

# Sub Regional RTEP Committee: Western DEOK Supplemental Projects

April 21, 2023

# Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process



# DEOK Transmission Zone M-3 Process Mitchell

**Need Number:** DEOK-2023-003

**Process Stage:** Needs Meeting 04/21/2023

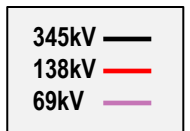
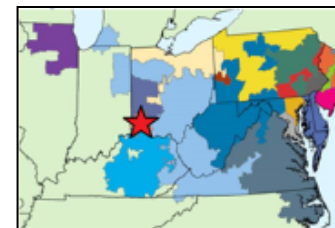
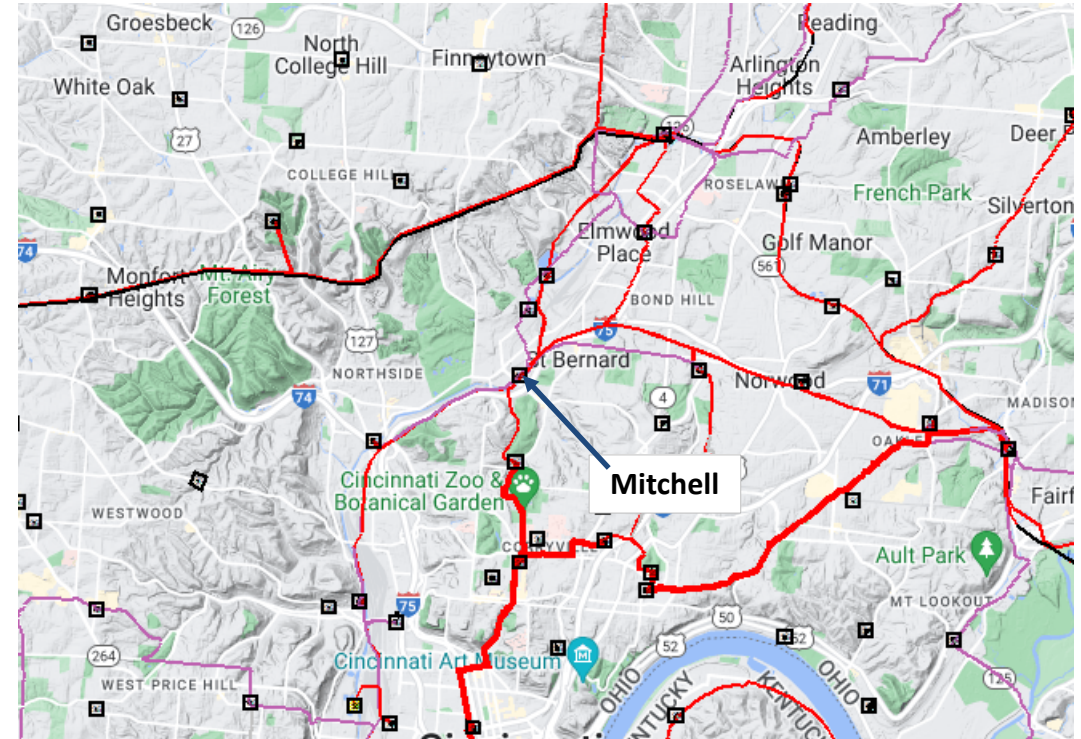
**Project Driver:** Customer Service

**Specific Assumption Reference:**

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 5

**Problem Statement:**

Duke Energy Distribution has requested additional capacity delivery through Mitchell substation. There is only one 138/13 kV, 22MVA transformer which connects to all three distribution feeders. The transformer is expected to start exceeding nameplate in 2025.





# DEOK Transmission Zone M-3 Process Decoursey

**Need Number:** DEOK-2023-004

**Process Stage:** Needs Meeting 04/21/2023

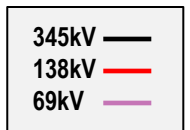
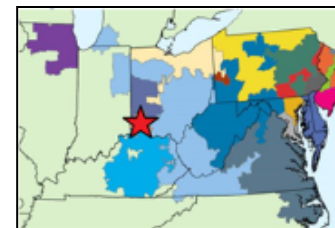
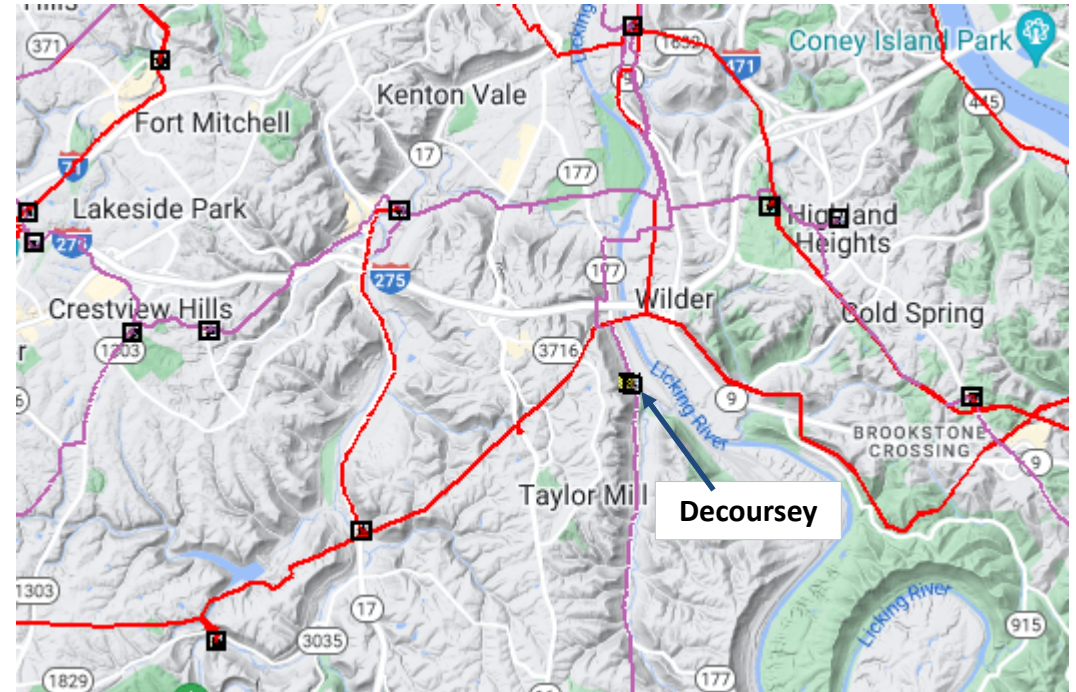
**Project Driver:** Equipment condition, performance and risk

**Specific Assumption Reference:**

Duke Energy Ohio & Kentucky Local Planning Assumptions slides 6-7

**Problem Statement:**

Decoursey substation was originally constructed in the 1940's as a 33-4 kV substation. The electrical equipment was converted to 69-13 kV in 1970, but the structural supports were never modified to accommodate the higher voltages. Pole-mounted switches are utilized outside the station fence and a series of hydraulic and electronic reclosers currently provide circuit protection. There is no SCADA; outage notification is only provided by customer call. The single 69/13 kV, 10 MVA transformer that serves 2069 customers is routinely operated at or exceeding its rated capacity. There is no station breaker and not enough space to install one on the existing steel which is rusted. The station layout does not meet minimum approach distance standards. This land-locked station is on a hillside and has no room for expansion.









# DEOK Transmission Zone M-3 Process Merrel

**Need Number:** DEOK-2023-006

**Process Stage:** Needs Meeting 04/21/2023

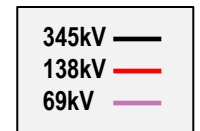
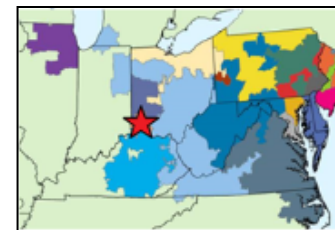
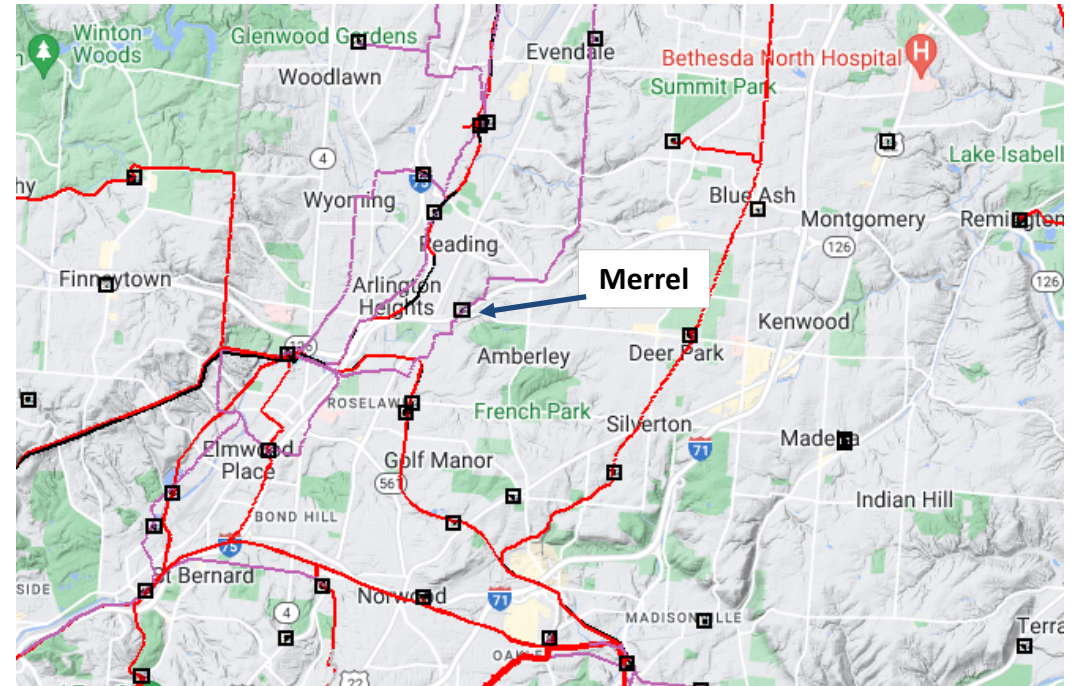
**Project Driver:** Customer Service

**Specific Assumption Reference:**

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 5

**Problem Statement:**

Merrel substation has two 69/13 kV, 10 MVA transformers that feed mostly industrial load. TB1 is loaded to 85% and TB2 has exceeded nameplate capacity several times in the last few summers. An industrial customer is expanding and has asked for an additional 5 MVA of service by the first quarter of 2027, with an expectation that 14 MVA may eventually be needed. The substation is land locked and lacks adequate safety clearances such that a complete substation outage is needed for maintenance. There are no options in the area to tie out customer load, or isolate substation equipment without the customer opening their switches.



# Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process



# DEOK Transmission Zone M-3 Process Greentree

**Need Number:** DEOK-2021-007

**Process Stage:** Solutions Meeting 04-21-2023

**Previously Presented:** Needs Meeting 06-15-2021

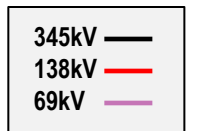
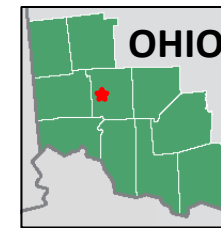
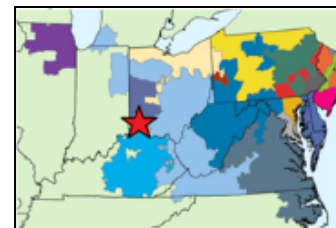
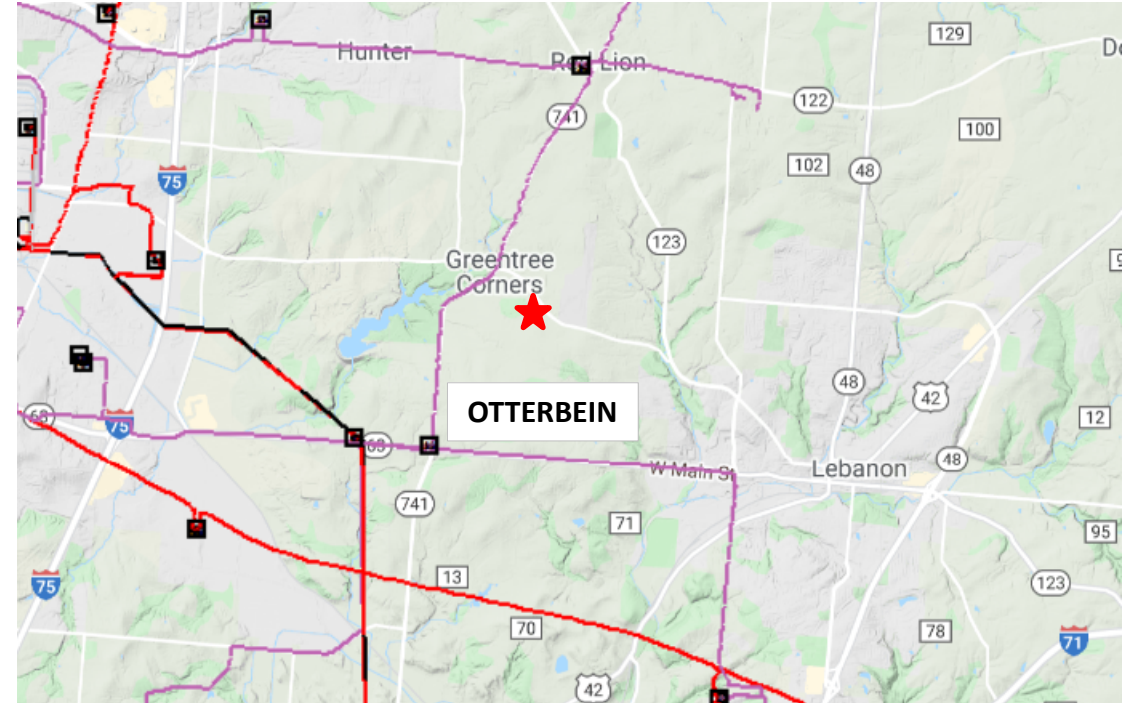
**Project Driver:** Customer Service

**Specific Assumption Reference:**

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

**Problem Statement:**

Duke Energy Distribution has asked for a new delivery point near Greentree road in Warren County, Ohio. Phase 1 of a 4,500 unit residential and light commercial community is currently under construction. Load growth of 2 MW per year is expected. This will exceed the name plate capacity of the local distribution facilities at Otterbein in 2024.







# DEOK Transmission Zone M-3 Process Greentree

**Need Number:** DEOK-2021-007

**Process Stage:** Solutions Meeting 04-21-2023

**Previously Presented:** Needs Meeting 06-15-2021

**Project Driver:** Customer Service

**Specific Assumption Reference:**

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 9

### Potential Solution:

Build Greentree, a new 69 kV substation to serve the area load. Loop the Shaker Run – Red Lion feeder into/out of the substation. Greentree will have a straight bus design with line disconnects on each end controlled by an automatic throw-over scheme. A bus disconnect in series with a circuit switcher will connect a 69/13 kV, 22 MVA distribution transformer.

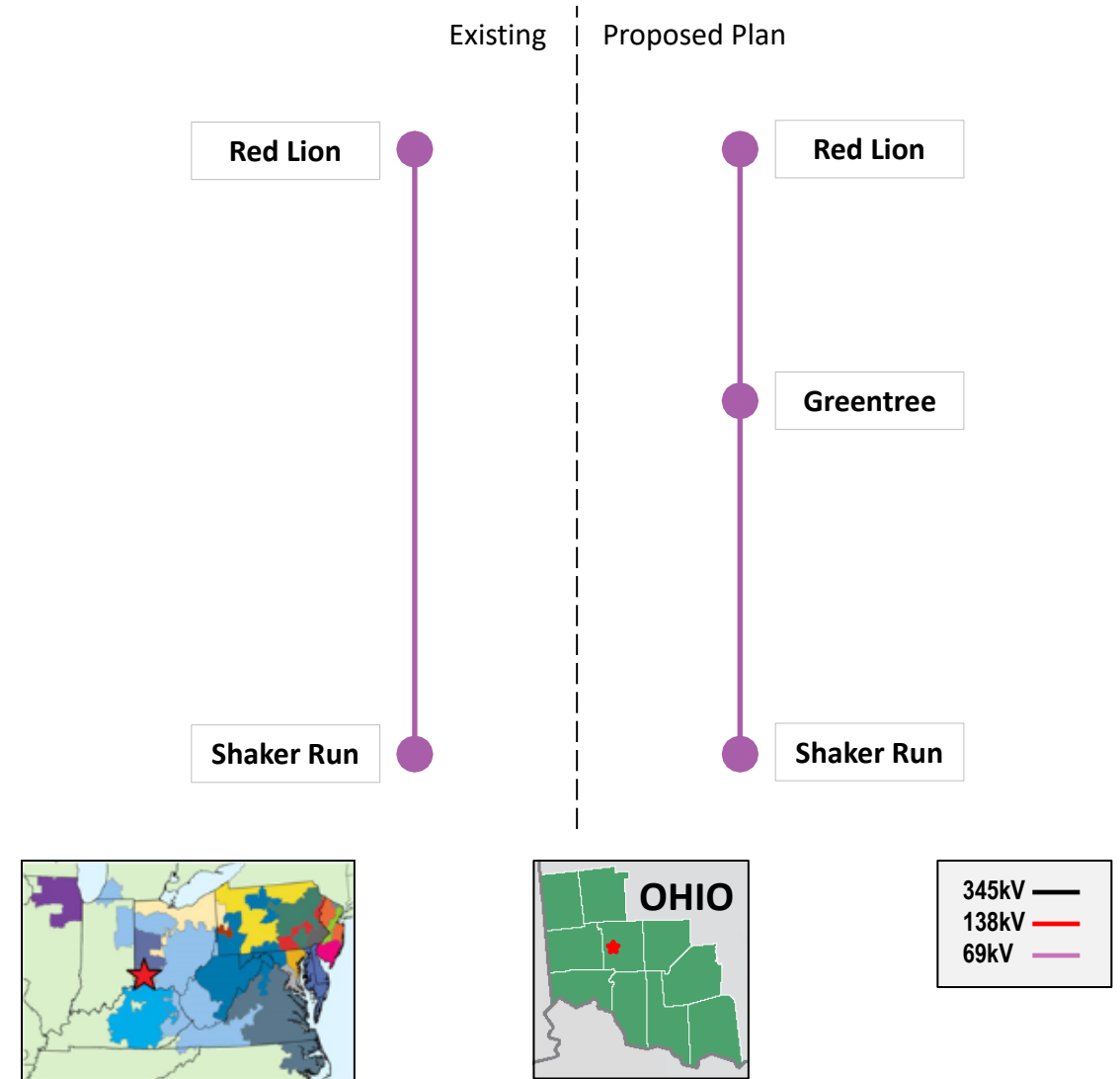
Distribution bus work and breakers will be installed for two feeder exits.

**Estimated Transmission Cost:** \$3.1MM

**Proposed In-Service Date:** 12-13-2024

**Project Status:** Engineering

**Model:** 2022 RTEP



# 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

4/11/2022 – V1 – Original version posted to pjm.com