

Submission of Supplemental Projects for Inclusion in the Local Plan

Need Number: DEOK 2020-003

Process Stage: Local Plan Submission 04-12-2021

Previously Presented:

Solutions Meeting 11-20-2020

Needs Meeting 7-17-2020

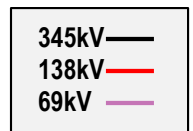
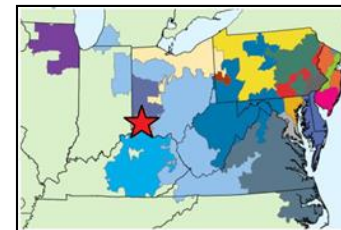
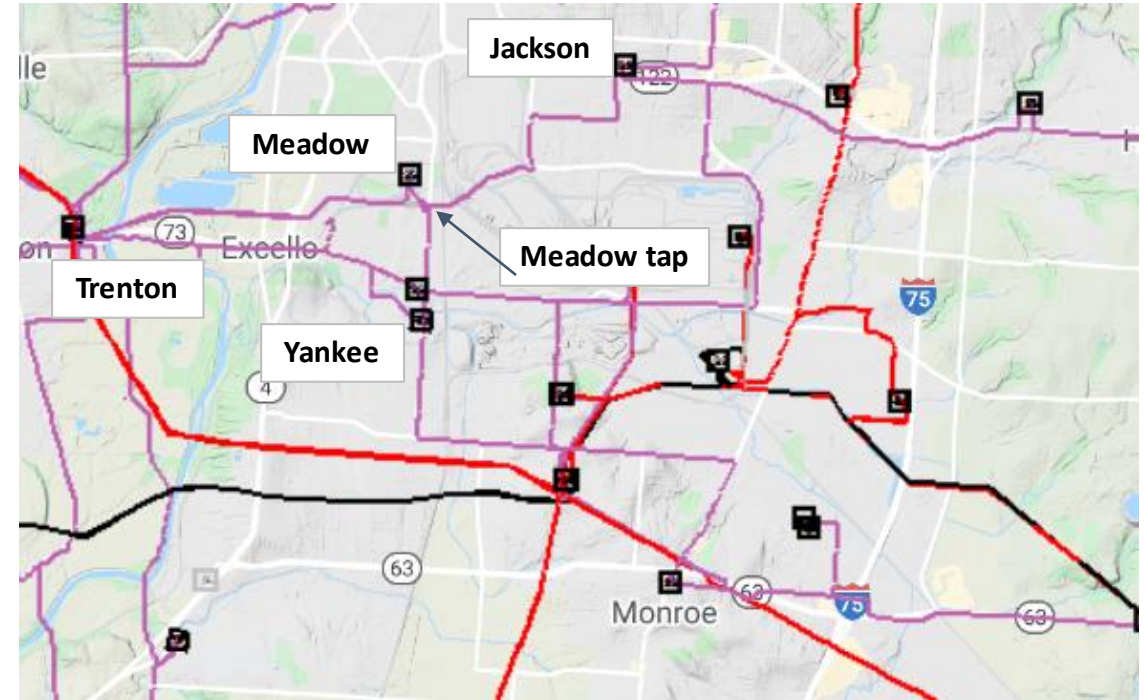
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Problem Statement:

A customer fed by Meadow substation is expecting a 10MW load increase by the summer of 2022. Meadow has two incoming 69kV feeders, one from Trenton and a normally opened one from Yankee-Jackson via the tap to Meadow. If the feeder from Trenton is opened Meadow throws over to the feeder from the tap. In this state the additional 10MWs of customer load will drive the Yankee to Meadow tap section of the feeder to 106% of its emergency rating.





DEOK Transmission Zone M-3 Process

Need Number: DEOK 2020-003

Process Stage: Local Plan Submission 04-12-2021

Selected Solution:

Reconductor the one mile section of feeder from Yankee to Meadow tap. Replace 8 poles to achieve proper clearance. Capacity of the line will increase from 97 MVA to 151 MVA.

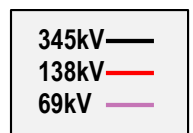
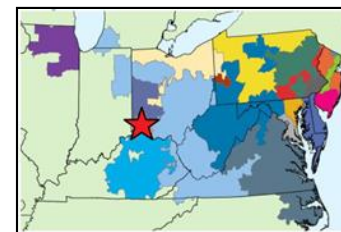
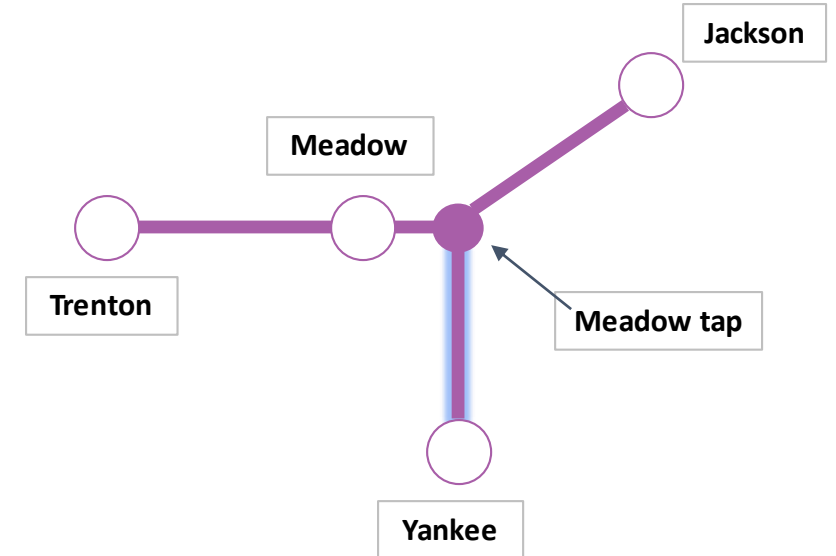
Transmission Cost Estimate: \$974,771

Proposed In-Service Date: 12-31-2021

Supplemental Project ID: s2424

Project Status: Engineering

Model: 2020 RTEP



Need Number: DEOK 2020-008

Process Stage: Local Plan Submission 04-12-2021

Previously Presented:

Solutions Meeting 01-15-2021

Needs Meeting 11-20-2020

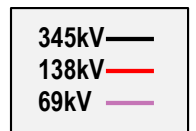
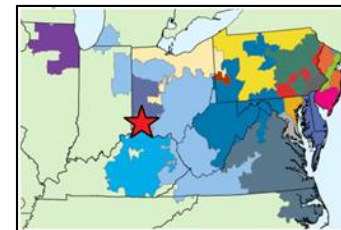
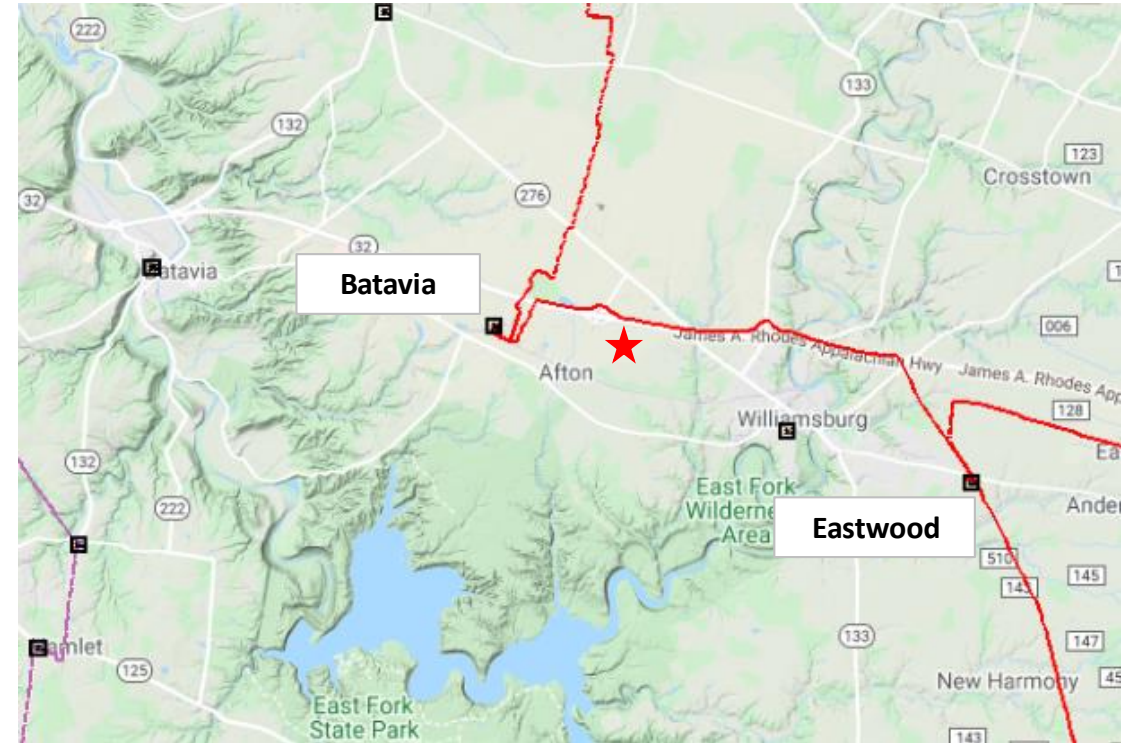
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Problem Statement:

Duke Energy Distribution has requested a new delivery point near Half Acre Road in Clermont County, OH. A new industrial customer has requested 36 MW of distribution service by 10-01-2022. The new load exceeds the capacity of existing distribution facilities in the area.



Need Number: DEOK 2020-008

Process Stage: Local Plan Submission 04-12-2021

Selected Solution:

Install a mobile 138/34kV transformer to serve the customer until the substation is completed.

Install a new substation with two 138kV breakers, one circuit switcher, one 138/34kV 60MVA transformer, a control building, and two distribution feeder exits.

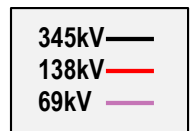
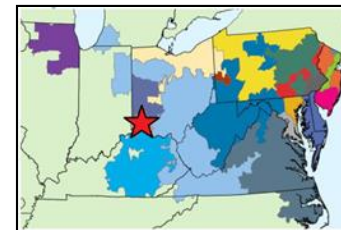
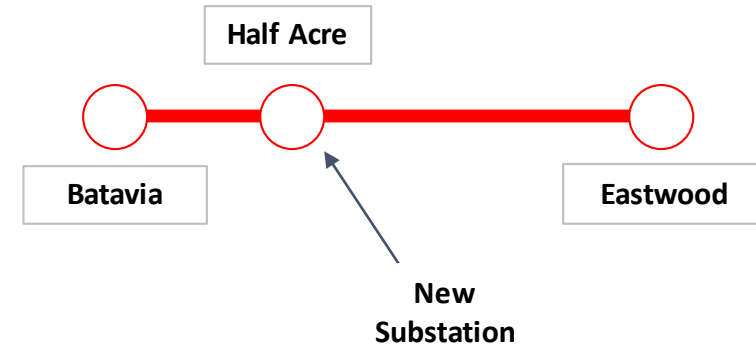
Transmission Cost Estimate: \$10,284,854

Proposed In-Service Date: 12-31-2022

Supplemental Project ID: s2425

Project Status: Engineering

Model: 2020 RTEP



Need Number: DEOK 2021-004

Process Stage: Local Plan Submission 06-04-2021

Previously Presented:

Solutions Meeting 04-16-2021

Needs Meeting 03-19-2021

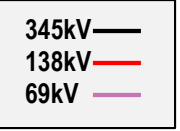
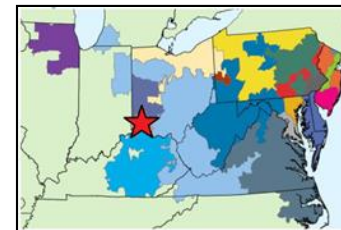
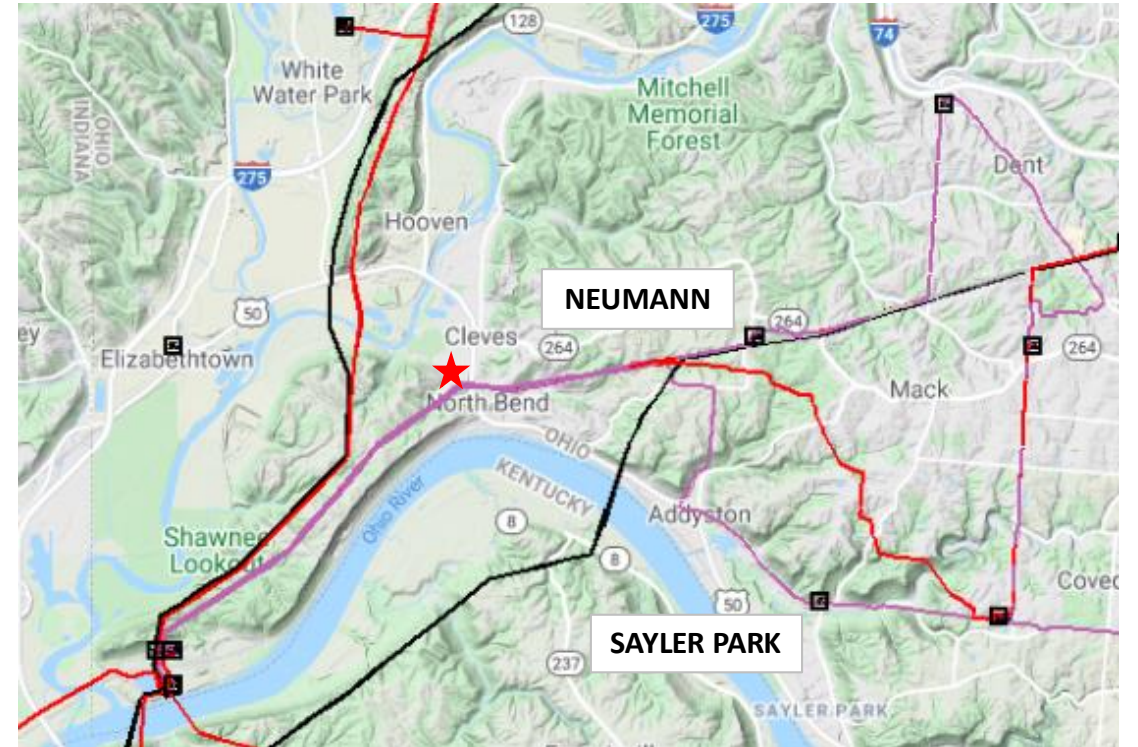
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Problem Statement:

Duke Energy Distribution has asked for a new delivery point in North Bend, OH. The distribution transformers that serve this area from Neumann and Saylor Park are peaking at 100% of rated capacity. Several large residential developments are planned or are currently under construction in this area.





DEOK Transmission Zone M-3 Process North Bend

Need Number: DEOK 2021-004

Process Stage: Local Plan Submission 06-04-2021

Selected Solution:

Install a new substation, North Bend. Loop the nearby Miami Fort – Midway 138 kV feeder through North Bend switch connecting the feeder to the bus. Install a 138 kV circuit switcher, a 138/13 kV 22 MVA transformer, a 13 kV circuit breaker for the low side of the transformer, and 13 kV bus work with circuit breakers for two distribution line exits. Reconfigure distribution lines in the area to include the new capacity available from North Bend substation.

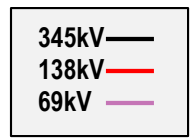
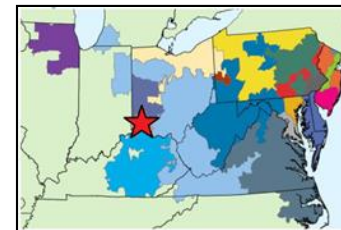
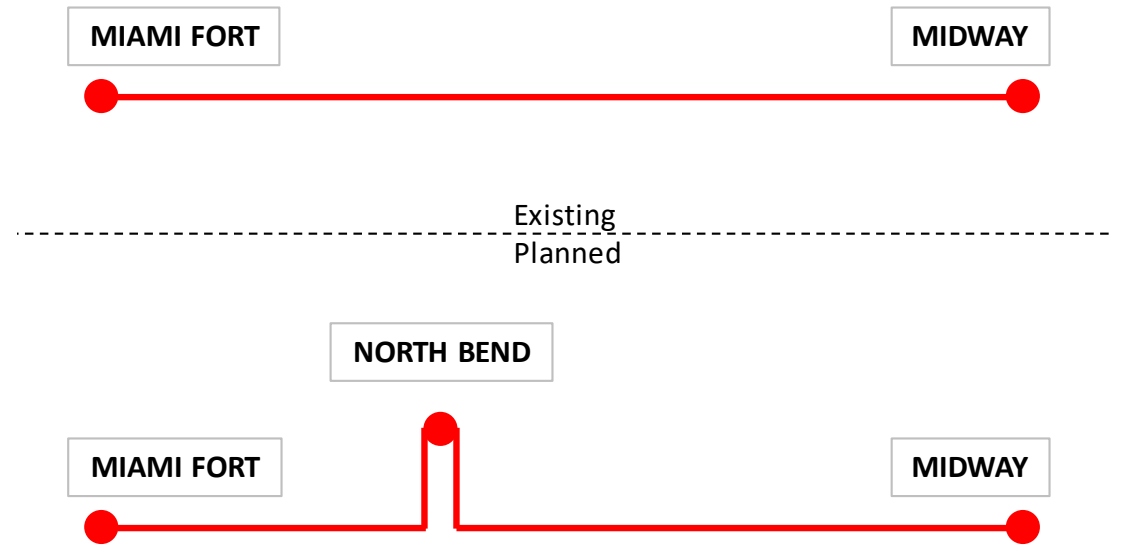
Transmission Cost Estimate: \$7.2M

Proposed In-Service Date: 12-01-2023

Supplemental Project ID: s2512

Project Status: Engineering

Model: 2020 RTEP



Need Number: DEOK 2021-005

Process Stage: Local Plan Submission 06-04-2021

Previously Presented:

Solutions Meeting 04-16-2021

Needs Meeting 03-19-2021

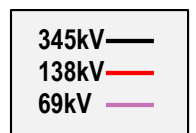
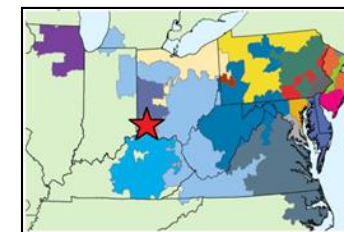
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Problem Statement:

Duke Energy Distribution has asked for additional capacity at Newtown substation. Obsolete 4 kV distribution facilities at Madeira, Milford, Clertoma and Terrace Park are being retired. 10 MVA of 13 kV capacity is required.



Need Number: DEOK 2021-005

Process Stage: Local Plan Submission 06-04-2021

Selected Solution:

Expand Newtown substation. Move the Beckjord - Newtown 138 kV feeder by removing the existing line switch, take-off tower and foundations, and installing a new line switch and take-off tower with new foundations. Install new 138 kV bus work, two bus switches and a motor operated air break switch to feed a new 138/13 kV 22 MVA transformer. Install 13 kV switchgear. Reconfigure distribution lines in the area to be fed by the new transformer and switchgear.

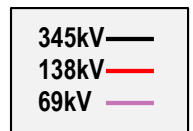
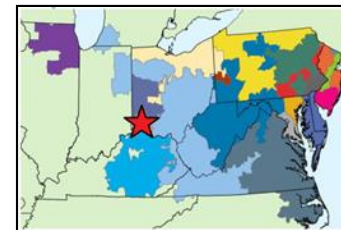
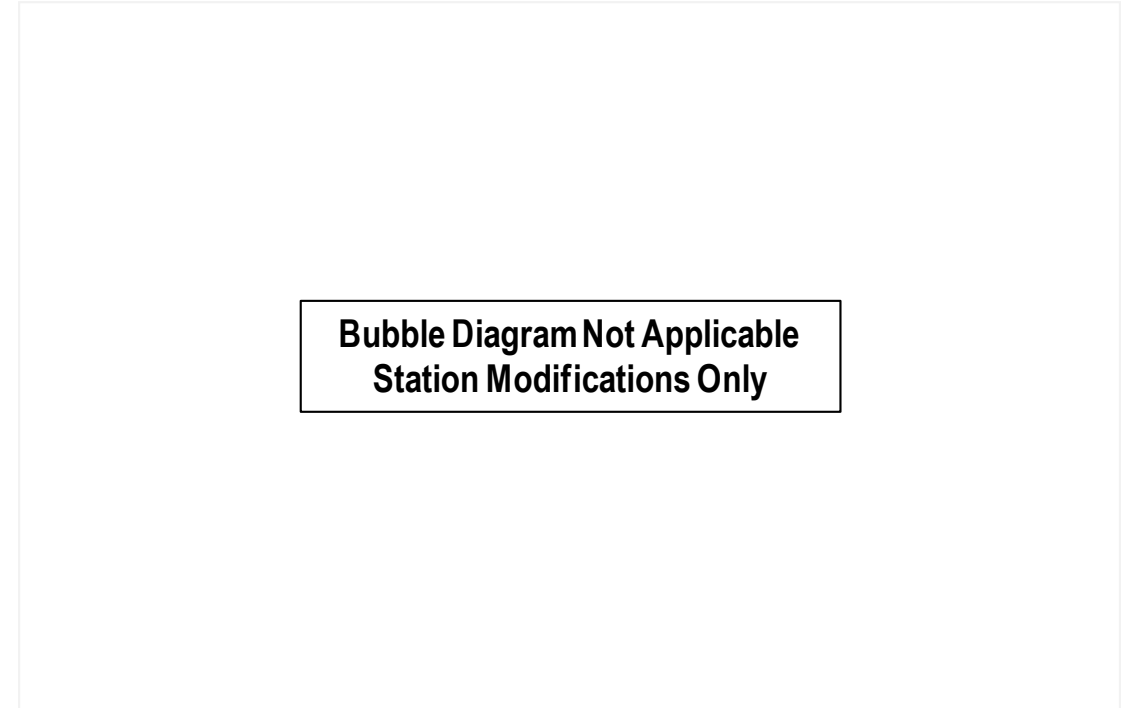
Transmission Cost Estimate: \$1.7M

Proposed In-Service Date: 12-01-2023

Supplemental Project ID: s2513

Project Status: Engineering

Model: 2020 RTEP



Need Number: DEOK 2020-004

Process Stage: Local Plan Submission 11-04-2021

Previously Presented:

Solutions Meeting 08-10-2021

Needs Meeting 07-17-2020

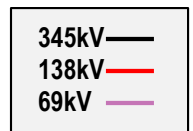
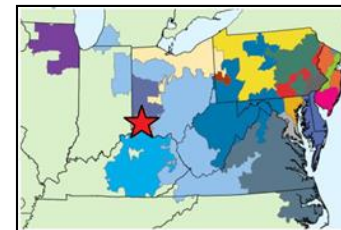
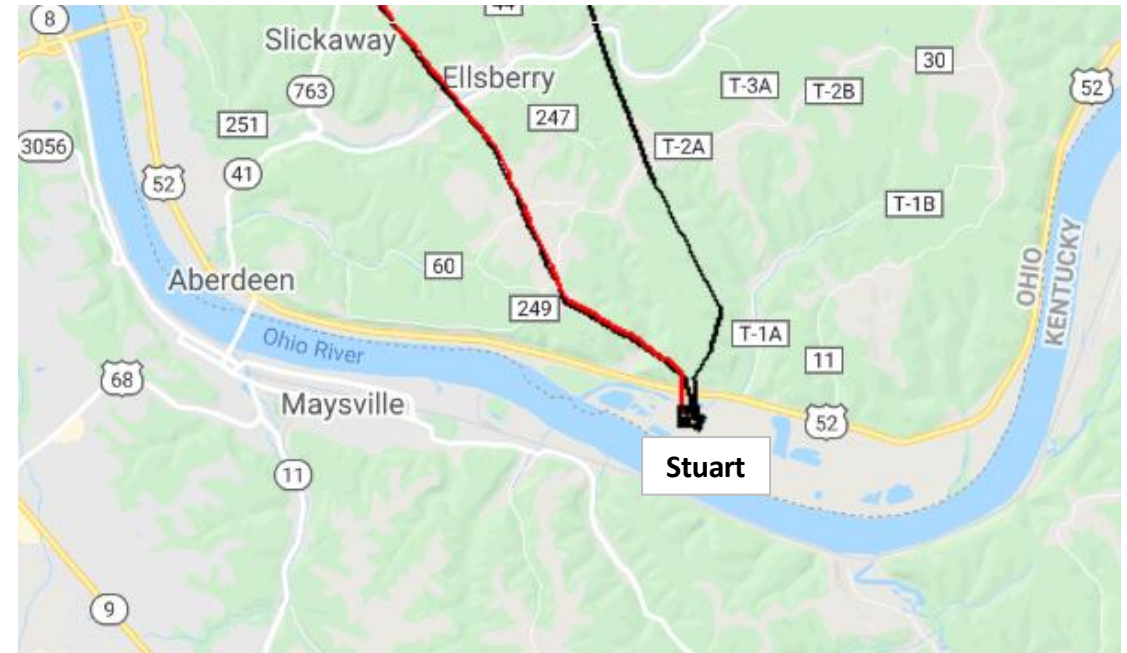
Project Driver: Equipment Condition, Performance and Risk, Operational Flexibility and Efficiency

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slides 5-7

Problem Statement:

In the early 1960s Cincinnati Gas & Electric (Duke Energy), Columbus & Southern Ohio Electric (AEP) and Dayton Power & Light (AES) formed a joint venture to share the costs of building new power infrastructure. The construction of Stuart Station was one of the shared projects. In 2018 the joint venture was dissolved with the assets split among the companies. Duke Energy received the 138 kV section of the substation at Stuart. Going into service in the early 1970s, this section of the substation has a 345/138 kV transformer that is switch connected to a DP&L 345 kV bus, three 138 kV circuit breakers connected to a straight bus and a 138/69 kV transformer that is switch connected to an AEP feeder. Duke Energy needs to isolate, protect and control its section of the substation. The breakers are oil filled and obsolete.



Need Number: DEOK 2020-004

Process Stage: Local Plan Submission 11-04-2021

Selected Solution:

Install a 345 kV breaker between the AES bus and the 345/138 kV transformer. Replace the three oil filled 138 kV breakers. Reconfigure the 138 kV bus into a three position ring. Terminate in the three positions the 345/138 kV transformer, the 138 kV feeder from Brown substation, and the 138/69 kV transformer. Install a 69 kV breaker connecting the 138/69 kV transformer to the AEP feeder. Build a new control building to house protection, controls and communications equipment. Install fencing to separate Duke Energy facilities from AES facilities.

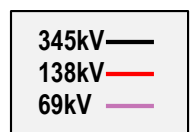
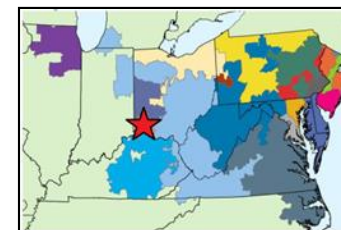
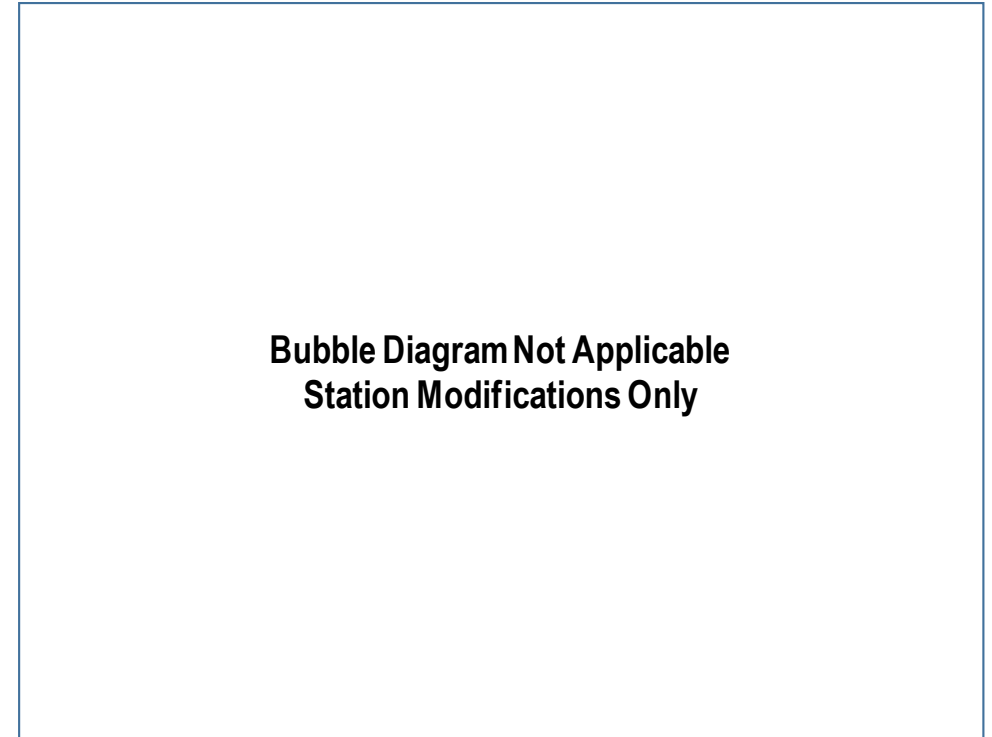
Estimated Transmission Cost: \$9.4M

Supplemental Project ID: s2586

Projected In-Service Date: 01-20-2023

Project Status: Engineering

Model: 2020 RTEP Summer



Revision History

4/12/2021 – V1 – Added S2424 and S2425

6/4/2021 – V2 – Added Slides #6-#9, S2512 and S2513

11/4/2021 – V3 – Added Slides #10-#11, S2586