



# Pre-EPR Cycle Expedited Project Review (EPR) Results

Expedited Project Review Technical Studies Task  
Force (EPR-TSTF)

August 5, 2025

# Purpose and Key Takeaways

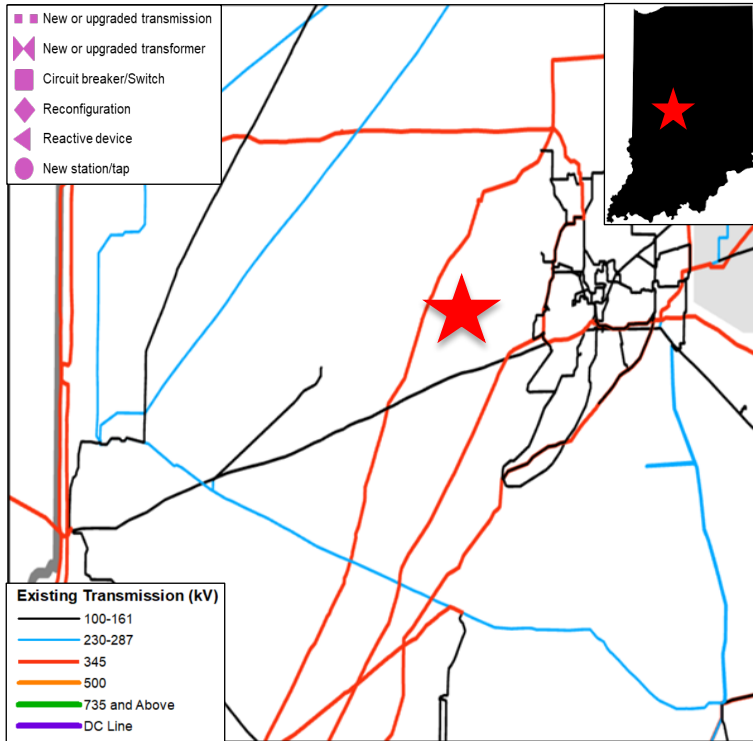


**Purpose:** Review the results of Wabash Valley Power Alliance (WVPA) and Hoosier Energy (HE) Expedited Project Review requests

## Key Takeaways:

- Three (3) EPR project, pre-EPR Cycle, have completed analysis
  - WVPA Upgrade LEAP Transmission Network Phase 2
  - HE New Marble Hill 345 kV Station and Load
  - HE New Scotland 345/69 kV Substation
- Any new TPL violations discovered as a result of these EPRs have been resolved
- MISO will report these EPRs as part of MTEP25 cycle

# P50628: Upgrade LEAP Transmission Network Phase 2



|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project #           | 50628                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Project Name        | Upgrade LEAP Transmission Network Phase 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Project Type        | Other - Load Growth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Project Description | Additional load has committed to the LEAP District, an innovation district west of Lebanon, IN in Boone County. The total demand in the district is estimated to be 1200MW. This represents a 600MW increase to a prior approved submission. To meet the additional load requirements, WVPA will connect into the Qualitech-Whitestown 345kV line and construct a new 345kV ring bus and approx. 12 miles of 345kV line to the west side of Lebanon where WVPA will construct a 345/138kV substation. Approx. 15 miles of 345kV line will be built to network this 345/138kV station to a planned 345/138kV station on the north side of the LEAP district. WVPA will also connect into the Nucor-Whitestown 345kV line and construct a new 345kV ring and approx. 6 miles of new 345kV line to the new step down substation. |
| System Need         | Additional Load Growth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Current Cost        | \$345.0 M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Expected ISD        | 06/30/2029                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Target Appendix     | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

# Models, Reliability Analysis, and Neighbor Coordination

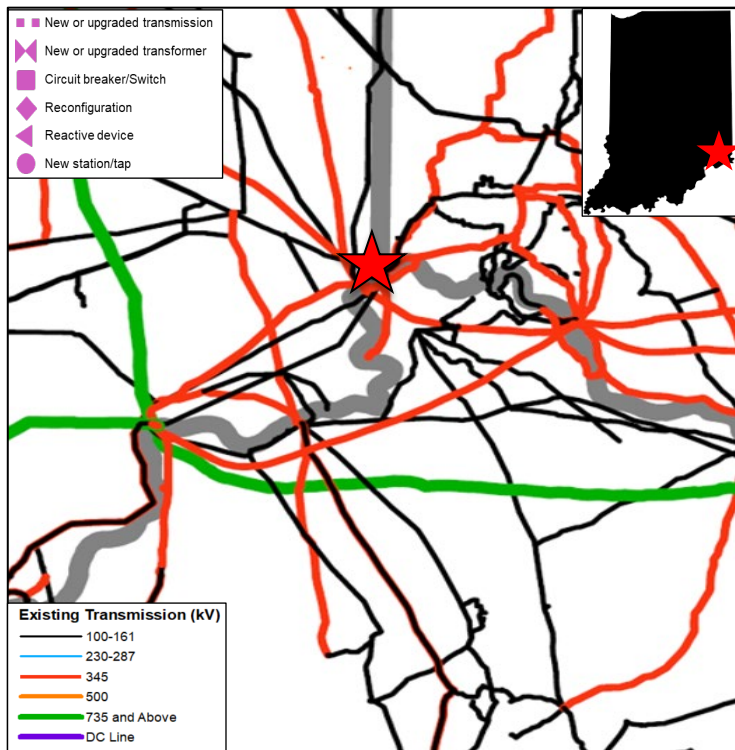
- The EPR was applied to all applicable MTEP models based on the in-service date. Models were posted for review prior to analysis.
- MISO performed TPL-001-5.1 no-harm analysis utilizing n-1 and n-1-1 contingencies centered around the point of interconnection of the EPR
  - Results were posted for member feedback
  - New TPL violations and worsened reliability issues were identified
- MISO coordinated with impacted neighboring entities based on the analysis results
  - LEAP Phase 2 impacted WVPA, IPL, and DEI facilities
  - All steady state (thermal and voltage) violations are resolved with newly developed Corrective Action Plans (CAPs)
  - We appreciate the active coordination of the impacted parties as part of this process

# LEAP Phase 2 Correct Action Plans (CAPs)

## New MTEP25 BRP projects

| Project ID | Project Name                                       | Estimated Cost  | ISD        |
|------------|----------------------------------------------------|-----------------|------------|
| 50691      | LEAP Phase 2 EPR Mitigations                       | \$45,000,000.00 | 6/29/2029  |
| 50718      | Rebuild Cayuga to Nucor 345 kV line                | \$96,000,000.00 | 6/1/2029   |
| 50719      | Rebuild Nucor to Wolf Creek 345 kV line            | \$49,000,000.00 | 6/1/2029   |
| 50722      | New Pond Creek 345 : 138 kV Substation             | \$40,000,000.00 | 6/1/2029   |
| 50723      | Uprate IPL Petersburg to Cato 138 kV Equipment     | \$4,000,000.00  | 12/31/2028 |
| 50725      | Rebuild Kokomo to Cammack to Tipton 230kV          | \$66,000,000.00 | 6/1/2029   |
| 50727      | Replace Thompson 345/138/13.75 MVA Autotransformer | \$15,000,000.00 | 12/31/2029 |
| 50728      | Add 3rd 345/138kV Bank at Edwards Sub              | \$15,000,000.00 | 6/30/2029  |

# P50614: New Marble Hill 345 kV Station and Load

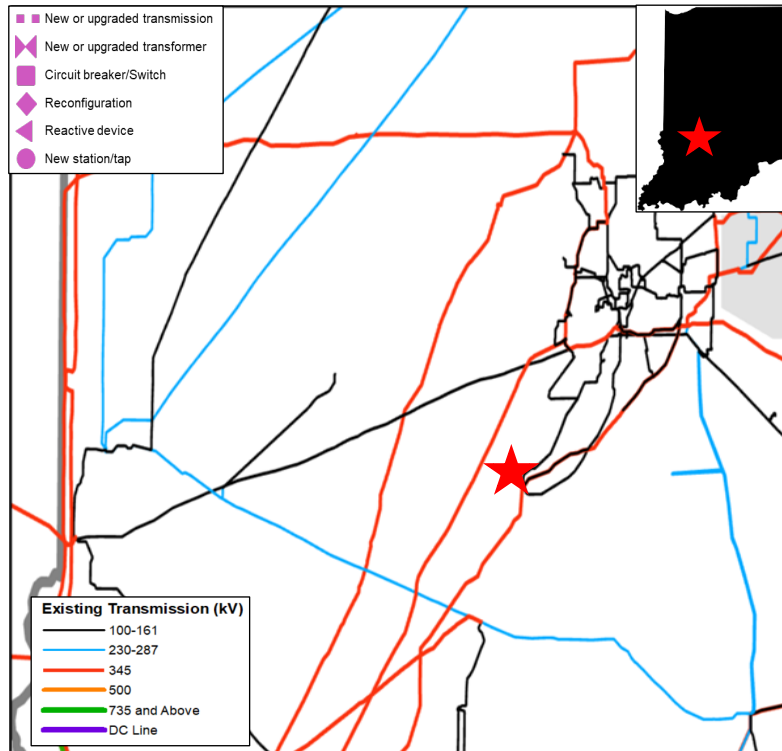


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|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project #           | 50614                                                                                                                                                                                                                                                                                                                                                            |
| Project Name        | New [HE] Marble Hill 345 kV Station and Load                                                                                                                                                                                                                                                                                                                     |
| Project Type        | Other, Load Growth                                                                                                                                                                                                                                                                                                                                               |
| Project Description | Construct a new 345kV ring-bus station on the [DEI] Trimble – [LGEE] Ghent 345 kV transmission line, approximately 4 line-miles from LGEE's Trimble County Generator Station. New customer will construct substation adjacent to ring-bus station. The station will serve a new data center with a total estimated load of 310 MW at 95% PF (344 MVA, 150 MVAR). |
| System Need         | A new data center customer has plans to construct a 310 MW facility within Hoosier Energy's service territory, adjacent to the 345kV Trimble-Ghent transmission line. The customer is planning an in-service date of Q4 2027. The full 310 MW load is planned for service by Q1 2029.                                                                            |
| Current Cost        | \$20.5 M                                                                                                                                                                                                                                                                                                                                                         |
| Expected ISD        | 10/1/2027                                                                                                                                                                                                                                                                                                                                                        |
| Target Appendix     | A                                                                                                                                                                                                                                                                                                                                                                |

# Models, Reliability Analysis, and Neighbor Coordination

- The EPR was applied to all applicable MTEP models based on the in-service date. Models were posted for review prior to analysis.
- MISO performed TPL-001-5.1 no-harm analysis utilizing n-1 and n-1-1 contingencies centered around the point of interconnection of the EPR
  - Results were posted for member feedback
  - New TPL violations and worsened reliability issues were identified
- MISO coordinated with impacted neighboring entities based on the analysis results
  - Marble Hill impacted HE, DEI and LG&E/KU
  - New TPL violations and worsened reliability issues identified on the MISO system have been resolved
  - LG&E/KU and HE have entered into a feasibility study agreement to mitigate impacts observed in MISO models
  - We appreciate the active coordination of the impacted parties as part of this process

# P50698: Scotland 345/69 kV Substation



|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project #           | 50698                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Project Name        | New [HE] Scotland 345/69 kV Substation                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Project Type        | Other, Load Growth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Project Description | <p>Construct a new 345 kV ring-bus with 345/69 kV transformation on the [IPL] Petersburg – [IPL] Wes Bloomington 345 kV transmission line, approximately 35 line-miles from IPL's Petersburg station and 19 line-miles from DEI's planned 16W_Bloomington station. Extend a 69 kV line from the new station to serve a new 20 MW customer.</p> <p>Bring the Hoosier Scotland-Bloomfield 69 kV transmission line into the new 69 kV station. Open 69 kV branch [HE] Bloomfield Tap – [HE] Lyons Tap.</p> |
| System Need         | By late 2029, Hoosier Energy is projecting 20 MW of load growth in the Scotland, IN area. The existing 69 kV transmission infrastructure cannot serve the additional load due to thermal and voltage constraints.                                                                                                                                                                                                                                                                                       |
| Current Cost        | \$38.0 M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Expected ISD        | 12/1/2029                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Target Appendix     | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

# Models, Reliability Analysis, and Neighbor Coordination

- The EPR was applied to all applicable MTEP models based on the in-service date. Models were posted for review prior to analysis.
- MISO performed TPL-001-5.1 no-harm analysis utilizing n-1 and n-1-1 contingencies centered around the point of interconnection of the EPR
  - Results were posted for member feedback
- No New TPL violations or worsened reliability issues were identified as a result of this analysis in the area where the Substation and load addition will be constructed
  - We appreciate the active participation of Central region TOs as part of this process

# Contact Information

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Questions?

# Appendix

# Project information links

Upgrade [WVPA] LEAP Transmission Network Phase 2

<https://misoenergy.sharefile.com/home/shared/fo34de01-2153-40d9-8f5b-5b0f30c861c2>

New [HE] Marble Hill 345 kV Station and Load

<https://misoenergy.sharefile.com/home/shared/foa87710-4b1e-4b36-aa0f-2806ac14d427>

New [HE] Scotland 345/69 kV Substation

<https://misoenergy.sharefile.com/home/shared/fo4ef50c-01d2-4a7e-9c35-1a9a27658b70>

# MTEP Powerflow Models in MISO25 Set

| Model Year     | Base case                                                                                    | Sensitivity                                                                                    |
|----------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Year 2</b>  | 2027 Summer Peak,<br>Wind and Solar – Capacity Credit<br><i>TPL requirement R2.1.1</i>       | 2027 Light Load (minimum load level),<br>Wind and Solar - 0%<br><i>TPL requirement R2.1.4</i>  |
| <b>Year 5</b>  | 2030 Summer Peak,<br>Wind and Solar – Capacity Credit<br><i>TPL requirement R2.1.1</i>       | 2030 Summer Shoulder (70-80% peak),<br>Wind 72% - Solar 47%<br><i>TPL requirement R2.1.4</i>   |
|                | 2030 Summer Shoulder (70-80% peak),<br>Wind 27% - Solar 48%<br><i>TPL requirement R2.1.2</i> | 2030 Light Load (minimum load level),<br>Wind 83% - Solar 10%<br><i>TPL requirement R2.1.4</i> |
|                | 2030/31 Winter Peak,<br>Wind 67% - Solar 0%                                                  |                                                                                                |
| <b>Year 10</b> | 2035 Summer Peak,<br>Wind and Solar – Capacity Credit<br><i>TPL requirement R2.2.1</i>       |                                                                                                |