Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

Please use this form to submit comments on the proposed SAR for Underfrequency Load Shedding (UFLS). Comments must be submitted by **January 12, 2007**. You may submit the completed form by e-mail to sarcomm@nerc.com with the abbreviation "UFLS" in the subject line. If you have questions please contact David Taylor at David.Taylor@nerc.net or by telephone at 609-452-8060.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Anthony Jablonski	
Organization:	ReliabilityFirst Corporation	
Telephone:	(630) 378-5717	
E-mail:	anthony.jablonski@rfirst.org	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☐	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☐ **MRO**	☐	3 — Load-serving Entities
☐ **NPCC**	☐	4 — Transmission-dependent Utilities
☒ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☐ **SPP**	☐	7 — Large Electricity End Users
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☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☒	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

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Background Information

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PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
PRC-007 — Assuring Consistency with Regional UFLS Programs
PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-009 — UFLS Performance Following an Underfrequency Event

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PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

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You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: See attached file 'SAR-Comment_Form_2007-01_UFLS_29Nov06_Attachment'

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments:

ATTACHMENT TO

"SAR Comment Form 2007-01 UFLS 29Nov06"

Submitted 12/14/06 by:

Anthony Jablonski
ReliabilityFirst Corporation
Standards Department
(630) 378-5717
anthony.jablonski@rfirst.org

Comment regarding acceptability of the scope of project:

Inclusion of PRC-008, Maintenance and Testing, is not in the best interest of the development of the project or implementation of the project. Although PRC-008 does refer to the specific "relay system" known as UFLS, it more characteristic of the general subject area of "relay systems" which include:

PRC-008-0 Underfrequency Load Shedding Equipment
PRC-005-1 Transmission and Generator Protection System
PRC-011-0 UVLS System
PRC-017-0 Special Protection System

Typically companies develop maintenance and testing programs that cover all types of "relay systems". Compliance to these four standards is usually checked from the same source reference. PRC-008 is independent of the analysis and implementation of an UFLS program. Project 2007-01 should only include PRC-006, 007 and 009.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Steve Myers	
Organization:	ERCOT	
Telephone:	512-248-3077	
E-mail:	smyers@ercot.com	
NERC Region		**Registered Ballot Body Segment**
☒ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
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	☐	10 - Regional Reliability Organizations and Regional Entities

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Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

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1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: It is important for clear requirements to exist that meet the technical intent of the operations of UFLS as part of defense-in-depth to ensure the reliability of the BES. Because there are many different arrangements, organizational and contractual, among the various Regions, the standards must state the technical requirements that must be met ("what") and not prescribe "how".

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments: In concert with the stated process, I do not believe it would be appropriate to go beyond what has been stated. Once these items have been "cleaned up", additional standards revisions may be proposed to address other concerns…using the standards revision process.

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Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
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Group Comments (Complete this page if comments are from a group.)

Group Name: SERC EC Planning Standards Subcommittee

Lead Contact: **Travis Sykes**

Contact Organization: **Tennessee Valley Authority**

Contact Segment: **1**

Contact Telephone: **423-751-4162**

Contact E-mail: **tssykes@tva.gov**

Additional Member Name	Additional Member Organization	Region*	Segment*
Darrell Pace	Alabama Electric Coooperative	SERC	1
Bob McGarrah	Ameren	SERC	1
Brian Moss	Duke Energy Carolinas	SERC	1
David Weekley	MEAG Power	SERC	1
Pat Huntley	SERC Reliability Corp	SERC	10
Phil Kleckley	SC Electric and Gas	SERC	3
Bob Jones	Southern Company Services, Inc.	SERC	1

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1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: This seems to be a standard where fill-in-the-blank in the form of regional standards are needed.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: The scope is not clearly defined. It is not clear how the items on pages 6 through 9 are to be incorporated. The items on these pages should be items for consideration by the SDT, but they are not necessarily required to be in the standard.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments:

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Andrew Fusco	
Organization:	NCMPA1	
Telephone:	919-760-6219	
E-mail:	afusco@electricities.org	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☒ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
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Contact Organization:

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   ☒ Yes

   ☐ No

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   Comments:

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   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: See attached file. I could not get comment field to extend past one line.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments: See attached file. I could not get comment field to extend past one line.

NCMPA1 Comment on Question #2:

NCMPA1 agrees with the need to develop measures to shed load during an underfrequency event that are consistent across the interconnected electric system. However, NCMPA1 disagrees with the approach that has been taken by the regions in responding to this requirement, and we are concerned that the same approach is suggested in this SAR. We are specifically concerned that it is simply not practical for smaller entities to comply with the requirements proposed by this SAR.

As a result of the Energy Policy Act, many small utilities are required to register with their respective RROs, and these entities are now subject to mandatory compliance with the reliability standards. Some of these entities have peak annual loads that are smaller than 10 MW. Some are even smaller than 1 MW. Requirements within most, if not all, of the regions state that load must be shed in multiple steps (three steps in SERC, for example) at different underfrequency set points. While shedding load in multiple steps is perfectly rational for larger systems, most small loads are served by one distribution feeder bus. Furthermore, the entire peak demand on a small entity is a mere fraction of the amount of load that is shed by a larger entity in just one step. Furthermore, larger utilities have the advantage of aggregating load from multiple delivery points that can be shed in one step. Smaller entities do not have this advantage, and face the possibility of large expenditures in order to meet the multiple step shedding criteria.

NCMPA1 questions the benefit to reliability by requiring all utilities, regardless of size, to shed load in multiple steps as a result of an underfrequency event. We urge the SAR/standard drafting teams to address this issue and establish simplified requirements for small entities, whereby,

- Compliance with the UFLS standards be non-compulsory for entities with annual peak demands less than 10 MW
- Load shedding can be carried out in one step for entities with annual peak demands less than 100 MW.

NCMPA1 Comment on Question #3

The top margin on pages SAR 5 through SAR 9 says “System Restoration and Blackstart”. This appears to be some sort of editing mistake, and we recommend that it be changed to “Underfrequency Load Shedding”.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Brian Thumm	
Organization:	ITC Transmission	
Telephone:	248-374-7846	
E-mail:	bthumm@itctransco.com	
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   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: While some improvement is probably necessary, it is not clear how removing "fill in the blank" characteristics will benefit reliability. Some Reliability Standards, such as the UFLS Standards, can benefit from a Regional coordination effort. Regional coordination in this case is preferred over an Interconnection-wide coordination effort.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: SARs are supposed to clearly identify the scope of the proposed standard. SARS are intended to meet a specific industry need. This SAR appears to be a laundry-list garnered from various sources and ideas on what might be put in a standard. The scope of the proposed standard is not adequately addressed.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Ed Davis	
Organization:	Entergy Services, Inc.	
Telephone:	504-576-3029	
E-mail:	edavis@entergy.com	
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   Comments:

   This seems to be a standard where fill-in-the-blank in the form of regional standards are needed.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

   The scope is not clearly defined. It is not clear how the items on pages 6 through 9 are to be incorporated. The items on these pages should be items for consideration by the SDT, but they are not necessarily required to be in the standard.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments:

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

Please use this form to submit comments on the proposed SAR for Underfrequency Load Shedding (UFLS). Comments must be submitted by **January 12, 2007**. You may submit the completed form by e-mail to sarcomm@nerc.com with the abbreviation "UFLS" in the subject line. If you have questions please contact David Taylor at David.Taylor@nerc.net or by telephone at 609-452-8060.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Ron Falsetti	
Organization:	IESO	
Telephone:	905-855-6187	
E-mail:	ron.falsetti@ieso.ca	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☐	1 — Transmission Owners
☐ **FRCC**	☒	2 — RTOs, ISOs
☐ **MRO**	☐	3 — Load-serving Entities
☒ **NPCC**	☐	4 — Transmission-dependent Utilities
☐ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☐ **SPP**	☐	7 — Large Electricity End Users
☐ **WECC**	☐	8 — Small Electricity End Users
☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
PRC-007 — Assuring Consistency with Regional UFLS Programs
PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-009 — UFLS Performance Following an Underfrequency Event

The four standards associated with this project are all Version 0 standards. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☒ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: We agree with the general scope; however, we have concerns over the comments provided in the 4 tables. In fact, we question whether or not it is appropriate to include these tables in the SAR as they are not part of the appendices of the approved Reliability Standards Development Procedure (RSDP).

   Page 14 (Version 6.0) of the RSDP clearly states that the objective as: A valid SAR that clearly justifies the purpose and describes the scope of the proposed standard action and conforms to the requirements of a SAR outlined in Appendix A.

   It seems to us that this SAR has gone beyond the bound of established standard procedure.

   These comments do not represent the majority view of the industry as we believe they have not been reviewed and commented by industry participants. Hence, these comments can at best be regarded as views of the person or group that prepared the table. But by being included in the SAR, these comments may mislead or restrict the thinking of the Standard Drafting Team in developing the revised standards.

   We support moving forward with the standard development work according to the scope provided in the SAR, but urge the Standard Drafting Team to regard these comments as personal views only that should be forwarded through the normal SAR commenting process. We also recommend that all future SAR writers not to use materials (the table, in this case) that are not part of the approved RSDP.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments:

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
	☐	2 — RTOs, ISOs
	☐	3 — Load-serving Entities
	☐	4 — Transmission-dependent Utilities
	☐	5 — Electric Generators
	☐	6 — Electricity Brokers, Aggregators, and Marketers
	☐	7 — Large Electricity End Users
	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **Midwest ISO Stakeholders Standards Collaboration Participants**

Lead Contact: **Jason Marshall**

Contact Organization: **Midwest ISO**

Contact Segment: **2**

Contact Telephone: **317-249-5494**

Contact E-mail: **jmarshall@midwestiso.org**

Additional Member Name	Additional Member Organization	Region*	Segment*
Jim Cyrulewski	JDRJC Associates	**RFC**	1
Brian F. Thumm	ITC	**RFC**	1
Greg Berg	Otter Tail Power	**MRO**	1
Terry Bilke	Midwest ISO	**RFC, MRO, SERC**	2

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

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PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
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PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: While some improvement is probably necessary, it is not clear how removing "fill in the blank" characteristics will benefit reliability. While there is merit in having some interconnection view with regard to the standards, to ensure coordinated performance, the Regions currently play an important role. There are areas that have unique requirements that may not be adequately addressed by a continent-wide or interconnection-wide approach. This role should filled primarily as TOs, TOPs, DPs, and LSEs with the region coordinating the activities.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: SARs are supposed to clearly identify the scope of the proposed standard. SARS are intended to meet a specific industry need. This SAR appears to be a laundry-list garnered from various sources and ideas on what might be put in a standard.

   It's unclear to us who is the agent or entity responsible for determining the interconnections' setpoints and overseeing the transition to any new requirements. It's also unclear who is accountable if the settings and process aren't correct. However, we do believe the TOs, TOPs, DPs and LSEs should have the responsibility to determine these settings with the Regions coordinating the activities.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☐ No

   Comments: This does not appear to be a yes-no question.

One major change needed in all the standards is to separate the standard into two pieces. The first is the set of core reliability requirements. The second portion is the supporting text. More than half the text in the current standards is supporting text that explains the true requirements. Now NERC is in the process of developing measures for and assigning risk to sentences that were never intended to be measured.

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
	☐	2 — RTOs, ISOs
	☐	3 — Load-serving Entities
	☐	4 — Transmission-dependent Utilities
	☐	5 — Electric Generators
	☐	6 — Electricity Brokers, Aggregators, and Marketers
	☐	7 — Large Electricity End Users
	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **IRC Standards Review Committee**

Lead Contact: **Charles Yeung**

Contact Organization: **SPP**

Contact Segment: **2**

Contact Telephone: **832-724-6142**

Contact E-mail: **cyeung@spp.org**

Additional Member Name	Additional Member Organization	Region*	Segment*
Alicia Daugherty	PJM	**RFC**	2
Mike Calimano	NYISO	**NPCC**	2
Ron Falsetti	IESO	**NPCC**	2
Matt Goldberg	ISO-NE	**NPCC**	2
Brent Kingsford	CAISO	**WECC**	2
Anita Lee	AESO	**WECC**	2
Steve Myers	ERCOT	**ERCOT**	2
Bill Phillips	MISO	**RFC / SERC**	2

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
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PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-009 — UFLS Performance Following an Underfrequency Event

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PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: We agree with the general scope. However, the scope does not clearly state an important objective, for this and any standard revisions, that the end product should contain only the core reliability requirements without any guideline or procedure type of information. Further, we have concerns over the comments provided in the 4 tables. In fact, we question whether or not it is appropriate to include these tables in the SAR as they are not part of the appendices of the approved Reliability Standards Development Procedure (RSDP). It seems to us that this SAR has gone beyond the bound of established standard procedure.

   The comments in the Tables may not represent the majority view of the industry as we believe they have not been reviewed and commented by industry participants. Hence, these comments can at best be regarded as views of the person or group that prepared the table. But by being included in the SAR, these comments may mislead or restrict the thinking of the Standard Drafting Team in developing the revised standards.

   We ask the SAR Draft Team to please enlighten us on who provided these comments and how these comments got included in the SAR.

   We support moving forward with the standard development work according to the scope provided in the SAR, but urge the Standard Drafting Team to regard the comments in the Tables as personal views only that should be forwarded through the normal SAR commenting process. We also recommend that all future SAR writers not to use materials (the table, in this case) that are not part of the approved RSDP.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments:

Please take a closer look at the applicability of each of the standard requirements. We believe some of them may not cover all the responsible entities. For example:

a. PRC-007-0

TOP's & LSE's are missing from R1, R2 & M1.

b. PRC-008-0

TOP's & LSE's are missing from the Applicability, Requirements & Measures sections.

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Jason Shaver	
Organization:	American Transmission Co.	
Telephone:	262 506 6885	
E-mail:	jshaver@atcllc.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☒ **MRO**	☐	3 — Load-serving Entities
☐ **NPCC**	☐	4 — Transmission-dependent Utilities
☒ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☐ **SPP**	☐	7 — Large Electricity End Users
☐ **WECC**	☐	8 — Small Electricity End Users
☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

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PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
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PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: ATC agrees that there is a reliability related need to upgrade this set of standards.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: The Applicability section in each of these standards is unclear and must be clarified in the new standards.

   PRC-006

   We agree with the SAR Requestor that the Applicable section needs to be reassigned. With that being said the requestor did not provide the entity that should be responsible for these requirements. Failure to clearly identify, in the SAR, which entity is going to be assigned these requirements will make it difficult for the SDT to develop appropriate requirements.

   In assigning the appropriate entity the SAR drafting team needs to determine which entity has the authority or needs the authority to collect the data. ATC believes that there are only two options. The first is to assign the standard to the Regional Entities who has the authority to collect the data but is not subject to the FPA. The second option is to assign the standard to Planning Coordinators who are subject to the FPA but will need the authority to collect the data. Is this standard required to go through the formal standards development process if it is being assigned to Regional Entities?

   Once the SAR Drafting team determines the entity that will be assigned these requirements they must identify them in the "Reliability Function" section of the SAR.

   PRC-007, 008 and 009

   The SAR drafting team must review of the Applicability section in each of these standards. The SAR currently states that the Applicability is "okay" but we believe that additional clarity and reassignment of requirements is needed.

   ATC recommends that Balancing Authorities and Generator Owners be added to the list of potential entities that may be assigned either new or existing requirements.

ATC believes that any existing requirements assigned to the Transmission Operator should be reassigned to the appropriate entity. In addition, no new requirement should be assigned to the Transmission Operator.

The Applicability section identifies entities in the following manner:

'Entity Name" required by its Regional Reliability Organization to own a UFLS program.

The drafting teams should develop new language for identifying entities that are responsible for compliance with each standard.

3. Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.

☐ Yes

☐ No

Comments: The SAR fails to identity two existing standards that are related to this effort.

1) EOP-003-1 Load Shedding Plans. This standard will not be changed because of this work but the SDT should keep it in mind as they work on this set of standards.

2) PRC-005-1 Transmission and Generation Protection System Maintenance and Testing. This standard is identified in the review form for PRC-008-0 (page SAR-8). The SDT should consider if PRC-005 and PRC-008 could be combined into one single standard.

At a minimum both of these standards should appear in the Related Standards section of the SAR.

The SDT should also develop a new standard that addresses Generator Frequency Response. It's our opinion that Generator Frequency Response goes hand-in-hand with Under Frequency Load Shedding and therefore should be included in this set of standards.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	James H. Sorrels, Jr.	
Organization:	American Electric Power	
Telephone:	(614) 716-2370	
E-mail:	jhsorrels@.com	
NERC Region		**Registered Ballot Body Segment**
☒ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☒ **RFC** ☐ **SERC** ☒ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☒	1 — Transmission Owners
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Contact Organization:

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Additional Member Name	Additional Member Organization	Region*	Segment*

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You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: We support the proposed scope with the following exceptions:

   We do not support the development of Regional Standards for UFLS. Each interconnection should have an UFLS standard requirement(s), and those requirements should be applied consistently throughout the interconnection. Regional variations in UFLS requirements should be only considered in very special situations, such as for FRCC within the Eastern Interconnection. Thus, the SAR scope should include the objective to eliminate the existing Regional variations that exist today and develop interconnection wide UFLS standards. The scope should still include the ability for entities to submit technical justification for why an area within an interconnection should have a separate UFLS Standard requirement that is different the rest of the interconnection. But, the SAR scope should not include the present objective of maintaining the content of PRC-006 which requires each Region to define their UFLS requirements.

   Additionally, we would request that the drafting team consider geographic dispersion of the underfrequency response load.

   Lastly, we would request that this SAR apply to all entities that have an impact on the bulk energy system.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments: What is the technical basis of having varying Regional UFLS standards? Each Interconnection should have a consistent and coordinated UFLS standard requirement(s). Therefore, we support the development of Interconnection wide UFLS standards, not Regional standards within each interconnection, except for in situations that have technical justification to do otherwise.

We would also request clarity regarding compliance measures. Some requirements will lend themselves to plus or minus tolerances for a prescribed value, while others may be best described in terms of greater than or less than the prescribed value.

Additionally, Standard PRC-009 requires a simulation of the event (in addition to a description, a review of the set points and tripping times, and a summary of the findings). The time frame associated with providing documentation of the analysis, following the underfrequency event, is 90 calendar days (Requirement R2). Based on our experiences, we would request that the drafting team consider a longer time frame, such as 120 days.

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

Please use this form to submit comments on the proposed SAR for Underfrequency Load Shedding (UFLS). Comments must be submitted by **January 12, 2007**. You may submit the completed form by e-mail to sarcomm@nerc.com with the abbreviation "UFLS" in the subject line. If you have questions please contact David Taylor at David.Taylor@nerc.net or by telephone at 609-452-8060.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	John E. Sullivan	
Organization:	Ameren	
Telephone:	(314) 554-3833	
E-mail:	JSullivan@ameren.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☐ **MRO**	☐	3 — Load-serving Entities
☐ **NPCC**	☐	4 — Transmission-dependent Utilities
☐ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☐ **SPP**	☐	7 — Large Electricity End Users
☐ **WECC**	☐	8 — Small Electricity End Users
☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
PRC-007 — Assuring Consistency with Regional UFLS Programs
PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-009 — UFLS Performance Following an Underfrequency Event

The four standards associated with this project are all Version 0 standards. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: There is no reason to eliminate the fill-in-the-blank form of the standards. We believe that each region should continue to develop, coordinate, and maintain their own UFLS programs.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: The To Do Lists should be used as a guide to develop the scope of work for modifying these standards. However, these lists are not clear enough in themselves to constitute the scope of work for the Standard Drafting Team. These items should be considered by the Standard Drafting Team without necessarily requiring each item to become part of the reliability standards. The Standard need to include requirements for Generator Owners. (See comments under Item #3).

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments: The standards need to be revised to include Generator Owners. In some cases generator owners want to set their underfrequency trip higher than regional requirements in order to conservatively protect their generating units. Presently the generator owners are not included in the Applicability section, therefore making enforcement of regional requirements difficult. The 'Apply to the Following Functions' section did not have Generator Owner as one of the entities selected, and the 'To Do List' also did not include this.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
	☐	2 — RTOs, ISOs
	☐	3 — Load-serving Entities
	☐	4 — Transmission-dependent Utilities
	☐	5 — Electric Generators
	☐	6 — Electricity Brokers, Aggregators, and Marketers
	☐	7 — Large Electricity End Users
	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: Midwest Reliability Organization

Lead Contact: **Dave Rudolph**

Contact Organization: **MRO for Group (Basin Electric for Contact)**

Contact Segment: **10**

Contact Telephone: **701.355.5722**

Contact E-mail: **drudolph@bepc.com**

Additional Member Name	Additional Member Organization	Region*	Segment*
Alan Boesch	NPPD	MRO	10
Terry Bilke	MISO	MRO	10
Robert Coish, Chair	MHEB	MRO	10
Carol Gerou	MP	MRO	10
Ken Goldsmith	ALT	MRO	10
Todd Gosnell	OPPD	MRO	10
Jim Maenner	WPS	MRO	10
Tom Mielnik	MEC	MRO	10
Pam Oreschnick	XEL	MRO	10
Dick Pursley	GRE	MRO	10
Eric Ruskamp	LES	MRO	10
Joe Knight, Secretary	MRO	MRO	10
27 Additional MRO Members	Not Named Above	MRO	10

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
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PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: The MRO does NOT agree with the scope of the proposed project because the modification of these standards, PRC-006 through PRC-009, is a much more complex and detailed procedure than outlined in the scope.

   First, with FERC's recent announcement to remove the Regional Reliability Organizations (RRO's) from the Applicability section of ALL NERC standards, standard PRC-006 now needs to become a Regional Standard and be included in the Region's Delegation Agreement. Additionally, when a Regional Standard is developed for the UFLS program, the standard must enforce ALL member participation and that the UFLS study be customized and performed at a Regional level, not at a member level. The characteristics of each UFLS program may differ greatly between regions, thereby warranting a customized Regional Standard for each region.

   Finally, the MRO believes that the UFLS standards, PRC-007 through PRC-009 could be broadly applied to ALL entities that comply with a customized Regional UFLS standard. Therefore, for simplification purposes, the MRO would support combining standards PRC-007 through PRC-009 into one UFLS NERC standard.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments: The MRO does not have any additional comments at this time

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Kathleen Goodman	
Organization:	ISO New England	
Telephone:	(413) 535-4111	
E-mail:	kgoodman@iso-ne.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☒ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
	☒	2 — RTOs, ISOs
	☐	3 — Load-serving Entities
	☐	4 — Transmission-dependent Utilities
	☐	5 — Electric Generators
	☐	6 — Electricity Brokers, Aggregators, and Marketers
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	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

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The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: We agree with the general scope. However, the scope does not clearly state an important objective, for this and any standard revisions, that the end product should contain only the core reliability requirements without any guideline or procedure type of information. Further, we have concerns over the comments provided in the 4 tables. In fact, we question whether or not it is appropriate to include these tables in the SAR as they are not part of the appendices of the approved Reliability Standards Development Procedure (RSDP). It seems to us that this SAR has gone beyond the bound of established standard procedure. These comments do not represent the majority view of the industry as we believe they have not been reviewed and commented by industry participants. Hence, these comments can at best be regarded as views of the person or group that prepared the table. But by being included in the SAR, these comments may mislead or restrict the thinking of the Standard Drafting Team in developing the revised standards.

   We support moving forward with the standard development work according to the scope provided in the SAR, but urge the Standard Drafting Team to regard these comments as personal views only that should be forwarded through the normal SAR commenting process. We also recommend that all future SAR writers not to use materials (the table, in this case) that are not part of the approved RSDP.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments:

   1. Because PRC-005, -008, -011, and -017 are related in the maintenance issues that they cover, there would be a benefit in consolidating these requirements of the standards into one standard.

   2. Specific concerns with this Standards at issue in this SAR:

a. PRC-006-0 would benefit from greater description as to the technical requirements. Specifically, R1.2.4 needs to be defined as to what particular generator protection schemes will be included in the requirement e.g. U/F trip settings.

b. R1.2.8 is too broad & encompassing in scope covering "any other schemes that are part of or impact the UFLS programs". The schemes that may be impacted by this requirement need to be defined in order to be measurable.

c. The levels of non-compliance should be augmented in PRC-006-0. For example, a level 2 non-compliance should be added for not meeting 2 or more elements of R1. A level 3 non-compliance should be added for not meeting R2. Level 4 non-compliance should be modified to target only those entities that do not complete a UFLS assessment within the last five years or those entities who do not provide this assessment to the regional entity.

d. As indicated by FERC, PRC-008 should be modified "to include a requirement that maintenance and testing of programs must be carried out within a maximum allowable interval appropriate to the relay type and the potential impact on the Bulk-Power System."

3. The PRC Standards need to be reviewed to ensure applicable entities/functions are appropriately identified. For example, TOP's & LSEs' are missing from: (i) R1, R2 & M1 in PRC-007, and (ii) the Applicability, Requirements and Measures sections in PRC-008. In addition, in certain instances (PRC-007 & -008), because independent system operators and regional transmission organizations are TOPs, the PRC-007 and PRC-008 may not be appropriately applied to these entities, because such entities do not own/operate UFLS.

4. The SAR should consider deleting PRC-009, and add the requirements to PRC-006-0 as R1.4.3.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
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	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **Bonneville Power Transmission Services**

Lead Contact: **Lorissa Jones**

Contact Organization: **BPA Transmission Services - Reliability Program**

Contact Segment: **1**

Contact Telephone: **306-418-8978**

Contact E-mail: **ljjones@bpa.gov**

Additional Member Name	Additional Member Organization	Region*	Segment*
Gary Keenan	BPA Transmission Services	**WECC**	1
Mike Viles	BPA Transmission Services	**WECC**	1

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

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PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
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The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: BPA is in agreement with the scope of the proposed projects for PRC-006, PRC-007 and PRC-008, but not for PRC-009. The To Do List for PRC-009 notes a consideration from V0 Industry Comments of an exemption for those with shunt reactors who don't shed load. As these devices are more associated with UVLS than UFLS, BPA reccommends the removal of this item.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☐ No

   Comments:

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Mark Kuras	
Organization:	PJM	
Telephone:	610-666-8924	
E-mail:	kuras@pjm.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☒ **RFC** ☒ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☐	1 — Transmission Owners
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Additional Member Name	Additional Member Organization	Region*	Segment*

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Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: Suggest that the new UFLS shedding standard should be a continent-wide standard, or at the least, an Interconnection wide standard.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: Suggest that the new UFLS shedding standard should be a continent-wide standard, or at the least, an Interconnection wide standard. If there is real concern about a decaying frequency, then all entities within the Interconnection should contribute to support the system frequency. Therefore a single set of UFLS criteria needs to be established and implemented. Any exceptions would clearly have to be identified and justified in using the NERC standards process.

   There should only be 7 requirements in this standard. These seven would be split between NERC and the entity that has installed UFLS devices.

   NERC establish what the UFLS criteria should be, which would include transmission and generation UFLS set-points, time-delays, etc.

   NERC should establish acceptable maintenance intervals

   NERC shall establish and maintain a database of all UFLS information

   NERC should conduct an assessment of its criteria every five years

   Each entity shall meet the established criteria

   Each entity shall update its information in the NERC database each year

   Each entity shall investigate and analyze all UFLS events

   The remaining requirements in the four standards should all go away. The entities would all be subject to compliance audits to verify their compliance

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments: See above comments

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Michael Gammon	
Organization:	Kansas City Power & Light	
Telephone:	816-654-1242	
E-mail:	mike.gammon@kcpl.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☐ **MRO**	☐	3 — Load-serving Entities
☐ **NPCC**	☐	4 — Transmission-dependent Utilities
☐ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☒ **SPP**	☐	7 — Large Electricity End Users
☐ **WECC**	☐	8 — Small Electricity End Users
☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
PRC-007 — Assuring Consistency with Regional UFLS Programs
PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
PRC-009 — UFLS Performance Following an Underfrequency Event

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PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: These standards are comprehensive, complete and clear in their requirements and expectations. Load shedding needs to be region specific to meet the emergency action and reaction needs of that region. For example, regions or areas that have limited import capability may have objectives to break into islands of generation and load to preserve as much of the area as possible, where a region rich in import capability may not have any objectives to break into islands, but rather shed load in a controlled manner to match the cabability of the generation in the region to keep up with the load change(s) resulting from the shedding of regional load.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

   PRC-006

   "Lack of coordination" - It is probably a good idea to know and understand the UFLS program requirements of neighboring regions.

   "Develop Continent Standard" - The current standard is sufficient in scope and requirements to stand as a national standard. As stated above, the requirements are clear and complete to allow Regional Entities and their members to develop their unique UFLS programs, to implement them, to monitor the UFLS regional effectiveness and Regional member effectivness in maintaining their UFLS equipment. This standard serves a comprehensive national standard for developlement and implementation of UFLS in the regions.

   "Who submit compliance material to?" - I think it is understood by the industry all compliance programs are administered by Reliability Coordinators and does not need to be included in this standard.

   The remaining comments in this part of the SAR lack sufficient information to provide a specific response.

   PRC-007

   "Need language to implement" - I do not agree with the notion mentioned in the SAR document that it is necessary to add language requiring "implementation" of programs. The UFLS regional programs are required to specify in PRC-006 the frequency steps and load shed at a given step for TO's and Distribution Providers to adhere to. PRC-008 requires TO's and Distribution Providers to

maintain and test their UFLS equipment. It is not possible to comply with these standards without equipment installed in the field.

PRC-008
"Maintenance intervals not addressed" - I do agree that a minimum maintenance interval should be included in the standard for the industry to comment on. I imagine solid state relays and electromechanical relays probably have differing maintenance needs.

PRC-009
"No correseponding standard for under-voltage" - This comment is outside the scope of this standard. Any development of an under-voltage standard should be separate and distinct from the UFLS standard. Both UFLS and under-voltage involve shedding of load but to address different operating condition recovery.

General comments:
The remainder of the SAR items in the "To Do Lists" are basically editorial in nature and do not change the substance of the standard. I do not have any fundamental problems with making the suggested modifications to the standards, but I also do not see any great need either. It is unclear who the entity responsible for determining the interconnections setpoints should be.

3. Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.

☐ Yes

☐ No

Comments: To expand on the general comment above, the standards would be better organized by seperating the reliability requirements from the supporting text that explains the requirements. Measures should then be applied only to the requirements and not the text.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Mike Gentry	
Organization:	Salt River Project	
Telephone:	602-236-6408	
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NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☐ **SERC** ☐ **SPP** ☒ **WECC** ☐ **NA – Not Applicable**	☒	1 — Transmission Owners
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	☐	6 — Electricity Brokers, Aggregators, and Marketers
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Lead Contact:

Contact Organization:

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Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

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You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☐ No

   Comments: None at this time.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Verne Ingersoll	
Organization:	Progress Energy	
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NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
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1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: Progress Energy supports the overall objective of developing standards at the NERC level whenever possible. Progress Energy believes that a revision to these set of standards provide this opportunity. In order to accomplish this objective, NERC should clearly identify the objectives to be accomplished by the standards (e.g. the "what"), but not be perscriptive on "how" these objectives should be accomplished. For example, these standards should clearly identify that the underfrequency load shedding should be accomplished in such a manner to prevent cascading outages. The owners, users and operators within a Region or sub-Region could establish additional coordination details that would be most applicable to the participants area on "how" this could most effectively be performed within their region/sub-region.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: The SAR proposes to require each Regional Entity to write regional standards for UFLS. It is inappropriate for a NERC standard to apply to a Regional Entity or for a NERC standard to require an RE to write a standard. The reliability language states that standards will apply to owners, operators and users of the Bulk Power System. The REs are not owners, users or operators. The SAR should be revised to apply to appropriate owners, users and operators. In addition, the SAR should be revised to require that the owners, users and operators within a Region or sub-Region coodinate their UFLS programs. If the standards are correctly focused on the "what" needs to be accomplished via the standard, this will provide sufficient flexibility for the Regions or sub-Regions to develop coordinated approaches to "how" the standards should be implemented.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments:

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Perpetuo S. V. Tan	
Organization:	Los Angeles Department of Water & Power	
Telephone:	(818) 771-6776	
E-mail:	Perpetuo.Tan@ladwp.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☐ **MRO**	☒	3 — Load-serving Entities
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Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: Please see Attachment

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments: Please see Attachment

ATTACHMENT TO

SAR Comment Form 2007-01 UFLS

Perpetuo S. V. Tan
Los Angeles Department of Water and Power
Energy Control Center
(818) 771-6776
Perpetuo.Tan@ladwp.com

Comments regarding the scope of the project (Question #2) and additional revisions that needs to be incorporated into the standards (Question #3).

The Reliability Functions checked off on page 3 of the SAR should include the Generator Owner and Generator Operator. This is because of the need to closely coordinate load tripping frequency settings to the generating unit off-nominal protection frequency and time delay settings. The objective is to provide enough separation between the load tripping and generating unit protection frequency and time delay settings. This will allow load tripping to be completed and thereby arrest system frequency decline without activating any generating unit off-nominal frequency protection.

The recommended generating unit off-nominal frequency protection settings vary depending on the unit manufacturer and type of unit. The number of generating units in an interconnection is numerous so will the variety of manufacturer's recommended off-nominal frequency and time delay settings. The worst case of these generating unit off-nominal protection settings have to be taken into account in determining the size of load tripped at each load-shedding step. If some units are not included in the consideration, it is possible for these units to have off-nominal settings that would trip the unit during load shedding, exacerbating the situation. A solution to this problem is requiring the owner of the generating unit to trip additional load to cover the additional loss of generation. But this solution is discriminatory if an extensive survey of generator off-nominal frequency protection was not conducted prior to the design of the load shedding steps. It would be similar to adding insult to injury to require generator owners to trip additional load when their generating units were excluded in the design of Regional Reliability Organization's (RRO) UFLS Program, in the first place. Besides these generator owners may not have load available for load shedding.

It is therefore important to add a requirement to "Standard PRC-006-0 – Development and Documentation of Regional UFLS programs that a thorough survey of all the off-nominal frequency protection settings of all interconnection generating units be conducted and the results used in the design of the RRO's Regional UFLS Program.

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Richard Kafka	
Organization:	Pepco Holdings, Inc	
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E-mail:	rjkafka@pepcoholdings.com	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
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   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

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   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

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   ☐ Yes

   ☐ No

   Comments:

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Lorne Midford	
Organization:	Manitoba Hydro	
Telephone:	204-487-5426	
E-mail:	lemidford@hydro.mb.ca; rgcoish@hydro.mb.ca	
NERC Region		**Registered Ballot Body Segment**
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PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
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The four standards associated with this project are all Version 0 standards. As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. The Version 0 standards, while a good foundation, were translated from historical operating and planning policies and guides that were appropriate in an era of voluntary compliance. However, it is important to update the standards in a timely manner, incorporating improvements to make the standards more suitable for enforcement and to capture prior recommendations that were deferred during the Version 0 translation.

PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard.

The standard drafting team will work with stakeholders to review PRC-006 and each of the current regional UFLS procedures to determine which requirements should be continent-wide requirements and which requirements should be included in regional standards.

PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: In any standard, there are certain conditions which ALL utilities should apply and/or follow, to maintain a consistent level of reliaibility. However, the standard should be written with enough flexibility to ensure that any uniquenesses in a given RRO are accounted for.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

   General Comment:

   We support the requirement to upgrade standards, however, it is difficult to provide meaningful comments on the scope of work for this SAR. The SAR does not adequately communicate the proposed scope of work; it simply provides an encrypted list of requirements. NERC needs to rewrite the SAR to clearly communicate the scope of work to the stakeholders and the drafting team (beyond a summary table). A poorly written scope document will transfer into a poorly directed rewrite of a standard. Project Management 101.

   Detailed Comments:

   PRC – 007 – 0

   To Do List:

   - Need to include RA. [This should refer to the new functional model.]

   - Need to refine levels of compliance. [In what manner? Different percentages of insufficient UFLS at stated non-compliance levels? Perhaps 90%-80%-70% instead of the 95%-90%-85% presently stated?]

   PRC-008-0

   To Do List:

- Include a requirement that maintenance and testing of UFLS programs must be carried out with in a maximum allowable interval appropriate to the relay type and the potential impact on the Bulk-Power System. [A maximum maintenance interval based on the relay type and system impact should not be defined by the standard. The required maintenance frequencies can not only be dependent upon relay type and system impact, but also many factors, including relay construction, age, maintenance practices, maintenance philosophies, environment, and operating context. The responsible entities are best situated to determine the maintenance requirements of their equipment. Revising PRC-008-0 requirements to be similar to the PRC-005-1 requirements provides more consistency across the standards and includes
R1.1. Maintenance and testing intervals and their basis.
R1.2. Summary of maintenance and testing intervals.
Both these requirements make available information which can be used for a review of an entity's maintenance frequencies and practices.]

PRC – 009 – 0

Requirements – Result or Outcome. [Do not agree the “results” are “missing”. The results are inherently implied by adhering to the conditions stated in the requirements. Same as for PRC-007.]

Measures - [M1 - Disagree.]

To Do List.

Change "program" to "standard" in R1. [Disagree. Using "standard" in this location of R1 could easily be confused with using the word "standard" in the rest of the document. There is nothing inappropriate with the word "program" in the context of R1. Same as for PRC-007.]

90 days vs 30 days. [Depending on complexity of UFLS involved disturbance, 90 days may be required to properly analyze event and document results.]

Exemptions for those with shunt reactor who don’t shed load. [Do not understand context of comment. Whether or not shunt reactors are tripped out by UF relays (possibly via UFLS relay facilities) is not relevant. Dumping reactors will increase voltages, but provide no significant (if any) improvements to sagging network frequency compared to load shedding.]

3. Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.

☒ Yes

☐ No

Comments:
PRC – 007 – 0

Purpose -

If each standard included a list of all other closely related standards, the individual non-repeated purposes of related standards could be more easily compared by readers when necessary.

Requirements – Shall Do What?

R2 – "As necessary" should be removed. Annual updates of UFLS data to the RRO are necessary, even if they just only confirm that the previous year's data is still valid. Please refer to R3 comment below.

R3 – Recommend further revision of R3. As well as RRO requested data within 30 days, there should be a mandatory requested annual update. This will coordinate with comment of R2.

Measures - 2M for 3R.

By making revisions to R2 and R3 as shown above, measure M2 will now appropriately cover both R2 and R3 for annual data updating and appropriate documentation transmission to RRO.

PRC-008-0

Measure M1 needs to be revised to clearly reflect the measures applied to Requirement R1.

Comment Form — 1st Draft of SAR for Underfrequency Load Shedding

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Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Roger Champagne	
Organization:	Hydro-Québec TransÉnergie (HQTE)	
Telephone:	514 289-2211, ext. 2766	
E-mail:	champagne.roger.2@hydro.qc.ca	
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT**	☒	1 — Transmission Owners
☐ **FRCC**	☐	2 — RTOs, ISOs
☐ **MRO**	☐	3 — Load-serving Entities
☒ **NPCC**	☐	4 — Transmission-dependent Utilities
☐ **RFC**	☐	5 — Electric Generators
☐ **SERC**	☐	6 — Electricity Brokers, Aggregators, and Marketers
☐ **SPP**	☐	7 — Large Electricity End Users
☐ **WECC**	☐	8 — Small Electricity End Users
☐ **NA – Not Applicable**	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact E-mail:

Additional Member Name	Additional Member Organization	Region*	Segment*

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information

This project involves revising the requirements in the following four standards:

PRC-006 — Development and Documentation of Regional Reliability Organizations' Underfrequency Load Shedding Programs
PRC-007 — Assuring Consistency with Regional UFLS Programs
PRC-008 — Underfrequency Load Shedding Equipment Maintenance Programs
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PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments:

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☒ Yes

   ☐ No

   If "No," please explain why in the comment area below and provide supporting information.
   Comments: HQTE agree with the scope which is essentially a broad review of these existing standards. It is our understanding that the information provided on the ``Standard Review Forms`` are just starting elements that will be considered by the SAR or Standards Drafting Team in their proposition for modifications to the existing standards.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☒ Yes

   ☐ No

   Comments:

   To be a bit more specific, the scope could indicate, among other things, that violation risk factor and violation severity levels will be introduce.

   Since the scope is very broad, specific comments will be provided when actual revisions to the standards are proposed.

   Considering Québec Interconnection asynchronous ties, a particular concern for HQTE will be the technical requirements (frequency set points, size of loads, tripping times, etc…) that will be eventually proposed. These will probably be dealt with when regional standards will be specified.

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Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		**Registered Ballot Body Segment**
☐ **ERCOT** ☐ **FRCC** ☐ **MRO** ☐ **NPCC** ☐ **RFC** ☒ **SERC** ☐ **SPP** ☐ **WECC** ☐ **NA – Not Applicable**	☒	1 — Transmission Owners
	☐	2 — RTOs, ISOs
	☐	3 — Load-serving Entities
	☐	4 — Transmission-dependent Utilities
	☐	5 — Electric Generators
	☐	6 — Electricity Brokers, Aggregators, and Marketers
	☐	7 — Large Electricity End Users
	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **Southern Company Transmission**

Lead Contact: **Roman Carter**

Contact Organization: **Southern Co. Transmission**

Contact Segment: **1**

Contact Telephone: **205.257.6027**

Contact E-mail: **jrcarter@southernco.com**

Additional Member Name	Additional Member Organization	Region*	Segment*
Marc Butts	Southern Co. Transmission	**SERC**	1
J.T. Wood	Southern Co. Transmisssion	**SERC**	1
Jim Busbin	Southern Co. Transmission	**SERC**	1
Jim Griffith	Southern Co. Transmission	**SERC**	1
Mike Oatts	Southern Co. Transmission	**SERC**	1
Rodney O'Bryant	Southern Co. Transmission	**SERC**	1
Barry Dyer	Alabama Power Co.	**SERC**	3
Jonathan Glidewell	Southern Co. Transmission	**SERC**	1
Roger Green	Southern Co. Generation	**SERC**	5
Bob Jones	Southern Co. Transmission	**SERC**	1

*If more than one region or segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

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PRC-007 through PRC-009 have some "fill-in-the-blank" characteristics, as identified in the Regional Reliability Standards Working Group work plan, which need to be removed.

The standard drafting team may include other improvements to the standards deemed appropriate by the drafting team, with the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: Southern feels that PRC-006 through PRC-009 are standards which need to address specific Regional development principles and therefore should be Regional Standards.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments: While we agree with most of the Standard Review Forms, Southern does not agree that all recommendations contained in the To-Do-List from the Standard Review Forms are necessary. For example, while we agree the RC would utilize the UFLS as a means to relieve an emergency situation, we do not agree that the RC should be included in the Applicability section. There are no particular requirements that would address the RC and, therefore, it would be more appropriate for these standards to be applicable to the Load Serving Entity (LSE) or possibly the Transmission Owner (TO).

   Also, the term Evidence should be used in the Measurements in this standard as in other standards- it includes but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications, computer printouts or other equivalent evidence.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☐ No

   Comments: Under PRC-006, Requirement 1.2, it is recommended the Regions have the responsibility for design details for determining Load Shedding Blocks (MWs), intentional and total tripping time delays, Generation protection, Islanding Schemes, Tie tripping schemes (within a Region), frequency set points (excludes BAL standard) and Load Restoration schemes. Also, the reporting of the time delay should only include the total time and not include the intentional time delay. The intentional time delay is included in the total time.

   In PRC-006, Requirement 1.3, the Regional UFLS database is required to be updated at least every 5 years. However, under PRC-007, R2, the Transmission Owner is required to update its underfrequency data at least annually. These two timing update requirements should be consistent with one another.

In PRC-008 it is unclear how often the Transmission Owners are required to assess its maintenance and testing program. We recommend adding language to the SAR that says on a "as needed" basis.

Under PRC-008, Requirement 2, it states that Transmission Owner must implement its maintenance and testing program that is required in R1. It would seem more appropriate to include the implementation portion of R2 into R1 to say the Transmission Owner must have and implement a maintence and testing program.

The SAR drafting team should recognize that individual generator frequency trip set points are established by the manufacturer of the generator and not by the Generator Owner. Therefore, in the development of the underfrequency load shedding scheme, each Transmission Owner should recognize that these generator frequency trip settings cannot be adjusted and the load shedding schemes should take this into account. This standard should not require a Generator Owner to operate beyond the limits set by the manufacturer.

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Organization:		
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	☐	8 — Small Electricity End Users
	☐	9 — Federal, State, Provincial Regulatory or other Government Entities
	☐	10 - Regional Reliability Organizations and Regional Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **FRCC**

Lead Contact: **Eric Senkowicz**

Contact Organization: **FRCC**

Contact Segment: **2**

Contact Telephone: **813-289-5644**

Contact E-mail: **esenkowicz@frcc.com**

Additional Member Name	Additional Member Organization	Region*	Segment*
John Odom	FRCC	**FRCC**	2
Alan Gale	City of Tallahassee	**FRCC**	5
Ted Hobson	JEA	**FRCC**	1
Garl Zimmerman	Seminole Electric Cooperative	**FRCC**	5
John Shaffer	Florida Power & Light	**FRCC**	1
Bob Schoneck	Florida Power & Light	**FRCC**	3

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Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. **Do you believe that there is a reliability-related need to eliminate the "fill-in-the-blank" characteristics and upgrade the requirements in this set of standards?**

   ☐ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

   As stated in the SAR description, "PRC-006 is one of the few reliability standards identified by the Regional Reliability Standards Working Group as a standard that has some requirements that need to be defined by each regional entity in a regional standard" and therefore some "fill-in-the-blank" characteristics cannot be eliminated and will need to be retained within the revised standard (requirements on regionally specific design criteria).

   We do agree that some requirements need clarification and upgrading in order to become mandatory and enforceable.

2. **Do you agree with the scope of the proposed project (the scope includes all the items noted on the "Standard Review Forms" attached to the SAR as well as other improvements to the standards that meet the consensus of stakeholders, consistent with establishing high quality, enforceable, and technically sufficient bulk power system reliability standards)?**

   ☒ Yes

   ☒ No

   If "No," please explain why in the comment area below and provide supporting information.

   Comments:

   Aside from being broad and open-ended, the SAR Standard Review Form, To Do List, for PRC-006-0 includes two references not defined within the SAR, 1) (see recommendations for improvement), 2) (especially #21). We recommend relevant sections of the references be included in the final SAR and should be provided to the Standard Drafting Team.

3. **Please identify any additional revisions that should be incorporated into this set of standards, beyond those that have already been identified in the SAR.**

   ☐ Yes

   ☒ No

   Comments: