EKPC Local Planning Assumptions for 2014 RTEP

January 2014
East Kentucky Power Cooperative

- EKPC integrated into PJM on June 1, 2013
- Generation & Transmission cooperative serving mainly rural portions of eastern two-thirds of KY
- Total Miles of Transmission Line = 2890
  - 122 miles @ 345
  - 370 miles @ 161
  - 419 miles @ 138
  - 1979 miles @ 69 kV
- PJM has functional control of EKPC’s 138 kV and above system
- EKPC Forecasted Net Peak Demand (50/50 Probability)
  - 2014 Summer – 2337 MW 2019 Summer – 2493 MW
EKPC Powerflow Models

• EKPC participates in annual SERC LTSG DBU process
  • Develops near-term and long-term cases to be used by SERC NTSG and LTSG
  • This case set includes annual models for the ERAG MMWG base case development

• EKPC presently jointly develops internal base cases with LGE/KU in spring of the year for internal studies
  • EKPC and LGE/KU have 54 free-flowing interconnections
  • EKPC has 55 distribution delivery points connected to the LGE/KU system (587 MW at peak)
  • LGE/KU has 17 distribution delivery points connected to the EKPC system (109 MW at peak)
  • Beginning in 2013, EKPC is effectively utilizing the same EKPC representation for the SERC LTSG process, PJM planning processes, the joint LGE/KU-EKPC process, and the EKPC internal process.

• EKPC participating in development of PJM RTEP 2019 case
  • Incremental updates have been provided for the 2019 case – only one significant change was made from the 2018 RTEP case
    • Addition of a 3rd 161 kV tie between the EKPC and TVA Summershade substations.
EKPC Planning Criteria

• EKPC plans its system to meet:
  • NERC Reliability Standards requirements
  • SERC Regional criteria
  • EKPC transmission planning criteria – posted on PJM website

• EKPC identifies different categories of projects:
  • Reliability projects to address planning criteria violations
  • Other projects to address items such as equipment condition, operational enhancements, outage reductions, improved service restoration, etc.
  • Interconnection projects to provide facilities for connection of new generation, transmission, and/or distribution facilities
EKPC Planning Criteria (cont.)

- EKPC planning criteria similar to Table I of the existing NERC TPL Standards in most respects
  - Primary difference – EKPC considers loss of a line, transformer, or generator in conjunction with loss of a generator to be a single-contingency (Category B) event.
  - EKPC planning criteria posted at http://www.pjm.com/planning/planning-criteria/to-planning-criteria.aspx

- EKPC has shifted to voltage criteria at transmission-level busses rather than distribution level busses.
  - No longer model distribution transformers in power flow models
EKPC/PJM Coordination

• EKPC continues to become familiar with the PJM planning processes and is actively participating
  • Participation in TEAC and PC meetings
  • Monthly RTEP project status meeting

• EKPC will continue to develop and modify its planning processes as it becomes more familiar with PJM process to ensure enhanced coordination and cooperation in assessments

• EKPC will continue assessment of its system to supplement and verify PJM’s assessments
  • Focus will be on testing against EKPC criteria
EKPC/PJM Coordination (cont.)

- EKPC will share its assessment results with PJM and will review PJM results to validate.

- EKPC will work with PJM to develop appropriate upgrades/mitigation plans for identified violations.

- EKPC will present identified projects, planning criteria, and processes at PJM TEAC and sub-regional RTEP meetings as necessary to allow stakeholder input and feedback.
EKPC RTEP Projects

• EKPC has 31 RTEP projects identified in the 2014-2018 period.
  • One at 161 kV, 2 at 138 kV, remainder at 69 kV
  • 29 are baseline projects

• Most significant EKPC RTEP projects
  • Uprate of JK Smith-Lake Reba Tap and JK Smith-Dale 138 kV lines
  • Addition of a 3rd EKPC-TVA tie between the Summershade substations
Questions and Discussion