

Sub Regional RTEP Committee: Western DEOK Supplemental Projects

December 16, 2022

Changes to the Existing Projects



DEOK Transmission Zone S1782 Additional Scope

S1782:

Posted to 2019 DEOK Local plan to address Need Number DEOK-2018-001.

Process Stage: Solutions Meeting 12-16-2022

Previously Presented:

Solutions Meeting 01-11-2019

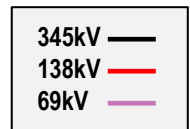
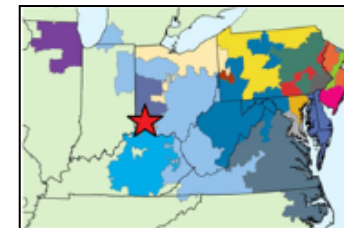
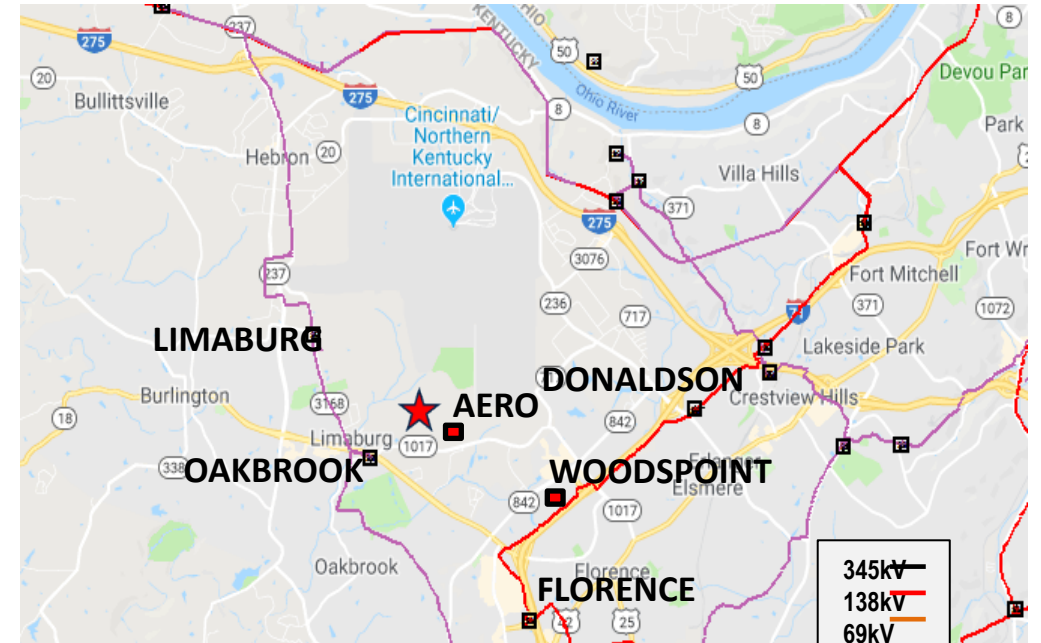
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Original Scope:

Install a new 138kV, 3-breaker ring bus substation, Woodspoint. Install a new 138kV, 6-breaker ring bus, Aero, near Amazon Prime Hub. Install new 138kV lines from Woodspoint to Aero, and from Aero to Oakbrook. The lines will be rated at 301MVA. At Aero install four 138/13kV, 22MVA transformers. At Oakbrook install one 138/69kVA, 150MVA transformer with high side and low side breakers.





DEOK Transmission Zone S1782 Additional Scope

S1782

Process Stage: Solutions Meeting 12-16-2022

Previously Presented: Solutions Meeting 01-11-2019

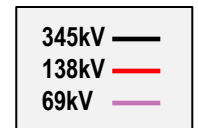
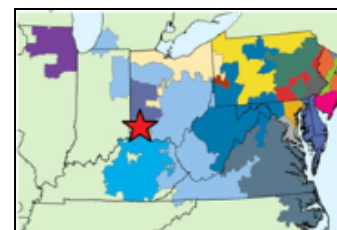
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

Problem Statement:

Subsequent to submitting the Aero/Woodspoint project (DEOK-2018-001, s1782) to the 2019 Duke Energy Local Plan, a thermal violation was found on the 69 kV circuit from Buffington to Oakbrook for the loss of the 138 kV circuit from Aero to Woodspoint. Need DEOK-2020-001 addressed this violation in the February 2020 PJM Subregional RTEP-Western meeting. Analysis by PJM found that the violation occurred with incremental loading from the Aero/Woodspoint project and was not tied to the load growth from DEOK-2020-001. PJM advised that need DEOK-2020-001 should be withdrawn and any scope to address the Buffington to Oakbrook violation be amended the solution for the Aero/Woodspoint project. Need DEOK-2020-001 was withdrawn in the April 2020 PJM Subregional RTEP-Western meeting.



Additional Scope:

At Hebron substation expand the box structure and install two new 69 kV, 2000A breakers to create a 4-position ring bus with individual positions for a circuit to Downing and a circuit to Oakbrook. Retire a feeder section from Downing tap to structure HL-752 (0.67mi.). Construct a new section of feeder from Hebron to structure HL-752 with 954 ACSR on steel poles (1.75 mi.). Raise two other circuits on shared structures in the corridor near the former Downing tap to allow the new feeder to pass under. At Levi replace 500 MCM strain bus with 954 ACC conductor, remove bus tie switch SW4250. Replace drops into and out of Limaburg with 954 ACSR conductor. At Limaburg replace 500 MCM strain bus with 954 ACC conductor, remove bus tie switch SW610, close normally open switch SW620 to complete the circuit to Oakbrook. Rebuild the section of feeder from Midvalley to Oakbrook with 954 ACSR on steel poles (1.5 mi.). Retire a feeder section from Oakbrook to Dixie tap (5.70mi.). The ratings on the circuit from Hebron to Oakbrook will increase from 54/54 MVA to 133/133 MVA, S/N/E, and from 69/69 MVA to 166/166 MVA W/N/E. (**S1782.1**)

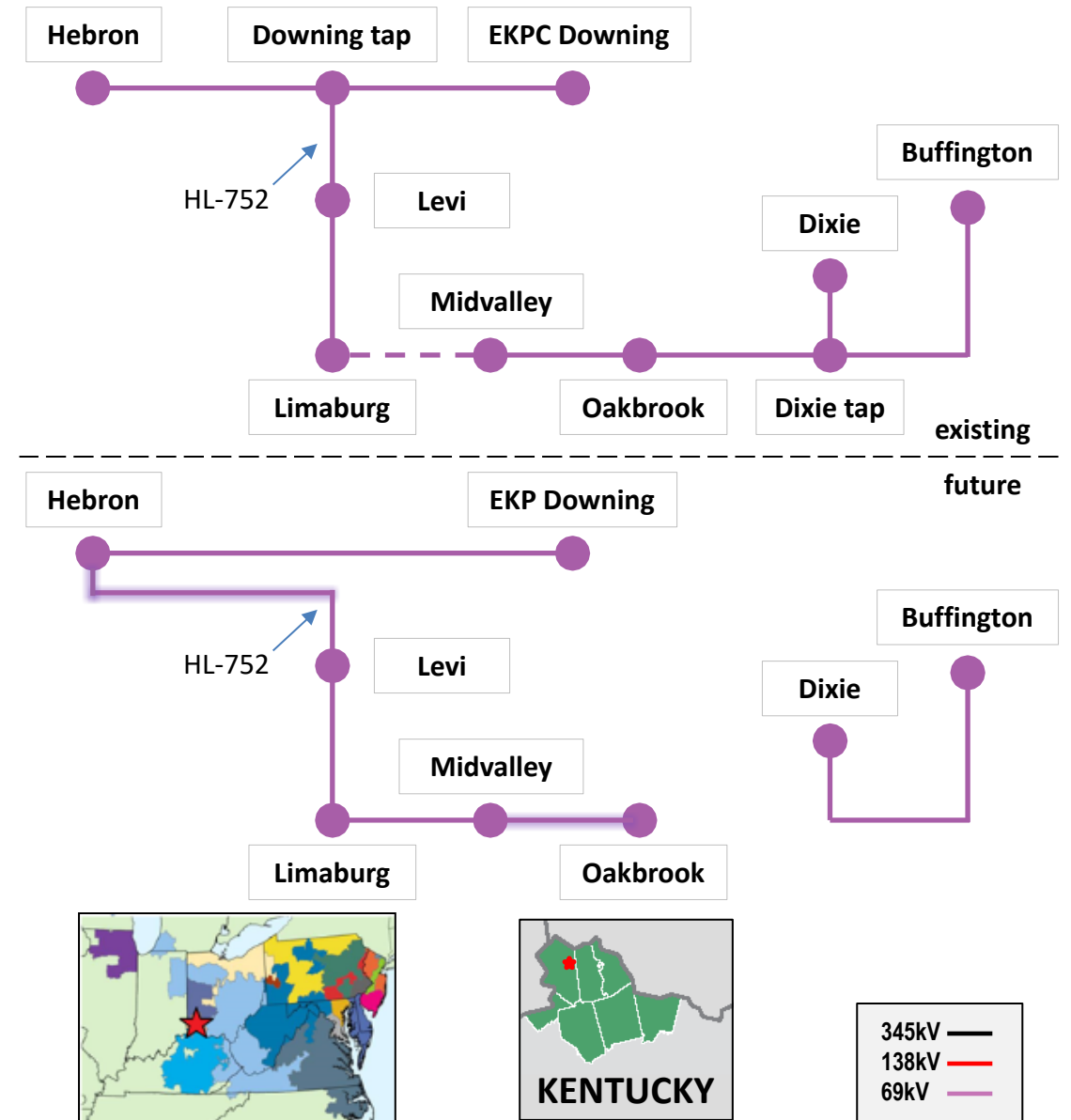
Alternatives: Keeping the Downing tap was considered. However, the Hebron to Oakbrook circuit is the only transmission available in this high growth area. The ring bus separates the circuits increasing the reliability of both the Hebron-Downing circuit and the Hebron-Oakbrook circuit.

Ancillary Benefits: Operational options for switching, provides more options to deal with non-standard operating conditions, improves the system's ability to absorb and recover from an interruption, and reconfigures infrastructure to limit load loss.

Estimated Transmission Cost: \$32,001,508

Projected In-Service Date: 04-22-2026

Project Status: Engineering



Appendix

High Level M-3 Meeting Schedule

Assumptions	Activity	Timing
	Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
	Stakeholder comments	10 days after Assumptions Meeting
Needs	Activity	Timing
	TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
	Stakeholder comments	10 days after Needs Meeting
Solutions	Activity	Timing
	TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
	Stakeholder comments	10 days after Solutions Meeting
Submission of Supplemental Projects & Local Plan	Activity	Timing
	Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
	Post selected solution(s)	Following completion of DNH analysis
	Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
	Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

12/6/2022 – V1 – Original version posted to pjm.com