

## Mapping Document

### Project 2008-02.2 Phase 2: Undervoltage Load Shedding

During development of PRC-010-1, the standard drafting team provided the following explanation on its approach to cover Misoperation of UVLS equipment in future work:

“As PRC-022-1 addresses UVLS equipment Misoperations, the UVLS drafting team’s intention is for PRC-004 to address Misoperations of UVLS Program equipment. A change to make PRC-004 explicitly applicable to UVLS Program equipment will be addressed once PRC-004-3 – Protection System Misoperation Identification and Correction<sup>1</sup> is completed under Project 2010-05.1 – Misoperations (Phase 1 of Protection Systems).”

Table demonstrates how proposed changes map from the retirement of PRC-022-1 (retired by the initial 2008-02 project) to the proposed PRC-010-2. The revisions are being proposed to provide additional clarity with the aligning revisions being proposed in PRC-004-5 as shown in Table 2.

<sup>1</sup> PRC-004-3 was surpassed by version four which addressed applicability to dispersed generation resources under Project 2014-01.

**Table 1: Mapping PRC-022-1 to PRC-010-2**

| Requirement in Approved PRC-022-1 Reliability Standard   | Translation to New Standard or Other Action   | Proposed Language in PRC-010-2 or Comments  |
|--|---|---|
| <p><b>R1.</b> Each Transmission Operator, Load-Serving Entity, and Distribution Provider that operates a UVLS program to mitigate the risk of voltage collapse or voltage instability in the BES shall <b>analyze and document all UVLS operations and Misoperations.</b> The analysis shall include:*</p> <p><b>R1.5</b> For any Misoperation, a Corrective Action Plan to avoid future Misoperations of a similar nature.</p> <p>*Sub-requirements R1.1 through R1.4 have been omitted because they were addressed in Project 2008-02 during development of PRC-010-1.</p> | <p>PRC-010-2 proposes Part 4.2 to provide additional clarity that UVLS equipment operations and Misoperations are addressed by Requirement R4 through the Planning Coordinator or Transmission Planner assessment.</p> <p>Part 4.1 was originally embedded in the main Requirement R4 of PRC-010-1 and is now shown as a new Part 4.1 now.</p> <p>Part 4.2 is being proposed to provide the necessary clarity that the assessment conducted following an event that resulted in a voltage excursion for which its UVLS Program was designed to operate must include UVLS Program equipment.</p> | <p><b>R4.</b> Each Planning Coordinator or Transmission Planner shall, within 12 calendar months of an event that resulted in a voltage excursion for which its UVLS Program was designed to operate, perform an assessment to evaluate:</p> <p style="padding-left: 40px;"><b>4.1.</b> whether its UVLS Program resolved the undervoltage issues associated with the event, and</p> <p style="padding-left: 40px;"><b>(Proposed) 4.2.</b> the performance (i.e., operation and non-operation) of the UVLS Program equipment.</p> |

Table 1: Mapping PRC-022-1 to PRC-010-2

| Requirement in Approved PRC-022-1 Reliability Standard | Translation to New Standard or Other Action  | Proposed Language in PRC-010-2 or Comments   |
|--|--|--|
|  | <p>Part 4.2 requires the Planning Coordinator or Transmission Planner to assess the UVLS equipment performance and address any deficiencies in a Corrective Action Plan (CAP) as required by PRC-010-2, Requirement R5.</p> <p>The clause “in its UVLS Program” was removed to clarify the Corrective Action Plan is addressing components of the assessment, which is about the UVLS Program.</p> | <p><b>R5.</b> Each Planning Coordinator or Transmission Planner that identifies deficiencies during an assessment performed in either Requirement R3 or R4 shall develop a Corrective Action Plan to address the deficiencies and subsequently provide the Corrective Action Plan, including an implementation schedule, to UVLS entities within three calendar months of completing the assessment. [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]</p> |

**Table 2: Mapping PRC-004-5**

| Requirement in Approved PRC-022-1 Reliability Standard   | Translation to New Standard or Other Action   | Proposed Language in PRC-004-5 or Comments   |
|--|---|--|
| <p><b>R1.</b> Each Transmission Operator, Load-Serving Entity, and Distribution Provider that operates a UVLS program to mitigate the risk of voltage collapse or voltage instability in the BES shall <b>analyze and document all UVLS operations and Misoperations.</b> The analysis shall include:*</p> <p><b>R1.5</b> For any Misoperation, a Corrective Action Plan to avoid future Misoperations of a similar nature.</p> <p>*Sub-requirements R1.1 through R1.4 have been omitted because they were addressed in Project 2008-02 during development of PRC-010-1.</p> | <p>Applicability 4.2.3 addresses the clause “analyze and document all UVLS operations and Misoperations.”</p> | <p><b>4.2.3</b> Undervoltage load shedding (UVLS) that is intended to trip one or more BES Elements.</p> |