

Introduction

- 1. Title:** Underfrequency Load Shedding
- 2. Number:** PRC-006-WECC-CRT-3.1
- 3. Purpose:** To document the WECC Off-Nominal Frequency Load Shedding Plan (Coordinated Plan), or its successor, and to assure consistent and coordinated requirements for the Coordinated Plan among all WECC applicable entities.
- 4. Applicability:**
 - 4.1. Functional Entities:**
 - 4.1.1.** Balancing Authority
 - 4.1.2.** Underfrequency Load Shedding (UFLS) Entities shall mean all entities that are responsible for the ownership, operation, or control of UFLS equipment as required by the Coordinated Plan. Such entities may include one or more of the following:
 - 4.1.2.1.** Transmission Owner
 - 4.1.2.2.** Distribution Provider
 - 4.1.3.** Generator Owner
 - 4.1.4.** Transmission Operator
- 5. Effective Date:** June 18, 2019

Requirements and Measures

WR1. Each Balancing Authority shall annually allocate its Balancing Authority Area's Peak Demand to its respective Transmission Operator(s), based on its previous year's actual Balancing Authority Area's Peak Demand, by June 1.

WM1. Each Balancing Authority will have evidence that it annually allocated its Balancing Authority Area's Peak Demand to its respective Transmission Operator(s), based on its previous year's actual Balancing Authority Area's Peak Demand, by June 1, in accordance with WR1.

Evidence may include, but is not limited to, a written document illustrating that the Balancing Authority has supplied the information to its respective Transmission Operator(s).

WR2. Each Transmission Operator shall report to the WECC Under-Frequency Load Shedding Review Group (UFLSRG), or its successor, and to each UFLS Entity connected to its facilities, the sub-area Coordinated Plan(s) it has adopted.

WM2. Each Transmission Operator will have evidence that it reported to the UFLSRG or its successor and to each UFLS Entity connected to its facilities, each of the sub-area Coordinated Plan(s) it adopted, in accordance with WR3.

Evidence may include, but is not limited to, documentation indicating communication of the adoption to the parties designated in WR2.

WR3. Each Transmission Operator shall coordinate with each UFLS Entity connected to its facilities the implementation of each adopted sub-area Coordinated Plan.

WM3. Each Transmission Operator will have evidence that it coordinated with each UFLS Entity connected to its facilities, the implementation of each adopted sub-area Coordinated Plan, as required in WR3.

Evidence may include, but is not limited to, documentation illustrating how the adopted sub-area Coordinated Plan is implemented among the Transmission Operator and the UFLS Entities.

WR4. Each UFLS Entity shall communicate to the UFLSRG the identity of its designated agent, if any, responsible for all data submissions and simulations that are required from the UFLS Entity under the Coordinated Plan.

WM4. Each UFLS Entity will have evidence that it communicated to the UFLSRG the identity of its designated agent, if any, to which the tasks of WR4 have been delegated.



If an agent has been designated, evidence will include written documentation wherein the assignee and the assignor agree to the agency designation to the delegation of and authority to perform the tasks specified in WR4.

If the UFLS opts not to designate an agent, attestation to that choice is sufficient evidence.

WR5. Each UFLS Entity shall provide to the UFLSRG a written report describing:

- 5.1.** The UFLS Entity's responsibilities under the Coordinated Plan;
- 5.2.** How the UFLS Entity meets those responsibilities; and
- 5.3.** Coordinated activities undertaken with other entities to meet the UFLS Entity's responsibilities under Coordinated Plan.

WM5. Each UFLS Entity will have evidence that it provided to the UFLSRG a written report describing the content required in WR5.

WR6. Each UFLS Entity shall compile its Coordinated Plan data and dynamics file in the WECC-defined format, as listed in the Coordinated Plan—Data Submittals Requirements (see Attachment A of this document), for its entire load and annually, by July 1, submit Attachment A to the UFLSRG and to the UFLS Entity's respective Transmission Operator.

WM6. Each UFLS Entity will have evidence that it compiled its respective Coordinated Plan data and dynamics file meeting the criteria establish in WR6.

Evidence may include, but is not limited to, reports or other documentation demonstrating that it has complied with WR6.

WR7. Each UFLS Entity shall implement the Coordinated Plan as documented by the Transmission Operator(s) in WR3.

WM7. Each UFLS Entity will have evidence that it implemented the Coordinated Plan as documented by the Transmission Operator(s) in WR3, in accordance with WR7.

Evidence may include, but is not limited to, production of reports or other documentation demonstrating that it has complied with WR7.

WR8. Each Generator Owner shall implement the Coordinated Plan.

WM8. Each Generator Owner will have evidence that it implemented the Coordinated Plan.

Evidence may include, but is not limited to, production of reports or other documentation demonstrating that it has complied with WR8.

WR9. Each Generator Owner shall annually compile and submit to the UFLSRG, no later than June 1, its respective Coordinated Plan data and dynamics file for its generation, in the format defined in Attachment A of this document.

WM9. Each Generator Owner will have evidence that it submitted its respective Coordinated Plan data and dynamics file for its generation, in the format defined in Attachment A of this document, to the UFLSRG, meeting the criteria set forth in WR9.

Evidence may include, but is not limited to, production of reports or other documentation demonstrating that it has complied with WR9.

Version History

Version	Date	Action	Change Tracking
1	December 6, 2012	WECC Board of Directors Approved	Developed as WECC-0065. Initial version
1.1	January 28, 2016	Errata	In the title, the word “Criterion” was removed to avoid confuse as documents are subject to categorization change. In WR2, the NERC title was added after the document number. In WR7, the term “TOP” was replaced with “Transmission Operator.” In WR9, WR12, WM12 the word “criterion” was replaced with “document” to allow the document to remain current during recategorizations without confusion. The links/addresses in Attachments A and B were deleted and a generic location included because the document addresses have changed and remain subject to change. The repeat of Attachment A was deleted from Attachment B. “PRC-006-WECC-CRT-1” was deleted from the header of Attachment B to allow the document to remain current as versions change. “Underfrequency Load Shedding Criterion” was deleted from the Attachment B header to avoid confusion as documents are subject to categorization change.
2	March 9, 2016	WECC Board of Directors Approved	Developed as WECC-0116. Change in periodicity from every year to other year.
3	March 8, 2017	WECC Board of Directors Approved. The Effective Date is April 1, 2017.	Developed as WECC-0119C, all references to the Reliability Assurer were removed. Where applicable, sentence structure and standardized wording was used aligning the document to current drafting conventions. The definitions for “WECC Underfrequency Load Shedding Review Group (Review Group)” and “Western Electricity Coordinating Council Off- Nominal Frequency Load Shedding Plan (Coordinated Plan)” were deleted. These two terms are capitalized because they are proper nouns and do not need a separate definition.
3.1	June 18, 2019	Errata	Converted to new template. In Version 3.1: 1) WR1/WM1, a comma was added after Transmission Operator(s), 2) throughout the document “WECC UFLS Group (Review Group)” was change to “WECC Under-Frequency Load Shedding Review Group (UFLSRG)” to match the group’s charter, 3) WM4 “USLS” was corrected to “UFLS”, 4) WR5 “entity” was corrected to “Entity” matching the Applicability section, 5) WR9 “their” was corrected to “its”, 6) Rationale section reference “Coordinated Plan, Section E. Coordinated Plan Details” was changed to a footnote, and 7) Rationale section 4.2 “[the]” was added at “for [the] purpose of”.

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Attachments

The Attachment A, Excel Reporting Form is posted on the Standards page on the Approved Regional Criterion accordion.

Rationale

A Rationale section is optional. If Rationale Boxes were used during the development of this project, the content of those boxes appears below.

WR2.

The *comprehensive* Coordinated Plan allows for the adoption of a number of *sub-area* Coordinated Plans that establish different variable thresholds for items such as load dropped and frequency set-points¹.

As used in WR2, the Under-Frequency Load Shedding Review Group (UFLSRG) is a chartered entity established by the Joint Guidance Committee (JGC). The UFLSRG is a joint regional group comprised of WECC Balancing Authorities, Planning Coordinators, Transmission Operators, and Transmission Planners created by the WECC Joint Guidance Committee to review and maintain an accurate underfrequency load shedding database and simulation models reflecting the WECC Off-Nominal Frequency Load Shedding Plan. The UFLSRG is responsible for conducting simulations of the Coordinated Plan to ensure the Coordinated Plan meets all the requirements of NERC Reliability Standard PRC-006.

WR4.

WR4 is designed to capture the following concept contained in the Coordinated Plan.

H. Individual and Groups

Any groups of UFLS Entities constituted for [the] purpose of implementing coordinated load shedding in conformance with this Coordinated Plan:

3. Must designate an agent to be responsible for all data submission requirements and simulations to demonstrate compliance.

¹ See Coordinated Plan, Section E. Coordinated Plan Details