NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Industry Webinar

Project 2009-03 Emergency Operations (EOP)
Project 2008-02 Undervoltage Load Shedding (UVLS)

April 10, 2014

RELIABILITY | ACCOUNTABILITY




Agenda

- Administrative
- NERC Antitrust Guidelines and Public Announcement
- UVLS and EOP project coordination
- EOP-011-1 – Emergency Operations
- PRC-010-1 – Undervoltage Load Shedding
- Projects moving forward

Administrative

- Introductions
- Two-hour webinar
- Q&A sessions will follow each project's presentation
- Q&A session guidelines:
  - Submit questions via the chat feature.
  - Please reference the slide number when possible.
  - The drafting team will attempt to address each question, but some questions may require further consideration.
  - Chat questions are not a part of the official project record.
- The slides will be posted on the NERC website.

Antitrust Guidelines and Public Announcement

- **NERC Antitrust Guidelines**
  - It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.
- **Public Announcement**
  - Participants are reminded that this webinar is public. The access number was widely distributed. Speakers on the call should keep in mind that the listening audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

UVLS and EOP Project Coordination

UVLS and EOP Project Coordination

- Why is this a joint webinar?
- Project 2009-03 EOP consolidates and replaces EOP-001-2.1b, EOP-002-3.1, and EOP-003-2 with **EOP-011-1**.
- Project 2008-02 UVLS consolidates and replaces PRC-010-0, PRC-020-1, PRC-021-1, and PRC-022-1 with **PRC-010-1**.
- The respective performance formerly required by EOP-003-2, Requirements R2, R4, and R7 is reflected in PRC-010-1.
- The EOP and UVLS projects are progressing simultaneously to properly align legacy standard retirements and revised standard implementations.

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EOP-011-1 – Emergency Operations

David McRee, EOP Standard Drafting Team Chair

Laura Anderson, NERC Standards Developer

EOP-011-1 – Emergency Operations

- The EOP Standard Drafting Team (SDT) was charged with responding to a Standard Authorization Request (SAR) to implement the changes identified by the EOP Five-Year Review Team (FYRT), the Independent Experts Review Project report, and FERC directives as related to EOP-001-2.1b, EOP-002-3.1 and EOP-003-2.
- The EOP SDT is requesting informal comments on proposed EOP-011-1 from industry to help review the current body of work.

EOP-011-1 – Emergency Operations

- High-level summary:
  - The current EOP-001-2.1b, EOP-002-3.1, and EOP-003-2 and their associated attachments were consolidated into a single standard, EOP-011-1, or incorporated into Project 2008-02 UVLS (Requirements R2, R4 and R7 in EOP-003-2).
  - In EOP-001-2.1b, the list of items in Attachment 1 were moved to Requirements R1 and R2 of EOP-011-1.
  - Reliability Coordinator approval of Emergency Operating Plans has been added to the standard.
  - Procedures, processes, or strategies that are to be included in the Emergency Operations Plan have been specified as to the Balancing Authority or Transmission Operator as directed by FERC.

EOP-011-1 – Emergency Operations

- The EOP SDT requests industry inputs on EOP-002-3.1, Attachment 1 – Energy Emergency Alerts:
  - Should the Energy Emergency Alert levels be moved to the Glossary of Terms and the type of actions taking be defined by the entities?
  - Should Attachment 1 be retained but updated as showing in the posting and modified based on the comments received from the industry?

Questions and Answers

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PRC-010-1 – Undervoltage Load Shedding

Manish Patel, UVLS Standard Drafting Team

Erika Chanzes, NERC Standards Developer

The UVLS Drafting Team

Member	Organization
Greg Vassallo, Chair	Bonneville Power Administration
José Conto	ERCOT
Bill Harm	PJM Interconnection
Sharma Kolluri	Entergy
Charles-Eric Langlois	Hydro-Quebec TransEnergie
Manish Patel	Southern Company Services
Fabio Rodriguez	Duke Energy Florida
Hari Singh	Xcel Energy
Matthew Tackett	MISO

Project History

- **March 2007** – FERC issues Order No. 693. Paragraph 1509 directs NERC to modify PRC-010-0 to require that an integrated and coordinated approach be included in all protection systems.
- **January 2010** – Project 2008-02 SAR is posted for comment.
- **May 2013** – Current drafting team is formed to reevaluate and revise the SAR and proceed with standard development.
- **September 2013** – Revised SAR and proposed requirements for PRC-010-1 are posted for informal comment.
- **March 2014** – Revised PRC-010-1 and all completed supporting documents are posted for informal comment—**ends April 16!**

Key Understandings About PRC-010-1

- The proposed NEW NERC Glossary term, UVLS Program, establishes the types of UVLS systems the standard applies to.
- PRC-010-1 will apply ONLY to those entities that have or are planning to implement UVLS Programs.
- Applicability is to the Transmission Planner, Planning Coordinator, Transmission Owner, and Distribution Provider.
- Requirements address coordination of UVLS Programs with other protection systems and generator ride-through capabilities, as well as program assessment, performance analysis, and data maintenance.

Key Changes From Previous Posting

- **Defined term** – Further clarified attributes of a UVLS Program
- **Applicability** – Clarified use of the phrase "Planning Coordinator or Transmission Planner"; also, Requirements R7 and R8 are now applicable only to the Planning Coordinator
- **Requirements R1, R3, R4, and R5** – Revised to clarify the expectations of what should be demonstrated at distinct points in time relative to UVLS Program effectiveness
- **Guidelines and Technical Basis** – Added this comprehensive discussion to enhance understanding of the reliability needs and deliverable expectations of each requirement

Definition: UVLS Program

- ***UVLS Program****: An automatic load shedding program consisting of distributed relays and controls used to mitigate the risk of Cascading, voltage instability, voltage collapse, or uncontrolled separation resulting from undervoltage conditions. Centrally-controlled undervoltage-based load shedding is not included*.
- **Key understandings**:
  - The term is independent of whether the UVLS relays are armed manually or automatically.
  - The term is limited to only those programs that have an impact on system reliability.
  - Centrally-controlled UVLS is not included because it is consistent in nature with Special Protection Systems (SPSs) and should be covered by SPS-related standards.

Requirements R1 and R2

R1. Each Planning Coordinator or Transmission Planner that is developing a UVLS Program shall demonstrate its effectiveness prior to implementing the program. This demonstration shall include, but is not limited to, studies and analyses that show:

1.1. The implementation of the UVLS Program resolves the identified undervoltage issues that led to the UVLS Program's design.

1.2. The UVLS Program is integrated through coordination with generator voltage ride-through capabilities and other protection and control systems, including, but not limited to, transmission line protection, auto-reclosing, SPSs, and other undervoltage-based load shedding programs.

R2. Each UVLS entity shall adhere to the UVLS Program specifications and implementation schedule determined by its Planning Coordinator or Transmission Planner.

Requirement R3

R3. Each Planning Coordinator or Transmission Planner shall perform a comprehensive assessment to evaluate the effectiveness of each existing UVLS Program in its area at least once every 60 calendar months or sooner if material changes are made to system topology or operating conditions. The assessment shall include, but is not limited to, studies and analyses that evaluate whether:

3.1. The implementation of the UVLS Program resolves the identified undervoltage issues that led to the UVLS Program's design.

3.2. The UVLS Program is integrated through coordination with generator voltage ride-through capabilities and other protection and control systems, including, but not limited to, transmission line protection, auto-reclosing, SPSs, and other undervoltage-based load shedding programs.

Requirements R4 and R5

R4. Each Planning Coordinator or Transmission Planner shall, within 12 calendar months of an event that resulted in a voltage excursion for which the program was designed to operate, perform an assessment to evaluate whether the UVLS Program resolved the undervoltage issues associated with the event.

R5. Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment shall develop a Corrective Action Plan (CAP) to address the deficiencies within three calendar months of identification.

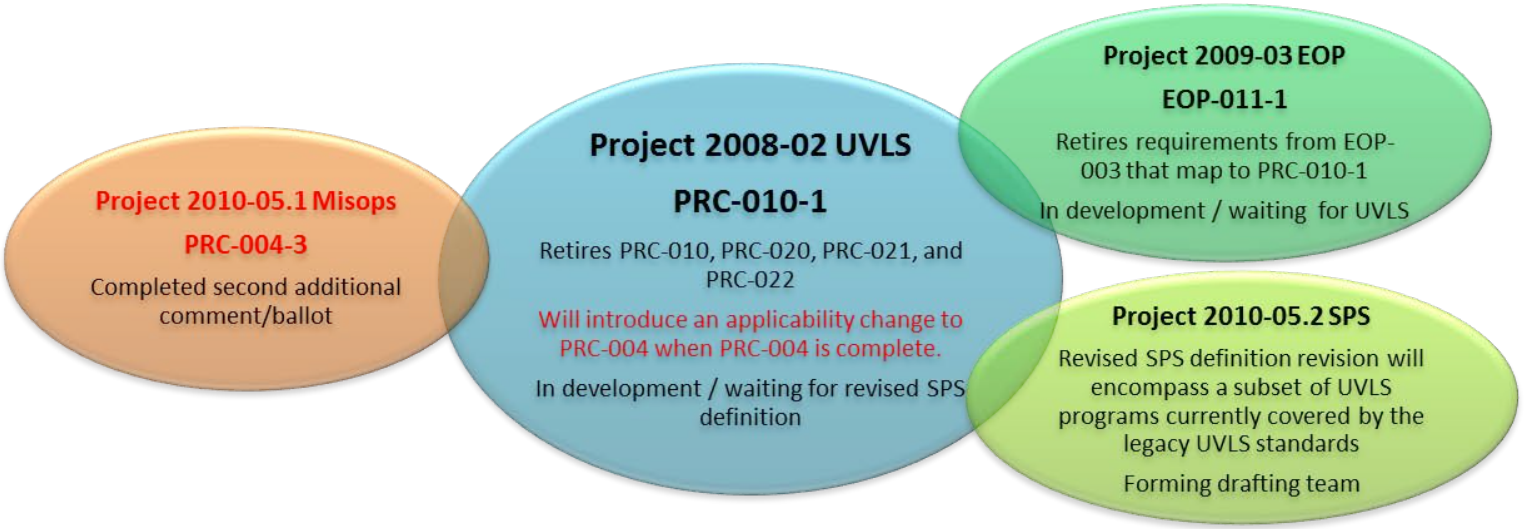
Requirements R6, R7, and R8

R6. Each UVLS entity shall provide data to its Planning Coordinator according to the format and schedule specified by the Planning Coordinator to support maintenance of each UVLS Program database.

R7. Each Planning Coordinator that has a UVLS Program in its area shall update a database containing data necessary to model its UVLS Program for use in event analyses and assessments of the UVLS Program at least once each calendar year.

R8. Each Planning Coordinator that has a UVLS Program in its area shall provide its UVLS Program database to other Planning Coordinators and Transmission Planners within its Interconnection within 30 calendar days of a request.

UVLS Standard Project Coordination



April 2014
First SPS SDT Meeting

June 2014
UVLS and EOP Standards and SPS Definition First Ballot

February 2015
UVLS and EOP Standards and SPS Definition to BOT

April 2015
UVLS and EOP Standards and SPS Definition Petition Package to FERC

TBD
Revised SPS Standards to BOT

Projects Moving Forward

Key Milestones

- An informal comment period for **PRC-010-1** is open until **Wednesday, April 16**. Please be sure to review the posted FAQ doc for helpful information.
- An informal comment period for **EOP-011-1** is open until **Friday, April 28**.
- PRC-010-1, EOP-011-1, and the revised definition of SPS are scheduled to be posted for the first formal comment period and ballot in June.
- Submittal to the NERC Board of Trustees and subsequent regulatory filing is targeted for end of 2014 or early 2015.

Additional Information

- These slides will be posted on NERC.com. Click on “Standards” and then “Webinars”.

- Please contact the respective NERC Standards Developers for more information, to schedule an outreach session, or to be added to a project’s email distribution list:
  - Project 2009-03 EOP: Laura Anderson at Laura.Anderson@nerc.net
  - Project 2008-02 UVLS: Erika Chanzes at Erika.Chanzes@nerc.net
  - Project 2010-05.2 SPS: Al McMeekin at Al.McMeekin@nerc.net

Questions and Answers