



Documenting the Appropriate UFLS Requirements Applicable to EKPC

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Summary

- EKPC is seeking the PJM membership's approval of limited PJM Operating Agreement, Schedule 7 and associated Manual 36 changes to appropriately document the Underfrequency Load Shed (UFLS) requirements applicable to EKPC.
- Because this matter addresses an operations related issue, EKPC asks the PJM OC to use the "Quick Fix" process outlined in the Stakeholder Process Manual 34. EKPC will present a Problem Statement and Issue Charge, along with a proposed solution for OC consideration and voting.
- EKPC also is providing an informational overview for the Planning Committee and welcomes feedback to consider prior to advancing the discussion to the MRC in March.

Background – Underfrequency Load Shed (UFLS)

What is an UFLS Requirement?

To avoid an uncontrolled load loss situation, Underfrequency Load Shed (UFLS) requirements establish a total percentage of load reduction (load shed) that must be achieved when the system frequency drops to a certain level, as well as a percentage requirement to manage that load reduction at various intervals of frequency decline to ultimately achieve the total percentage of load reduction.

- All Electric Distributors must comply with the UFLS requirement established by their respective NERC Region.
- In its NERC Planning Coordinator Role, PJM evaluates Electric Distributor compliance with the UFLS requirements.
- PJM memorializes the applicable UFLS requirements in OA, Schedule 7 and Manual 36; tracks UFLS capability in Manual 36, Attachment H.

Background – Why the Need for Limited Revisions to OA and M36?

- EKPC integrated into PJM in 2013, EKPC is in the SERC region of NERC.
- Prior to EKPC’s integration, PJM OA, Schedule 7 documented an UFLS requirement applicable for entities in the “PJM Mid-Atlantic Region”, “PJM West Region”, and “PJM South Region”
- PJM OA, Schedule 7 was not changed upon EKPC’s integration to incorporate reference to the applicable UFLS requirement for EKPC.
- Nor, upon EKPC’s integration, were any PJM OA definitions of “Regions” updated to include EKPC.
- An oversight occurred upon EKPC’s integration such that no provision was added to the PJM OA or Manual 36 to reference the applicable UFLS requirement for EKPC.
 - The oversight did not create a reliability problem or a compliance vacuum. Annually PJM evaluates EKPC’s plans against the UFLS requirement applicable for SERC entities.
 - Documentation of PJM’s evaluation is in Attachment H of Manual 36. A table provides the UFLS measurements at the various frequency intervals, and the “Notes” section provides detail regarding PJM’s assessment.

Background: PJM Ministerial Change Created UFLS Confusion

- As part of its Quality Assurance Project, in 2018, PJM worked with stakeholders to clarify the Definitions in its governing documents.
 - Among the ministerial changes made and approved by FERC was a revision to the definition of “**PJM West Region**” to include specific reference to EKPC.
 - The ministerial changes to the definitions were not intended to change or create substantive obligations. They were intended to be clarifying revisions.
 - Neither PJM nor EKPC realized at the time that by including EKPC in the definition of “PJM West Region” confusion about what UFLS requirement applies to EKPC would ensue
- EKPC is in the SERC region of NERC; the other entities included in the “PJM West Region” are in the ReliabilityFirst region of NERC. (UFLS requirements differ slightly by region)
- Conforming changes to PJM Manual 36 were made upon FERC’s approval of the “PJM West Region” definition revision
 - Recent review of those revisions highlighted a potential confusion as to the appropriate UFLS requirement for EKPC.
 - EKPC and PJM determined that the definition change was the root of the confusion & further identified the need to specifically articulate the applicable UFLS requirement for EKPC in both PJM OA, Schedule 7 and Manual 36

Proposed Recommendation to Remedy Oversight & Unintended Confusion

- Implement proposed changes necessary to formally document the applicable UFLS requirement for EKPC consistently within PJM.

Proposed draft PJM OA, Schedule 7 language revisions supporting the endorsed solution will be taken to the MRC and MC for consideration and voting. Conforming Manual 36 revisions will proceed through the OC at a later time.

Stakeholder Process and Timeline

- 3/8 – PC Informational Report
- 3/10 – OC First read of the Quick Fix Issue Charge and Solution
- 3/23 – MRC first read of the Solution and corresponding OA revisions
- 4/14 – OC endorsement of the Quick Fix Issue Charge and Solution
- 4/27 – MRC endorsement of the Solution and corresponding OA revisions
- 6/29 – MC approval of the corresponding OA revisions

Conforming Manual 36 revisions will proceed through the OC at a later time.



APPENDIX - PROPOSED OA LANGUAGE TO REMEDY OVERSIGHT & UNINTENDED CONFUSION

For MRC and MC Consideration and Action

Proposed OA language to Remedy Oversight & Unintended Confusion

PJM OA Schedule 7, Section 1.2 (b)

Each Electric Distributor in the PJM West Region shall install or contractually arrange for underfrequency relays to interrupt at least 25 percent of its peak load with 5 percent of the load interrupted at each of five frequency levels: 59.5 Hz, 59.3 Hz, 59.1 Hz, 58.9 Hz, and 58.7 Hz; provided, however, that each Electric Distributor in the Commonwealth Edison Company Zone shall install or contractually arrange for underfrequency relays to interrupt at least 30 percent of its peak load with 10 percent of the load interrupted at each of three frequency levels; 59.3 Hz, 59.0 Hz and 58.7 Hz. Additionally, provided, however, that each Electric Distributor in the East Kentucky Power Cooperative Zone shall install or contractually arrange for underfrequency relays to meet requirements in the currently effective SERC underfrequency load shedding regional reliability standard, to interrupt 30 percent of its peak load including allowable tolerances identified in the SERC underfrequency load shedding regional reliability standard, with 5 percent of its peak load including allowable tolerances identified in the SERC underfrequency load shedding regional reliability standard at each of the frequency levels: 59.5 Hz, 59.3 Hz, 59.1 Hz, 58.9 Hz, 58.7 Hz and 58.5 Hz. Upon the request of the Members and Reliability Committee established by the Reliability Assurance Agreement, each Electric Distributor in the PJM West Region shall document that it has complied with the requirement for underfrequency load shedding relays.