmission formula rate?
- c. If the answer to part b. above is yes, provide the FERC docket number authorizing WPCO's recovery of this regulatory asset in the transmission formula rate.

Response:

Please see the response to JI Set 2-259.

Preparer of Response: Diane Keegan

Preparer of Response: Russell Doyle

Date: 11/29/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-293:

JI-293. OPTCO - In reference to AEP's response to JI 1-183 Attachment 1, please explain the nature of the Inventory write-off of \$1,160,038 and provide a detailed breakout (workable Excel format) of the item.

Response:

This wire was ordered for a project but before construction started, Engineering redesigned the project and revised the wire to other specifications. At that time, the wire was returned to inventory thinking we may be able to use it on another project in the future. After numerous meetings and discussions with Engineering and Standards, it was determined that the wire was non-usable. Supply Chain contacted the manufacture for possible return, without success. As a result, the wire was written-off. The material consisted of 268,466 feet of ACSR, TW, 1926.9 MCM, Type 13 Cond, Class A Glav Core wire.

Preparer of Response: Rhoderick Griffin

Date: 11/30/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-238:

GENERAL - In reference to AEP responses to JI 1-1 and 1-2, please identify the specific FERC accounts that were impacted by the change in accounting for labor allocations associated with Load Dispatch costs. In addition, please provide the amounts for the O&M/Capital splits during 2016 and 2017, by FERC account.

Response:

The decrease in this charge was driven by a decrease in account 561.2 "Load Dispatch, Monitor and Operate the Transmission System", Which dropped \$6.4 million dollars. Please see JI Set 2-238 Attachment 1 for a summary of the account 561 charges for the east operating companies for 2017 vs. 2016, as sourced from each Company's FERC Form 1.

The Company cannot provide the amounts of Capital vs. O&M splits at the FERC account level for 2016 and 2017. However, please see JI Set 2-238 Attachment 2 for the change in the split between capital and O&M for the AEP East Operating Company Transmission functions.

Preparer of Response: Diane Keegan

Preparer of Response: Rhoderick Griffin

Preparer of Response: David Gahler

Date: 12/6/2018

**East Joint Interveners (AMP et al) Transmission Formula Update
FERC Docket No ER17-405-000; ER17-406-000**

**Responses to
Set AMP-JI Set 2 of Data Requests**

Data Request JI Set 2-276:

JI-276. IMTCO - Refer to AEP's response to JI 1-155 Attachment 1, and the following items: Excel row 241, item "T/IMTC/DC COOK 765: REPLACE FAILED TR4 PH.2 UNDER WARRANTY" and activity cost of \$67,716.53 and Excel row 842, item "SULLIVAN (TR#2): HICO PH A - FAULT/FAILURE - UNDER WARRANTY", activity cost of \$118,988.26. Please respond to the following questions:

- a. Please provide a detailed explanation of what the warranty, in each instance, covered.
- b. Did IM Transco recover replacement costs or equipment through the warranty? If not, please explain why not.
- c. Please state the total replacement costs of these items.
- d. How much of the total replacement costs did the warranty cover?
- e. How much of the total replacement costs was I&M Transco responsible for?

Response:

The referenced line items refer to two separate incidents in which transformers failed but were covered by warranty. See the headers 1) and 2) for discussion of each of these issues. In addition, see the attachments related to the first issue as described.

1) Item "SULLIVAN (TR#2): HICO PH A - FAULT/FAILURE - UNDER WARRANTY", activity cost of \$118,988.26 - Work Order 421716297

According to Asset Suite, work order 421716297 was for "SULLIVAN (TR#2): HICO PH A - FAULT/FAILURE - UNDER WARRANTY".

This work order was for the replacement of a failed 765kV autotransformer, HICO S/N 10065182-0002. It was one of seven 765/345kV 750 MVA single-phase autotransformers built by HICO and placed into service in the Sullivan yard in transformer bank T2.

- The failed transformer was one of 4 units purchased on WO 42166082-09 / PO 2657056-006 / BPID 32736. Total PO amount was \$13,227,644. The other 3 units were purchased on PO 2657056-001.
- Date of manufacture was October 2016.
- Date of delivery to the pad at DC Cook site was February 25, 2017.
- Date of energization was June 5, 2017.
- Date of failure was June 7, 2017, during the soaking period. No load was on the transformer at the time.
- A new HICO 765/345kV 750 MVA single-phase autotransformer, previously en-route to another station, was diverted to Sullivan as replacement.

See JI Set 2-276 Attachment 1 for a summary of costs associated with the detail of charges of \$118,988.26 on workorder 42716297, which is further described in item 1) below. This summary, which reflects the recording on the general ledger of the transfer from the 107 to 106, shows that the \$118,K of cost was recorded in December 2017, but a credit payment as well as straggling charges were still being incurred on this work order in 2018.

In addition, see JI Set 2-276 Attachment 2 for a more granular presentation of the detail of the charges presented in Attachment 1. This reflects the recordation of the charge to the 107 account in the plant accounting system. The amounts in both attachments have been color coded to show how they tie together.

2) Item “T/IMTC/DC COOK 765: REPLACE FAILED TR4 PH.2 UNDER WARRANTY” and activity cost of \$67,716.53 - WORK ORDER 43244584:

This scenario involved two failed transformers, each of which was covered by a 5-year warranty on the entire transformer plus, 2 additional years on the core and coil. During the first two years after being placed into service, all in and out charges (i.e. costs for removal, disassembly, and reinstallation) are covered as well. In and out charges are not covered after the two years are up, but during the entire 5 (or 7) year coverage, Hyundai was responsible for all transport costs if units have to be shipped back to the factory. The transformer described below that failed in 2015 fell within the first two years of warranty coverage, but the failure of the second transformer in 2016 occurred outside of it, about 29 months after the in-service date. More details are presented below in this response.

As shown in the following table, the cost of \$67.7K at issue in this request was recovered in the warranty settlement with the transformer manufacturer.

Sum of amount	Task Type		
work_order	Investment	Removal	Grand Total
42344584	\$67,717	-	\$67,717
42363458	\$5,291,446	\$2,351,828	\$2,939,618
42536201	\$3,623,707	\$7,155,271	\$3,531,564
Grand Total	\$8,982,870	\$9,507,099	-\$524,229

Work order 42344584 was for “T/IMTC/DC COOK 765: REPLACE FAILED TR4 PH.2 UNDER WARRANTY”, and work order 42363458 was for “DC COOK REPLACE

TRANSFORMER 4 PHASE 2". The specific work done under 42344584 was to move the failed transformer to a temporary pad until the manufacturer could haul it away.

- These work orders were for replacement of a failed 765kV autotransformer, Hyundai S/N 20104912TKG004-001. It was one of four 765/345kV 750 MVA single-phase autotransformers built by Hyundai and placed into service in the DC Cook yard in transformer bank T4.
- The failed phase 2 unit was one of 4 units purchased on WO 41613967-09 / PO 386296 / PVID 33315. Total PO amount was \$9,009,197.83; transformer unit price was \$2,168,354.46.
- Date of manufacture was January 2013.
- Date of delivery to the pad at DC Cook site was May 23, 2013.
- Date in service per ISIS was November 6, 2013.
- Date in service per TPView was October 28, 2013.
- Date of failure was January 14, 2015.
- A new HICO 765/345kV 750 MVA single-phase autotransformer, previously en-route to another station, was diverted to DC Cook as replacement.

According to Asset Suite, work order 42536201 was for "COOK 765/345 FAILURE PHASE 3".

- This work order was for replacement of a failed 765kV autotransformer, Hyundai S/N 20104912TKG004-003. It was one of the same four 765/345kV 750 MVA single-phase autotransformers built by Hyundai and placed into service in the DC Cook yard in transformer bank T4.
- The failed phase 3 unit was one of 4 units purchased on WO 41613967-09 / PO 386296 / PVID 33315. Total PO amount was \$9,009,197.83; transformer unit price was \$2,168,354.46.
- Date of manufacture was January 2013.
- Date of delivery to the pad at DC Cook site was May 23, 2013.
- Date in service per ISIS was November 6, 2013.
- Date in service per TPView was October 28, /2013.
- Date of failure was April 8, 2016.
- Three new HICO 765/345kV 750 MVA single-phase autotransformers were moved from another project at Dumont station and sent to DC Cook.

Preparer of Response: John Lowry

Preparer of Response: Laurie Spears

Date: 12/6/2018