

**RCWG:
NERC Standard
“Automatic
Underfrequency
Load Shedding”
PRC-006-1
Effective 10/1/13**



Helping our members
work together to
keep the lights on...
today and in the future

Background

- **October 2011**
 - The SPP Regional Standard (PRC-006-SPP-1) was approved by the SPP stakeholders
- **July 2012**
 - SPP RE Trustees approved the SPP Regional Standard
- **November 2012**
 - The SPP Regional Standard was adopted by the NERC Board of Trustees

Background cont.

- **July 2013**
 - RCWG submitted UFLS Plan process document recommendation to MOPC
 - MOPC and BOD approved the removal of the SPP Regional Standard
 - MOPC and BOD approved the UFLS Plan
- **August 2013**
 - SPP RE Trustees to vote on the removal of the SPP Regional Standard
- **The SPP Regional Standard is pending approval by Federal Energy Regulatory Commission (FERC)**

Overview of PRC-006-1 — Automatic Underfrequency Load Shedding

- *Purpose: To establish design and documentation requirements for automatic underfrequency load shedding (UFLS) programs to arrest declining frequency, assist recovery of frequency following underfrequency events and provide last resort system preservation measures.*
- SPP Planning Coordinator (PC) required to develop a UFLS program
- PC's program and studies are done on behalf of Registered Entities
- System Protection and Control Working Group developed a UFLS program for SPP that improves on current UFLS program in SPP Criteria

Regional UFLS Standard PRC-006-SPP-01

- MOPC and BOD approved the removal of the SPP Regional Standard; SPP RE Trustees to vote on the *removal* of the SPP Regional Standard
- Provides “last resort” for BES preservation
- Regional standard includes GO participation
 - Continent-wide PRC-006-1 does not include GO participation
- Regional UFLS standard serves as basis for SPP PC’s UFLS Plan
- Will not be monitored by SPP RE until PRC-006-SPP-01 is approved by FERC and it is effective

PRC-006-1, R4: 5 Year Study

- The SPP 2010 UFLS Scheme study performed by Powertech Labs Inc. to evaluation and assess the SPP Plan included Nebraska Entities
 - the study showed the adequacy of the SPP UFLS Plan
- 2015 UFLS Plan Study due by December 31, 2015
 - data submittal due 3 Quarter 2014
 - SPCWG study review 1th Quarter 2015
 - SPP UFLS Plan approved MOPC 3rd Quarter 2015

SPP RE Responsibilities/PC Responsibilities

- SPP PC is responsible for technical review and adequacy of the SPP UFLS Plan
- SPP PC is responsible for technical review and adequacy of changes in the SPP UFLS Plan
- SPP PC is responsible for assessment of events

When/If PRC-006-SPP-01 is approved

- **UFLS entities must be compliant with the following regional requirements one year after FERC approval:**
 - **R4: Post-Event Technical assessment**
 - **R5: UFLS Entity Data submittal**
 - **R6: Generator Owner Data submittal**
- **Three years after FERC approval, must be compliant with remaining regional requirements**
- **Will provide further outreach on regional UFLS standard**

SPP UFLS Plan

- Approved by the SPCWG and given to MOPC for approval in April 2013
- MOPC requested RCWG review of SPP UFLS Plan which becomes part of NERC Standard PRC-006-1 “Automatic Underfrequency Load Shedding” effective October 2013.

There are many areas where the SPP Regional Standard is duplicative with the NERC Standards PRC-006-1 and PRC-024-1. There are also areas where the SPP Regional Standard is in conflict with the NERC Standard. The following table relates the SPP Regional Standard with the NERC Standards. Where the NERC Standard PRC-006-1 stipulates a PC develop a UFLS program, this will be related to the SPP Regional Standard UFLS requirements stipulating the UFLS program specifics.

PRC-006-SPP-01	Functional Category Description	NERC Standards		Comments
		PRC-006-1	PRC-024-1	
R1 – R3, R9	UFLS program specifics	R3		SPP is obligated to develop and specify a UFLS program as a PC and can do so either by SPP Criteria or the SPP Regional Standard
R4 & R8	UFLS assessment	R4		Duplicative between SPP Regional Standard and NERC Standard
R5 & R6	UFLS data submission	R7 & R8	R4	Duplicative between SPP Regional Standard and NERC Standard
R7	Generator behavior		R1 – R3	Duplicative and in conflict with the NERC Standard. The generator behavior stipulated in the NERC Standard is more restrictive than the SPP Regional Standard.

SPP UFLS Plan

- **RCWG review MRO letter for comments**
 - **RCWG recommended the RTO (as the PC) submit a request to MRO to obtain consent/compliance evidence that the designated island in the SPP UFLS Plan includes portions of the MRO region**
 - **The RTO will submit a request to MRO as recommended above**
- **RCWG provided a list of elements that should be capture or addressed in the SPP UFLS Plan process**
 - **The process element recommended by the RCWG will be review and incorporated into the SPP UFLS Plan process documentation**