NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project 2008-02 Undervoltage Load Shedding

The Project 2008-02 drafting team thanks all commenters who submitted comments on the draft standard **PRC-010-1 – Undervoltage Load Shedding**. The draft standard was posted for a 30-day informal comment period from March 17, 2014 through April 16, 2014. Stakeholders were asked to provide feedback on the draft standard through a special electronic comment form. There were 25 sets of responses, including comments from approximately 83 different people from approximately 60 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments submitted may be reviewed in their original format on the project page.

The drafting team reviewed all comments carefully and made changes to the standard accordingly; though the Standard Processes Manual (SPM) does not require the drafting team to respond to comments during an informal comment period, the drafting team has responded to each comment individually to ensure that every concern was given due attention and consideration.

If you feel your concern has not been addressed, you can contact the Standards Developer, Erika Chanzes, at 404-446-2583 or at erika.chanzes@nerc.net.

Index to Questions, Comments, and Responses

The Industry Segments are:

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, Regional Entities

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Joe DePoorter	MRO NERC Standards Review Forum	X	X	X	X	X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alice Ireland	Xcel Energy	MRO	1, 3, 5, 6
2.	Chuck Wicklund	Otter Tail Power	MRO	1, 3, 5
3.	Dan Inman	Minnkota Power Cooperative	MRO	1, 3, 5
4.	Dave Rudolph	Basin Electric Power Cooperative	MRO	1, 3, 5, 6
5.	Kayleigh Wilkerson	Lincoln Electric System	MRO	1, 3, 5, 6
6.	Jodi Jensen	Western Area Power Administration	MRO	1, 5
7.	Ken Goldsmith	Alliant Energy	MRO	4
8.	Mahmood Safi	Omaha Public Power District	MRO	1, 3, 5, 6
9.	Marie Knox	MISO	MRO	2
10.	Mike Brytowski	Great River Energy	MRO	1, 3, 5, 6

Group/Individual	Commenter	Organization	Registered Ballot Body Segment									
			1	2	3	4	5	6	7	8	9	10
11. Randi Nyholm	Minnesota Power	MRO	1, 5									
12. Scott Bos	Muscatine Power & Water	MRO	1, 3, 5, 6									
13. Scott Nickels	Rochester Public Utilities	MRO	4									
14. Terry Harbour	MidAmerican Energy	MRO	1, 3, 5, 6									
15. Tom Breene	Wisconsin Public Service	MRO	3, 4, 5, 6									
16. Terry Eddleman	Nebraska Public Power District	MRO	1, 3, 5									
2. Group	Guy Zito	Northeast Power Coordinating Council	X	X	X		X	X		X	X	X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	David Burke	Orange and Rockland Utilities Inc.	NPCC	3
3.	Greg Campoli	New York Independent System Operator	NPCC	2
4.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1
5.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1
6.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10
7.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5
8.	Matt Goldberg	ISO - New England	NPCC	2
9.	Michael Jones	National Grid	NPCC	1
10.	Mark Kenny	Northeazst Utilities	NPCC	1
11.	Christina Koncz	PSEG Power LLC	NPCC	5
12.	Helen Lainis	Independent Electricity System Operator	NPCC	2
13.	Michael Lombardi	Northeast Power Coordinating Council	NPCC	10
14.	Alan MacNaughton	New Brunswick Power Corporation	NPCC	9
15.	Bruce Metruck	New York Power Authority	NPCC	6
16.	Silvia Parada Mitchell	NextEra Energy, LLC	NPCC	5
17.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10
18.	Robert Pellegrini	The United Illuminating Company	NPCC	1
19.	Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1
20.	David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5
21.	Brian Robinson	Utility Services	NPCC	8
22.	Ayesha Sabouba	Hydro One Newtworks Inc.	NPCC	1
23.	Brian Shanahan	National Grid	NPCC	1

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
24. Wayne Sipperly			New York Power Authority	NPCC	5								
25. Ben Wu			Orange and Rockland Utilities Inc.	NPCC	1								
26. Peter Yost			Consolidated Edison Co. of New York, Inc.	NPCC	3								
3.	Group	Colby Bellville	Duke Energy	X		X		X	X				
	Additional Member	**Additional Organization**	**Region**	**Segment Selection**									
1.	Doug Hils	Duke Energy	RFC	1									
2.	Lee Schuster	Duke Energy	FRCC	3									
3.	Dale Goodwine	Duke Energy	SERC	5									
4.	Greg Cecil	Duke Energy	RFC	6									
4.	Group	Jason Marshall	ACES Standards Collaborators	X					X				
	Additional Member	**Additional Organization**	**Region**	**Segment Selection**									
1.	Al Tamimi	Sunflower Electric Power Corporation	SPP	1									
2.	Shari Heino	Brazos Electric Power Cooperative	ERCOT	1, 5									
3.	Bob Solomon	Hoosier Energy	RFC	1									
5.	Group	Greg Campoli	ISO RTO Council Standards Review Committee		X								
	Additional Member	**Additional Organization**	**Region**	**Segment Selection**									
1.	Ben Li	IESO	NPCC	2									
2.	Charles Yeung	SPP	SPP	2									
3.	Cheryl Moseley	ERCOT	ERCOT	2									
4.	Tom Bowe	PJM	RFC	2									
6.	Group	Robert Rhodes	SPP Standards Review Group	X	X	X	X	X					
	Additional Member	**Additional Organization**	**Region**	**Segment Selection**									
1.	Jonathan Hayes	Southwest Power Pool	SPP	2									
2.	Shannon Mickens	Southwest Power Pool	SPP	2									
3.	James Nail	City of Independence, MO	SPP	3									
4.	Don Schmit	Nebraska Public Power District	MRO	1, 3, 5									
5.	J. Scott Williams	City Utillities of Springfield	SPP	1, 4									
7.	Individual	Kaleb Brimhall	Colorado Springs Utilities	X		X		X	X				
8.	Individual	Janet Smith	Arizona Public Service Company	X		X		X	X				

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
9.	Individual	Mike O'Neil	Florida Power & Light	X									
10.	Individual	Derrick Davis	Texas Reliability Entity, Inc.										X
11.	Individual	William H. Chambliss	Virginia State Corporation Commission, member OC										
12.	Individual	Thomas Foltz	American Electric Power	X		X		X	X				
13.	Individual	Amy Casuscelli	Xcel Energy Inc.	X		X		X	X				
14.	Individual	Ayesha Sabouba	Hydro One	X		X							
15.	Individual	Michael Falvo	Independent Electricity System Operator		X								
16.	Individual	Dan Inman	Minnkota Power Cooperative	X									
17.	Individual	Trevor Schultz	Idaho Power Company	X									
18.	Individual	Anthony Jablonski	ReliabiltiyFirst										X
19.	Individual	Andrew Z. Pusztai	American Transmission Company, LLC	X									
20.	Individual	Gul Khan	Oncor Electric Delivery LLC	X									
21.	Individual	Catherine Wesley	PJM Interconnection		X								
22.	Individual	Bill Temple	Northeast Utilities	X									
23.	Individual	John Pearson	ISO New England		X								
24.	Individual	Keith Morisette	Tacoma Power	X		X	X	X	X				
25.	Individual	Richard Vine	California ISO		X								

1. **The drafting team has revised the wording of the proposed defined term UVLS Program and added information to the rationale box and Guidelines and Technical Basis. Specifically, the team has clarified the attributes of a UVLS Program, including that the definition is independent of how the program is armed, and how the exclusion of centrally-controlled undervoltage-load shedding will be addressed. Does the definition now provide the needed clarity necessary to understand which types of UVLS are applicable to the standard? If no, please indicate in the comment section what is unclear and provide specific suggested changes.**

Summary Consideration: The drafting team thanks all commenters for their time and attention. Based on the feedback received, the drafting team has adjusted the definition to clarify that a UVLS Program must "mitigate undervoltage conditions leading to voltage instability, voltage collapse, or Cascading impacting the Bulk Electric System (BES)."

The drafting team notes that it has given much thought and consideration to use of the term "wide-area" prior to "voltage collapse," as the team agrees that this is the most relevant term to qualify the type of impact a UVLS Program must mitigate. Accordingly, the term "wide area" is utilized in the Guidelines and Technical Basis to support the drafting team's intent. However, the drafting team also agrees that the meaning and measurement of this term varies greatly on a continent-wide basis and could potentially be interpreted differently by auditors and the applicable functional entities if included as part of the enforceable language. Therefore, with the above noted adjustment to the definition, the drafting team has also adjusted the accompanying Rationale box to clarify that the intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES.

In addition, the drafting team agrees that multiple independent relays do not constitute a program. As a point of the clarification, the phrase "consisting of distributed relays and controls" is meant to enhance the understanding of the type of program being defined. A UVLS Program must first and foremost be an automatic load shedding program that mitigates the specified conditions impacting the BES as stated in the definition. By nature of this definition, this would include relays that are coordinated and act in concert for this purpose. As such, the standard is not applicable to/is not requiring the assessment of the simultaneous failure of independent schemes.

The drafting team has given every comment due consideration and has responded to each individually. Please see below for responses to specific concerns.

Organization	Yes or No	Question 1 Comment
American Transmission Company, LLC	No	ATC asks the SDT please consider the following modification of the proposed UVLS Definition to qualify that these are programs that are developed by the Planning Coordinator or the Transmission Planner and not temporary schemes that are developed by the Transmission Operator. ATC recommends revising the definition as follows: Undervoltage Load Shedding Program (UVLS Program): "An automatic load shedding program developed by the Planning Coordinator or Transmission Planner consisting of distributed relays and controls used to mitigate the risk of Cascading, voltage instability, voltage collapse, or uncontrolled separation resulting from undervoltage conditions. Centrally controlled undervoltage based load shedding is not included." **RESPONSE: The drafting team thanks you for your comment. Upon consideration, the drafting team maintains that the requested explicit qualification that UVLS Programs are developed by the Planning Coordinator or Transmission Planner and are not temporary schemes developed by the Transmission Operator is not necessary on the basis that the nature of a scheme developed by a Transmission Operator would not meet the attributes of the defined term.**
Idaho Power Company	No	I suggest adding the words "wide area" prior to the words "voltage collapse" in the UVLS Program definition. It seems the SDT's intent is to exclude UVLS systems used to mitigate the risk of "local" voltage collapse, as illustrated by the "Radial BES Subsystem" example in the PRC-010-1 Application Guidelines. In fact, the phrase "wide area voltage collapse" is used in the verbiage of this example. As the UVLS definition currently reads, it could be interpreted to include UVLS schemes implemented with the purpose of preventing local "voltage collapse", such as the scheme described in the Application Guidelines example. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that there has been much consideration given to using the term "wide area" in the definition itself. While the team agrees that this is the most relevant term to qualify the intent, the term "wide area" is considered ambiguous and not transportable on**

Organization	Yes or No	Question 1 Comment
		a continent-wide basis, and could therefore potentially be interpreted differently by auditors and the applicable functional entities. As such, the intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.
Tacoma Power	No	Tacoma Power has the following comments: Why is the verbiage "...and controls..." included in the proposed definition of a UVLS Program? Consider replacing "...relays and controls..." with just "...relays..." **RESPONSE: The drafting team thanks you for your comment. The drafting team has maintained the inclusion of "controls," as the term refers to multifunctional microprocessor-based controllers armed for UVLS.** In the proposed definition of a UVLS Program, consider replacing 'used' with 'intended' or otherwise more clearly exclude undervoltage relaying intended primarily or exclusively for equipment protection. **RESPONSE: The drafting team thanks you for your comment. The drafting team has added the phrase "impacting the Bulk Electric System", which should help further clarify that the term excludes UVLS relays that are exclusively for equipment protection.** In the proposed definition of a UVLS Program, consider changing "...voltage collapse..." to "...wide-area voltage collapse..." The latter description is used in the Application Guidelines. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that there has been due consideration to using the term "wide area" in the definition itself. While the team agrees that this is the most relevant term to qualify the intent, the term "wide area" is considered ambiguous and not transportable on a**

Organization	Yes or No	Question 1 Comment
		continent-wide basis, and could therefore potentially be interpreted differently by auditors and the applicable functional entities. As such, the intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.
Northeast Power Coordinating Council	No	The "distributed" attribute needs clarification. Often in one geographic region there are multiple UVLS schemes that are totally independent from each other and individually respond to various contingencies. Although there is always a possibility that one severe contingency would trigger two or more of these schemes, this by itself should not make the collection of UVLS schemes a "distributed" UVLS Program. When multiple UVLS schemes are armed in one region, even if one of them fails to shed its load in response to a severe contingency, the others will respond and the failure of one UVLS scheme will impact only its "contained area". Is the proposed standard requiring the assessment of the simultaneous failure of all independent UVLS schemes in the region, or failure of only one of those schemes, to determine if there is "Adverse Reliability Impact outside this contained area"? **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that multiple independent relays do not constitute a program. The phrase "consisting of distributed relays and controls" is meant to enhance the understanding of the type of program being defined. A UVLS Program must first and foremost be an automatic load shedding program that mitigates the specified conditions impacting the BES as stated in the definition. By nature of this definition, this would include relays that are coordinated and act in concert for this purpose. As such, the standard is not applicable to/is not requiring the assessment of the simultaneous failure of independent schemes.**

Organization	Yes or No	Question 1 Comment
Hydro One	No	The "distributed" attribute needs clarification. Often in one geographic region there are multiple UVLS schemes that are totally independent from each other and individually respond to various contingencies. Although there is always a possibility that one severe contingency would trigger two or more of these schemes, this by itself should not make the collection of UVLS schemes a "distributed" UVLS Program. When multiple UVLS schemes are armed in one region, even if one of them fails to shed its load in response to a severe contingency, the others will respond and the failure of one UVLS scheme will impact only its "contained area". Is the proposed standard requiring the assessment of the simultaneous failure of all independent UVLS schemes in the region, or failure of only one of those schemes, to determine if there is "Adverse Reliability Impact outside this contained area"? **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that multiple independent relays do not constitute a program. The phrase "consisting of distributed relays and controls" is meant to enhance the understanding of the type of program being defined. A UVLS Program must first and foremost be an automatic load shedding program that mitigates the specified conditions impacting the BES as stated in the definition. By nature of this definition, this would include relays that are coordinated and act in concert for this purpose. As such, the standard is not applicable to/is not requiring the assessment of the simultaneous failure of independent schemes.**
ACES Standards Collaborators	No	The combination of the definition, rationale boxes and application guidelines provide excellent description, clarification and support for which types of UVLS relays the standard is applicable. However, we would like further clarification regarding the inconsistencies between UVLS Program definition and the application guidelines that could lead to varying compliance outcomes. For instance, the application guidelines are clear on page 18 that the UVLS Program would apply to wide area voltage collapse. Given that NERC has defined wide area to include the entire reliability coordinator area, one could infer that wide area voltage collapse would exceed the area beyond a single BA. However, the actual definition of UVLS Program only

Organization	Yes or No	Question 1 Comment
		includes voltage collapse which could include a local, small area voltage collapse. The example provided on page 18 makes clear that this is not the drafting team intent. However, FERC does not approve application guidelines. The Commission only approves definitions and requirements with only the requirements becoming enforceable. Thus, this could lead to inconsistent compliance outcomes. We support that concept of UVLS Program applying to a wide area voltage collapse. To remedy this issue, we recommend modifying the UVLS Program definition to include "Wide Area" before voltage collapse which is a NERC defined term that includes the entire RC Area as well as the critical flow and status information from adjacent RC Areas as determined by detailed system studies to allow the calculation of IROLs. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that there has been much consideration given to using the term "wide area" in the definition itself. While the team agrees that this is the most relevant term to qualify the intent, the term "wide area" is considered ambiguous and not transportable on a continent-wide basis, and could therefore potentially be interpreted differently by auditors and the applicable functional entities. Also, the drafting team asserts that the NERC Glossary defined term "Wide Area" is not applicable, as it is tied to a Reliability Coordinator Area, which is potentially very large. For instance, in WECC, this would equate to the entire Interconnection.** **The intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.**
Northeast Utilities	No	The definition is not clear enough to determine what is a "UVLS Program". The "distributed" attribute needs clarification. Often in one geographic region there are

Organization	Yes or No	Question 1 Comment
		multiple UVLS schemes that are totally independent from each other and individually respond to various contingencies. Although there is always a possibility that one severe contingency would trigger two or more of these schemes, this by itself should not make the collection of UVLS schemes a "distributed" UVLS Program. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that multiple independent relays do not constitute a program. The phrase "consisting of distributed relays and controls" is meant to enhance the understanding of the type of program being defined. A UVLS Program must first and foremost be an automatic load shedding program that mitigates the specified conditions impacting the BES as stated in the definition. By nature of this definition, this would include relays that are coordinated and act in concert for this purpose. As such, the standard is not applicable to/is not requiring the assessment of the simultaneous failure of independent schemes.** The definition would become more clear if the clarification on page 18 (second paragraph) of the standard (Application Guide) is applied to the definition. The suggested definition for the "Undervoltage Load Shedding Program (UVLS Program)" based on the clarification of page 18 of the standard (application guide section) should be: "An automatic load shedding scheme that is used to mitigate the risk of Cascading, voltage instability, voltage collapse, or uncontrolled separation resulting from undervoltage conditions, within and outside of the local contained area". **RESPONSE: The drafting team thanks you for your suggestion. The drafting team notes that there has been much consideration given to using words such as "local" and "contained" to help qualify those programs that are excluded from the definition (as per the example given in the Guidelines and Technical Basis). However, these terms are considered ambiguous and are not transportable on a continent-wide basis, and could therefore potentially be interpreted differently by auditors and the applicable functional entities. The intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to**

Organization	Yes or No	Question 1 Comment
		determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.
PJM Interconnection	No	The drafting team did not address, in this posting, PJM's comment regarding the term "localized" which is not a defined term. The term potentially could be interpreted differently by auditors and the applicable functional entities. The term needs to be defined clearly to eliminate ambiguity. Additionally, PJM did not find a reference or explanation for our recommendation posted in the Consideration of Comments that were developed for industry comments submitted in October, 2013. PJM would appreciate understanding the drafting team's decision not to provided clarity for this term. **RESPONSE: The drafting team thanks you for your comment. In response to your comment that was submitted in October 2013, the drafting team agreed that the term "localized" was ambiguous and could potentially be interpreted differently by auditors and the applicable functional entities. The drafting team points out that the term "localized" was removed and not reflected in this posting. The exclusion for which the term "localized" was used is now qualified with non-ambiguous language in the definition and supported by an example in the respective section in the Guidelines and Technical Basis.**
Virginia State Corporation Commission, member OC	No	The logic for excluding ALL centrally-controlled undervoltage load shedding appears weak. All such programs are excluded because some MAY either use voltage inputs from various locations or use inputs other than voltages in their logic. It seems more reasonable to exclude only those centrally controlled undervoltage shedding that POSITIVELY fits either of the above characteristics, rather than excluding all because some MAY fit either.

Organization	Yes or No	Question 1 Comment
		RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with your concern with the language as written and reworked the language as follows to more accurately convey the intent (note that this now appears in the Guidelines and Technical Basis section): **"The definition for the term UVLS Program excludes centrally controlled undervoltage-based load shedding, which utilizes inputs from multiple locations and may also utilize inputs other than voltages (such as generator reactive reserves, facility loadings, equipment statuses, etc.). The design and characteristics of a centrally controlled undervoltage-based load shedding system are the same as that of a RAS, wherein load shedding is the remedial action. Therefore, just like for a RAS, the failure of a single component can compromise the reliable operation of centrally controlled undervoltage-based load shedding."**
American Electric Power	No	The proposed definition for Undervoltage Load Shedding Program makes no distinction between UVLS devices implemented on Distribution feeder circuits and BES (100kV and above) circuits. The previous PRC-021-1 only applied to UVLS programs used "to mitigate the risk of voltage collapse or voltage instability in the *BES*" (emphasis added). Please clarify whether or not the proposed definition applies only to the BES. **RESPONSE: The drafting team thanks you for your comment. The phrase "impacting the Bulk Electric System" has been added to the definition to further clarify the applicable UVLS systems. The drafting team also notes that, regardless of where the UVLS devices are located and where they trip, if a UVLS system is there to protect the BES, the program falls under the definition/is applicable to the standard.**
Texas Reliability Entity, Inc.	No	The scope of the UVLS program per the proposed definition seems to be solely toward voltage-related IROLs. We disagree with this approach and feel that the overarching need for any UVLS protection system is to meet the BES performance requirements as stated in the TPL standards and the UVLS definition should be stated on that basis (whether the ULVS systems is applied for a steady-state, post-

Organization	Yes or No	Question 1 Comment
		contingency, stability, or transient condition) for those TPL cases where non-consequential load loss is allowed (i.e. P2, P4, P5, P6, and P7 contingencies). As such, the definition of the UVLS program should be stated in a manner that the UVLS program provides the required BES performance per the TPL. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the definition is not specific to performance required per TPL Reliability Standards because a UVLS Program may be developed and implemented to serve as a safety net system protection measure against unforeseen extreme Contingencies. However, the phrase "impacting the Bulk Electric System" has been added to the definition to further clarify the applicable UVLS systems.**
ISO New England	No	The standard defines an Undervoltage Load Shedding Program (UVLS Program) as "An automatic load shedding program consisting of distributed relays and controls used to mitigate the risk of Cascading, voltage instability, voltage collapse, or uncontrolled separation resulting from undervoltage conditions. Centrally-controlled undervoltage-based load shedding is not included." Comment: The term distributed needs additional clarification. Often in a geographic region there are multiple UVLS schemes that are totally independent of one another and respond individually to various contingencies. These schemes are local to the area. A program would consist of a coordinated group of relays designed to manage voltage issues over a wide area of the power system. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that multiple independent relays do not constitute a program. The phrase "consisting of distributed relays and controls" is meant to enhance the understanding of the type of program being defined. A UVLS Program must first and foremost be an automatic load shedding program that mitigates the specified conditions impacting the BES as stated in the definition. By nature of this definition, this would include relays that are coordinated and act in concert for this purpose.**

Organization	Yes or No	Question 1 Comment
California ISO	No	This definition is extremely difficult to understand, and the example posed in the Standard lacks clarity. Verbiage in the standard indicates that a centralized UVLS would be considered an SPS. Yet there is also a citation that appears to exempt UVLS restricted to a single station. This raises the question, how many stations need to be involved, and/or how wide the impacted area? WECC has developed definitions for RAS/SPS impact by defining either the amount of generation and/or load that is impacted by the SPS. It would add a lot more clarity if NERC were to adopt clear bright lines as to how much load and/or generation needs to be impacted before an UVLS is subject to the Standard. **RESPONSE: The drafting team thanks you for your comment. The drafting team maintains that there cannot be a firm number or established bright lines to qualify the impact since these measurements vary greatly on a continent-wide basis. Note that it is the drafting team's understanding that WECC has only established classifications for RAS/SPS impacts in terms of amount of generation/load, and not a firm definition.** **The intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.**
Minnkota Power Cooperative	Yes	Minnkota Power Cooperative believes the definition and the enforceable standard should match the intent expressed in the guidelines. The guidelines express a specific criteria for wide-area issues ("wide-area voltage collapse" and "wide-area voltage undervoltage problems"). MPC supports this wide area criteria and suggest applying the criteria outlined in guidance to the definition for UVLS Programs: "Undervoltage Load Shedding Program (UVLS Program): An automatic load shedding program consisting of distributed relays and controls used to mitigate the risk of

Organization	Yes or No	Question 1 Comment
		Cascading, voltage instability, wide-area voltage collapse, or uncontrolled separation resulting from wide-area undervoltage conditions. Centrally-controlled undervoltage-based load shedding is not included." **RESPONSE: The drafting team thanks you for your support. In relation to your comment, the drafting notes that there has been much consideration given to using the term "wide area" in the definition itself. While the team agrees that this is the most relevant term to qualify the intent, the term "wide area" is considered ambiguous and not transportable on a continent-wide basis, and could therefore potentially be interpreted differently by auditors and the applicable functional entities. As such, the intent of the definition is to provide flexibility for the Planning Coordinator or Transmission Planner to determine if a UVLS system falls under the defined term with respect to the impact on the reliability of the BES (voltage instability, voltage collapse, or Cascading). The phrase "impacting the Bulk Electric System" has been added to the definition for further clarification, and this flexibility has been further clarified in the accompanying Rationale box.**
MRO NERC Standards Review Forum	Yes	**RESPONSE: The drafting team thanks you for your support.**
Duke Energy	Yes	**RESPONSE: The drafting team thanks you for your support.**
SPP Standards Review Group	Yes	**RESPONSE: The drafting team thanks you for your support.**
Colorado Springs Utilities	Yes	**RESPONSE: The drafting team thanks you for your support.**
Arizona Public Service Company	Yes	**RESPONSE: The drafting team thanks you for your support.**
Florida Power & Light	Yes	**RESPONSE: The drafting team thanks you for your support.**
Xcel Energy Inc.	Yes	**RESPONSE: The drafting team thanks you for your support.**

Organization	Yes or No	Question 1 Comment
Independent Electricity System Operator	Yes	**RESPONSE: The drafting team thanks you for your support.**
Oncor Electric Delivery LLC	Yes	**RESPONSE: The drafting team thanks you for your support.**

2. **The drafting team has added clarification of the meaning of the phrase "Planning Coordinator or Transmission Planner" in a rationale box supporting the Applicability section. In addition, Requirements R7 and R8 are now applicable to only the Planning Coordinator. In light of these clarifications and revisions, do you agree with the Applicability of proposed PRC-010-1? If no, please indicate your concerns in the comment section.**

Summary Consideration: The drafting team thanks all commenters for their time and attention. Based on the feedback received, the drafting team notes the following with respect to the functional entities to which PRC-010-1 is applicable:

The Transmission Planner is not an applicable entity with respect to maintaining and sharing a UVLS Program database (Requirements R6–R8) because a Planning Coordinator will always have data on all of the programs in its area regardless of whether or not it was the developer of the program. A Transmission Planner may also maintain data if it is the developer of the UVLS Program, but there is no requirement to do so as it would be duplicative to what the Planning Coordinator already does.

The Transmission Operator is not an applicable entity in the standard because the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still the accountable party. It is also noted that manual load shedding, for which the Transmission Operator is responsible, is not in the purview of PRC-010-1, as it is covered under current EOP-003-2, and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations).

The drafting teams agrees that in addition to the clarity provided in the Rationale box accompanying the Applicability section with respect to the phrase "Planning Coordinator or Transmission Planner," the enforceable language of the requirements should also reflect how to determine which is the responsible entity. This has been addressed with adjustments to the language of some of the requirements and/or further explanation—please see the individual responses to those commenters who had the concern.

The drafting team has given every comment due consideration and has responded to each individually. Please see below for responses to specific concerns.

Organization	Yes or No	Question 2 Comment
California ISO	No	1. For R6 and R7, add "Transmission Planner and Transmission Operator" in addition to the Planning Coordinator, such that UVLS entities will be required to provide data to the PC, TP, and TOP. 2. For R8, require “Each Planning Coordinator or Transmission Planner” to provide their database, and add “Transmission Operator” as a recipient for the UVLS Program database. The result would be that R8 would read as follows: "Each Planning Coordinator or Transmission Planner that has a UVLS Program in its area shall provide its UVLS Program database to other Planning Coordinators, Transmission Planners, and Transmission Operators within its Interconnection within 30 calendar days of a request." **RESPONSE: The drafting team thanks you for your comment. In response to the addition of the Transmission Planner to Requirements R6–R8, the drafting team notes that a Planning Coordinator will always have data on all of the programs in its area. A Transmission Planner may also maintain data, but there is no requirement to do so as it would be duplicative to what the Planning Coordinator already does.** **With regard to the addition of the Transmission Operator to Requirements R6 and R7, the drafting notes that the type of data being received and maintained is for the purpose of planning activities for UVLS Programs that would be developed by Planning Coordinators or Transmission Planners. Due to its defining attributes, a UVLS Program would not be developed by a Transmission Operator, and therefore the Transmission Operator should not be applicable to requirements regarding maintaining a database or receiving data from UVLS entities.** **The drafting team agrees that a Transmission Operator may have a reliability need for a Planning Coordinator’s UVLS Program database. The drafting team has therefore adjusted Requirement R8 to include “other functional entities with a reliability need” as recipients of the database upon request, and has specified in the accompanying Rationale box that an example of these functional entities are Transmission Operators that develop System Operating Limits.**

Organization	Yes or No	Question 2 Comment
ReliabiltiyFirst	No	ReliabilityFirst provides the following comments for considerations: 1. Requirement R1 - ReliabilityFirst requests clarification on why Requirement R1 is applicable to both the Planning Coordinator and Transmission Planner? In the scenario where the Planning Coordinator has an UVLS program, it would be counterintuitive for a Transmission Planner within the Planning Coordinator's area to have an UVLS program as well. ReliabilityFirst recommends structuring this standard in the same fashion as the NERC PRC-006-1 (UFLS) Standard and remove the Transmission Planner as an Applicable Entity within the standard. If the Planning Coordinator and Transmission Planner are included based on differences within Regional Entity footprints, ReliabilityFirst recommends including a Regional Variance for these specific instances. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that Requirement R1 is not applicable to both the Planning Coordinator and Transmission Planner—it is applicable to one or the other (see the Rationale box accompanying the Applicability section of the standard). In the case of Requirement R1, the language makes it clear that the responsibility is to the entity that developed the UVLS Program.** **The drafting team maintains that the flexibility of applicability to either the Planning Coordinator or Transmission Planner is necessary. Depending on agreements, memorandums of understanding, or tariffs, either entity may be responsible for designing and coordinating a UVLS Program.** 2. Requirements R6 and R7 - If Requirements R1, R3, R4 and R5 continue to apply to the Transmission Planner (based on our previous comment), ReliabilityFirst requests clarification on why the UVLS Entities are not required to provide data to the Transmission Planners (R6) and why the Transmission Planners are not required to update the UVLS database (R7). **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that a Planning Coordinator will always have data on all of the programs in its**

Organization	Yes or No	Question 2 Comment
		area regardless of whether or not it developed the program. A Transmission Planner may also maintain data, but there is no requirement to do so as it would be duplicative to what the Planning Coordinator already does.
Northeast Power Coordinating Council	No	We agree with the entities presented in Section A 4.1, but do not agree with the exclusion of Transmission Operator. While Section 4.1.3 includes Transmission Owner as an Undervoltage load shedding (UVLS) entities, not all TOs are responsible for the operation or control of UVLS equipment. Where a TO delegates such responsibilities to the TOP, or where the TO and TOP are separate organizations, the TO will not have such responsibilities. Suggest adding TOP to the Applicability Section. **RESPONSE: The drafting team thanks you for your comment. The drafting team asserts that the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still the accountable party. It is also noted that this is consistent with the applicability of PRC-006-1 Automatic UFLS. If the comment above is including manual load shedding for which the Transmission Operator is responsible, manual load shedding is not in the purview of PRC-010-1, as it is covered under EOP-003-2 and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations).**
Independent Electricity System Operator	No	We agree with the entities presented in Section A 4.1, but do not agree with the exclusion of Transmission Operator. While Section 4.1.3 includes Transmission Owner as an Undervoltage load shedding (UVLS) entities, not all TOs are responsible for the operation or control of UVLS equipment. Where a TO delegates such responsibilities to the TOP, or where the TO and TOP are separate organizations, the TO will not have such responsibilities. We suggest to add TOP to the Applicability Section. **RESPONSE: The drafting team thanks you for your comment. The drafting team asserts that the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still**

Organization	Yes or No	Question 2 Comment
		the accountable party. It is also noted that this is consistent with the applicability of PRC-006-1 Automatic UFLS. If the comment above is including manual load shedding for which the Transmission Operator is responsible, manual load shedding is not in the purview of PRC-010-1, as it is covered under EOP-003-2 and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations).
Texas Reliability Entity, Inc.	No	We agree with the PC/TP clarifications. As a different matter, we would like more clarity about the UVLS entities who may not be owners of BES assets. UVLS systems (as well as UFLS systems) are typically provided on distribution feeders which are not BES elements. Since the BES definition does not recognize distribution assets as part of the BES, additional certainty that applicability to UVLS entities is not contingent on UVLS devices being defined as BES assets or attached directly to BES assets. It is a common misconception that Standards requirements only apply to entities that own or operate BES assets. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that the UVLS devices are not contingent on being defined as or attached to BES assets. The drafting team asserts that this is clear in the defined term to which the standard is applicable—a UVLS Program encompasses devices that protect the impact to the BES. This is inherently independent of whether or not the devices are BES Elements.**
ACES Standards Collaborators	No	We support the concept of the delineation that the drafting team has described in the rationale box for the PC and TP. Furthermore, we support that requirements R7 and R8 are only applicable to the PC since they will develop the models for all of the TPs in their area. However, we think implementation of other requirements such as R1 should also identify only one function because it leads to confusion. The rationale box explains that the expectation is that only one of the two entities needs to develop the UVLS program. As the requirements are written, the practical compliance application does not support the concept. While we understand the rationale box supports that both entities do not have to perform the action, a

Organization	Yes or No	Question 2 Comment
		compliance auditor will ask PCs and TPs if they have UVLS Programs in their areas and expect them to show that they have completed studies and assessments to demonstrate its effectiveness per R1. The requirement applies to both and the PC or TP will not be given a "compliance pass" because they said the other has responsibility. The drafting team should work with NERC compliance staff to craft the requirements and RSAW to reflect the concept expressed in the applicability section of the compliance report. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that, in addition to the clarity provided in the Rationale box accompanying the Applicability section, the enforceable language of the requirements should make the applicability clear. As such, the drafting team notes the following:** **Requirement R1 makes it clear that the responsibility is to the entity that is developing a UVLS Program:** **"Each Planning Coordinator or Transmission Planner *that is developing* a UVLS Program shall . . ."** **Requirement R3 has been adjusted in response to this comment to make it clear that the responsibility is to the entity that has a UVLS Program:** **"Each Planning Coordinator or Transmission Planner shall perform a comprehensive assessment to evaluate the effectiveness of each of *its* UVLS Programs . . ."** **Requirement R4 has been adjusted in a similar fashion as Requirement R3:** **"Each Planning Coordinator or Transmission Planner shall . . . perform an assessment to evaluate whether *its* UVLS Program . . ."** **Requirement R5 is unchanged as it reflects language similar to that of Requirements R3 and R4 above:**

Organization	Yes or No	Question 2 Comment
		"Each Planning Coordinator or Transmission Planner that identifies deficiencies in *its* UVLS Program during an assessment performed in either Requirement R3 or R4 shall . . ."
SPP Standards Review Group	No	Whereas the Rationale Box does mention the responsibility of the Planning Coordinator or the Transmission Planner, whichever entity is basically responsible for the UVLS Program and clarification is provided to a certain extent in Section 4.1.3, the clarity that is needed isn't in Sections 4.1.1 and 4.1.2. Rather than simply listing each entity which makes it appear that both are responsible, it may be necessary to include language similar to that found in Section 4.1.3 'established by the Transmission Planner or Planning Coordinator' which would indicate an either/or responsibility. This would be helpful in indicating that the developer or owner of the program is the Applicable Entity, not both as it is currently written. **RESPONSE: The drafting team thanks you for your comment. The drafting team considered this suggestion. However, the team came to the conclusion that this would only move the same intention of the "or" from the requirements to the Applicability section, thus retaining the same approach without the benefit of increased clarity. Upon examination of the language in the requirements, the drafting team notes the following:** **Requirement R1 makes it clear that the responsibility is to the entity that is developing a UVLS Program:** **"Each Planning Coordinator or Transmission Planner *that is developing* a UVLS Program shall . . ."** **Requirement R3 has been adjusted in response to this comment to make it clear that the responsibility is to the entity that has a UVLS Program:** **"Each Planning Coordinator or Transmission Planner shall perform a comprehensive assessment to evaluate the effectiveness of each of *its* UVLS Programs . . ."** **Requirement R4 has been adjusted in a similar fashion as Requirement R3:**

Organization	Yes or No	Question 2 Comment
		"Each Planning Coordinator or Transmission Planner shall . . . perform an assessment to evaluate whether *its* UVLS Program . . ." Requirement R5 is unchanged as it reflects language similar to that of Requirements R3 and R4 above: "Each Planning Coordinator or Transmission Planner that identifies deficiencies in *its* UVLS Program during an assessment performed in either Requirement R3 or R4 shall . . ."
Northeast Utilities	No	RESPONSE: There is no apparent comment in reference to the negative support and therefore no response is provided.
MRO NERC Standards Review Forum	Yes	RESPONSE: The drafting team thanks you for your support.
Duke Energy	Yes	RESPONSE: The drafting team thanks you for your support.
ISO RTO Council Standards Review Committee	Yes	RESPONSE: The drafting team thanks you for your support.
Colorado Springs Utilities	Yes	RESPONSE: The drafting team thanks you for your support.
Arizona Public Service Company	Yes	RESPONSE: The drafting team thanks you for your support.
Florida Power & Light	Yes	RESPONSE: The drafting team thanks you for your support.
Virginia State Corporation Commission, member OC	Yes	RESPONSE: The drafting team thanks you for your support.
American Electric Power	Yes	RESPONSE: The drafting team thanks you for your support.
Xcel Energy Inc.	Yes	RESPONSE: The drafting team thanks you for your support.

Organization	Yes or No	Question 2 Comment
Hydro One	Yes	RESPONSE: The drafting team thanks you for your support.
Minnkota Power Cooperative	Yes	RESPONSE: The drafting team thanks you for your support.
Idaho Power Company	Yes	RESPONSE: The drafting team thanks you for your support.
American Transmission Company, LLC	Yes	RESPONSE: The drafting team thanks you for your support.
Oncor Electric Delivery LLC	Yes	RESPONSE: The drafting team thanks you for your support.
PJM Interconnection	Yes	RESPONSE: The drafting team thanks you for your support.
ISO New England	Yes	RESPONSE: The drafting team thanks you for your support.

3. **Requirements R1, R3, R4, and R5 have been revised (along with added supporting rationale and information in the Guidelines and Technical Basis) to clarify the expectations of what should be demonstrated at distinct points in time relative to UVLS Program effectiveness to support reliability. Do you support the current approach to these requirements? If no, please indicate your concerns in the comment section and provide specific suggested changes.**

Summary Consideration: The drafting team thanks all commenters for their time and attention. Based on the feedback received, the drafting team notes the following with respect to Requirements R1–R5:

The drafting team has changed word "demonstrate" to "evaluate" in Requirement R1 to further convey the flexibility for an entity to make the proper determinations with respect to program effectiveness based on system characteristics.

The requirement to implement the UVLS Program is contained in Requirement R2. However, the requirement has been adjusted to be more explicit, and it has also been adjusted to explicitly require UVLS entities to implement the CAP from Requirement R5. Requirement R2 now reads as follows: "Each UVLS entity shall adhere to the UVLS Program specifications and implementation schedule determined by its Planning Coordinator or Transmission Planner associated with UVLS Program development per Requirement R1 or with any Corrective Action Plans per Requirement R5."

The drafting team has removed the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3 since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.

For Requirement R5, it has been adjusted to be specific to the assessments performed in Requirements R3 and R4. As a point of clarification, the three-month time frame is only to develop the CAP and does not encompass the time UVLS entities have to implement the CAP. While the NERC Glossary definition of a "Corrective Action Plan" states that a CAP includes an associated timetable for implementation, Requirement R5 has added language to emphasize that there must be an implementation schedule (to which entities are required to adhere in Requirement R2). The resulting language of Requirement R5 is as follows: "Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment performed in either Requirement R3 or R4 shall develop a Corrective Action Plan to address the deficiencies and subsequently provide the Corrective Action Plan, including an implementation schedule, to UVLS entities within three calendar months of completing the assessment."

The drafting team has given every comment due consideration and has responded to each individually. Please see below for responses to specific concerns.

Organization	Yes or No	Question 3 Comment
ISO New England	No	In Requirement R3 the phrase “or operating conditions” is very vague. There are continuous and ongoing “material changes” to operating conditions. At a minimum, the dispatch scenarios will be different every day, week, month and year. Do these changes constitute material changes to the operating conditions? If so, then the effectiveness of each existing UVLS Program needs to be assessed very frequently. If no, then what constitutes “material changes to the operating conditions”? Suggest removing “or operating conditions”. A review of the UVLS program once every 60 months or as material changes are made to system topology is sufficient. **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase “or sooner if material changes are made to system topology or operating conditions” in Requirement R3, the drafting team has removed this phrase since a “material” change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.** In Requirement R5 it is unclear whether or not the identified deficiencies are the results of the evaluations made in R3 and R4. This needs to be clarified, or else there need to be triggering events clearly stated in R5. **RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows:**

Organization	Yes or No	Question 3 Comment
		"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall . . ." Further, R5 requires the development of a CAP in 3 months, but does not require the implementation of the CAP, and the time frame. Both need to be added. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with your concern that the implementation of the CAP needs to be explicitly required. As such, Requirement R2 has been adjusted as follows:** **"*Each UVLS entity shall adhere to the UVLS Program specifications and implementation schedule* determined by its Planning Coordinator or Transmission Planner *associated* with UVLS Program development per Requirement R1 or *with any Corrective Action Plans per Requirement R5.*"** **It is noted that the time frame to implement the CAP is as required by the Planning Coordinator or Transmission Planner in the development of the CAP. While the NERC Glossary definition of a "Corrective Action Plan" states that a CAP includes an associated timetable for implementation, the drafting team has added the following language to Requirement R5 to emphasize that there must be an implementation schedule:** **"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment . . . shall develop a Corrective Action Plan to address the deficiencies *and subsequently provide the Corrective Action Plan, including an implementation schedule*, to UVLS entities within three calendar months of completing the assessment.**
ACES Standards Collaborators	No	We are generally supportive of the approaches taken, but we do have some concerns with a few specific requirements. Requirement R1, Part 1.2 and Requirement R3, Part 3.2 of the standard need to be clarified to state that the UVLS program should be integrated with generator voltage-ride through capabilities for

Organization	Yes or No	Question 3 Comment
		generators that are expected to be in-service during the actuation of the UVLS relays. UVLS Programs may be installed in areas with limited generation capabilities, which result in limited reactive support. Thus, the tripping of one or more these generators in a load pocket may be ultimately what results in the need for the UVLS Program. If the area has a single generator that provides the voltage support and its loss is what ultimately triggers UVLS actuation, then why would the UVLS Program need to be coordinated with generator voltage ride-through capabilities? Please modify Parts 1.2 and 3.2 to recognize that if a unit contingency is ultimately what triggers the UVLS scheme that the UVLS Program does not need to be coordinated with the generator voltage-ride through capabilities for this standard. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that this is inherently captured in Requirements R1, part 1.2 and R3, part 3.2, which require that a Planning Coordinator or Transmission Planner show the coordination considerations in response to specific severe contingencies. These studies and analyses would conclude that a UVLS Program does not need to coordinate with an offline unit in this given scenario.**
Texas Reliability Entity, Inc.	No	Should there be an overarching requirement for the Planning Coordinator to develop and document general criteria for all UVLS programs in the Planning Coordinator's area, especially in the case where there may be region-specific requirements that must be met? It would then follow that program, specifications, and demonstrating of effectiveness developed under R1 and R2 must meet the general criteria. **RESPONSE: The drafting team thanks you for your comment and has considered this suggestion; however, the team believes that it is necessary to maintain flexibility for a program's specific considerations and characteristics since the need for and design of a UVLS Program is unique to each system preservation footprint.**

Organization	Yes or No	Question 3 Comment
		We have existing UVLS systems where multiple TOs and DPs in different TP areas own the UVLS relays. We are assuming in a case such as this that the PC would be responsible for the demonstration of effectiveness (R1) and the program specifications (R2), but it is not explicitly stated. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that, regardless of who will own the UVLS relays, Requirement R1 is applicable to the planning entity that develops the UVLS Program. This is reflected in the language as follows: "Each Planning Coordinator or Transmission Planner *that is developing* a UVLS Program shall . . ." The requirement is not meant to dictate which entity this will be—it only recognizes that it will be either a Planning Coordinator or a Transmission Planner. Either may be responsible for designing and coordinating the program based on agreements, memorandums of understanding, or tariffs.** **Requirement R2 follows similar logic. The applicable UVLS entities will receive and subsequently implement the specifications from the planning entity that provides them. In Requirements R3, R4, and R5, the language specifies that the assessment actions are to be completed by the entity that has a UVLS Program (e.g., "shall perform a comprehensive assessment to evaluate the effectiveness of each of *its* UVLS Programs"). This may be a Planning Coordinator or Transmission Planner depending on the individual circumstance.** In R4, the one-year time frame for analyzing the UVLS performance for an actual event is too long. We suggest following timelines similar to the NERC Events Analysis Process. **RESPONSE: The drafting team thanks you for your comment. The drafting team recognizes that not all analyses will warrant a one-year time frame to complete. As there will be varying scenarios, the drafting team notes that this is the maximum allowable time frame to complete a given performance assessment.**

Organization	Yes or No	Question 3 Comment
California ISO	No	As elaborated on in the next question (Question 4), we think the TOP should be an applicable entity, particularly for R4, R5, R6, R7 where the time horizon to address the requirement is specified to be the Operations Planning Horizon. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that, while the Transmission Operator may be involved with UVLS Program activities, the drafting team did not identify any required performance that was necessary to capture within PRC-010-1 since the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still the accountable party.** **To the extent that the Transmission Operator is required to have knowledge of system relays and protection systems, the drafting team notes that this requirement is covered under PRC-001. It is also noted that manual load shedding, for which the Transmission Operator is responsible, is not in the purview of PRC-010-1, as it is covered under EOP-003-2 and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations).** **Finally, it is noted that a time horizon is assigned based on the time necessary to mitigate a violation of the requirement and is not a determining factor as to whom the requirement is applicable. Requirements R4–R6 must be completed under a one-year time frame and, therefore, all mitigations of violations would have to occur under respective commensurate time frames. Per the NERC Time Horizons, this would fall under the "Operations Planning" time frame, which is "operating and resource plans from day-ahead and including seasonal," or within 12 months. Therefore, the Operations Planning time horizon assigned to Requirements R4–R6 indicates that the applicable planning entity has within 12 months to mitigate a violation of the requirement.**
Arizona Public Service Company	No	For a UVLS developed as a safety net, any event that would trigger the necessary voltage excursion to trigger the UVLS program would be very significant. The

Organization	Yes or No	Question 3 Comment
		analysis of the event, including evaluation of UVLS would likely take a minimum of a year. Has the drafting team considered the process involved in analyzing an event such as the Northeast Blackout and how the analysis of a safety net (had one been employed) would have impacted the overall analysis timeframe? **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that the time frame to analyze an event such as the Northeast Blackout would be significant. However, the analysis of a catastrophic event like this would go beyond just that for a UVLS Program, and therefore this requirement's time frame would not be applicable to the overall analysis of the event.** In addition, APS has concerns that any additional analysis needed to identify effectiveness improvements would likely take more than three months. APS would like clarification that the three month time period given only refers to the development of the Corrective Action Program (CAP) milestones, and not the development and actual completion of these milestones within that 3 month period. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that Requirement R5's language is specific to only the development of the CAP. In addition, the accompanying Rationale box and Guidelines and Technical Basis specify that the three-month time frame is only to develop the CAP and does not encompass the time UVLS entities have to implement the CAP.**
Xcel Energy Inc.	No	In R5, it is unclear which assessment is being referenced - is it the one performed in R3, in R4, or both? Please consider making the reference more specific. Also in R5, it is unclear how "within three calendar months of identification (of deficiencies)" can be measured? It appears to require the TP/PC to record the date the deficiencies were identified during the performance of assessment -- if this is indeed the intent, recording this milestone date is not captured in R3 or R4. Suggest the milestone date be changed to completion of assessment date.

Organization	Yes or No	Question 3 Comment
		We suggest the following changes in R5 to address both concerns: "R5. Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment [performed in either R3 or R4] shall develop a Corrective Action Plan (CAP) to address the deficiencies within three calendar months of [completing the assessment]." **RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows:** **Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall develop a Corrective Action Plan to address the deficiencies and subsequently provide the Corrective Action Plan, including an implementation schedule, to UVLS entities within three calendar months of *completing the assessment.*** **"Each UVLS entity shall *adhere to the UVLS Program specifications and implementation schedule* determined by its Planning Coordinator or Transmission**
PJM Interconnection	No	PJM supports the SRC's response to this question. We reiterate their comments as follows: R1 is missing specific wording and needs to specify the requirement to implement the UVLS program. R5 needs additional language in the requirement for the entity to not only develop but also to implement the CAP. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that the requirement to implement the UVLS Program is contained in Requirement R2. However, the requirement has been adjusted to require this explicitly, and it has also been adjusted to include an explicit requirement for UVLS entities to implement the CAP from Requirement 5. Requirement R2 now reads as follows:**

Organization	Yes or No	Question 3 Comment
		Planner *associated with UVLS Program development per Requirement R1 or with any Corrective Action Plans per Requirement R5.*" R3 & R5 should be clarified with language so that they only apply to "operating conditions that impact the performance of UVLS". **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.** **With respect to adding language to Requirement R5 so that a CAP is developed in application to program deficiencies that only impact the performance of the UVLS Program, the drafting team notes that the stated purpose of the assessments in Requirements R3 and R4 inherently relate to uncovering deficiencies that would only impact UVLS Program performance:** **Requirement R3: "that it resolves the undervoltage issues for which it was designed" and "is integrated through coordination"** **Requirement R4: "evaluate whether its UVLS Program resolved the undervoltage issues associated with the event."** R5 is unclear as to which "assessment" is referred to? The assessment per R3? For R4? Or for both?

Organization	Yes or No	Question 3 Comment
		RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows: **Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall develop a Corrective Action Plan . . ."**
Florida Power & Light	No	The rationale for R1 states that lack of coordination for UVLS is a key risk to the reliability of the BES. This premise is not supported by the August 14 2003 blackout or other events. UVLS was cited as a possible measure that could have mitigated the event had there been UVLS relays near the portions of the grid that experienced voltage collapse. Coordination problems are not demonstrated by the Blackout because the UVLS relays did not exist. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with your assessment of the August 14 Blackout Report conclusions and notes that the Rationale box for Requirement R1 only notes an agreement with the reliability purpose of the associated directive, which is to require an integrated and coordinated approach to all protection systems.** **The information provided in the accompanying FAQ document with respect to the basis of the revision of the UVLS standards document does reference the August 14 Blackout Report as an input, but it draws your same conclusion: "coordination of UVLS with other protection systems *could* have mitigated the effects *if* UVLS was used as a tool (*emphasis added*).** **In other words, in response to your concern, the drafting team notes that the requirement to coordinate UVLS Programs with other protection systems is not rooted in the premise that this was a contributing factor to the August 14 Blackout.** The requirement to "demonstrate coordination" is extremely poor practice in Reliability Standard as it is inherently subjective and misinterpreted by auditors. Low voltage problems due the severe multiple contingencies tend to be focused on a local area due to the impedance of the transmission system. The need for any

Organization	Yes or No	Question 3 Comment
		coordination depends on the area affected by the event and is best left up to the Transmission Planner. Generator low voltage ride through on existing generators is generally a function of the auxiliary bus design, the auxiliary bus loading conditions and the characteristic of equipment such as pump motors. Low voltage ride through is not a relay setting that can be looked up and is extremely difficult to determine without performing a load threatening staged test. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees and notes that the requirements as written do leave all coordination considerations up to the studies and analyses performed by the Planning Coordinator or Transmission Planner. The requirements are only requiring that these studies and analyses of coordination considerations be done. The drafting team notes that it has changed word "demonstrate" to "evaluate" in Requirement R1 to further convey the flexibility for an entity to make the proper determinations with respect to program effectiveness based on system characteristics.** NERC should be trying to encourage the installation of UFLS relays. Many UVLS relays are engineered and justified based on Category D Extreme Events for which there is no transmission performance requirement. When planning studies demonstrate a benefit to the application of UFLS relays, Transmission Planners have ample motivation to develop a reliable scheme not prone to undesired load shedding. Imposing requirements that are difficult to demonstrate to an auditor are an impediment to more widespread application of UVLS and may lead some Planners to remove UVLS from service if they perceive a compliance risk. **RESPONSE: The drafting team thanks you for your comment. The drafting team asserts that, if a Planning Coordinator or Transmission Planner determines that a UVLS Program is a necessary system protection measure, it needs to be properly coordinated, implemented, and assessed due to the inherent associated reliability risks. As such, there needs to be a level of performance required to properly protect system reliability. Of note, PRC-010-1 applies only to the proposed defined term UVLS Program, which limits the standard's applicability to only those undervoltage-**

Organization	Yes or No	Question 3 Comment
		based load shedding programs whose performance have an impact on system reliability.
Northeast Power Coordinating Council	No	We agree with R1, and R4, but do have the following concerns with Requirements R3 and R5. In Requirement R3 the phrase "or operating conditions" is very vague. There are continuous and ongoing "material changes" to operating conditions. At a minimum, the dispatch scenarios will be different every day, week, month and year. Do these changes constitute material changes to the operating conditions? If so, then the effectiveness of each existing UVLS Program needs to be assessed very frequently. If no, then what constitutes "material changes to the operating conditions"? Suggest removing "or operating conditions". A review of the UVLS program once every 60 months or as material changes are made to system topology is sufficient. **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.** In Requirement R5 it is unclear whether or not the identified deficiencies are the results of the evaluations made in R3 and R4. This needs to be clarified, or else there need to be triggering events clearly stated in R5. **RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows:**

Organization	Yes or No	Question 3 Comment
		"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall . . ." Further, R5 requires the development of a CAP in 3 months, but does not require the implementation of the CAP, and the time frame. Both need to be added. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with your concern that the implementation of the CAP needs to be explicitly required. As such, Requirement R2 has been adjusted as follows:** ***"Each UVLS entity shall adhere to the UVLS Program specifications and implementation schedule* determined by its Planning Coordinator or Transmission Planner *associated* with UVLS Program development per Requirement R1 or *with any Corrective Action Plans per Requirement R5."*** **It is noted that the time frame to implement the CAP is as required by the Planning Coordinator or Transmission Planner in the development of the CAP. While the NERC Glossary definition of a "Corrective Action Plan" includes an associated timetable for implementation as part of its defining elements, Requirement R5 has added the following language to emphasize that there must be an implementation schedule:** **"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment . . . shall develop a Corrective Action Plan to address the deficiencies *and subsequently provide the Corrective Action Plan, including an implementation schedule*, to UVLS entities within three calendar months of completing the assessment."**
Independent Electricity System Operator	No	We generally agree with R1, R2 and R4, but do have the following concerns with Requirements R3 and R5. R3: The phrase "or operating conditions" is very vague. There are definitely "material changes" to the operating conditions yearly, monthly, weekly and even daily. At a

Organization	Yes or No	Question 3 Comment
		minimum, the dispatch scenarios will be different every day, week, month and year. Do these changes constitute material changes to the operating conditions? If so, then the effectiveness of each existing UVLS Program needs to be assessed very frequently. If no, then what constitutes "material changes to the operating conditions"? We suggest to remove the phrase "or operating conditions". A review of the UVLS program once every 60 months or as material changes are made to system topology will suffice. **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.** R5: It is unclear whether or not the identified deficiencies are the results of the evaluations made in R3 and R4. This needs to be clarified, or else there need to be triggering events clearly stated in R5. **RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows:** **"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall . . ."** Further, R5 requires the development of a CAP in 3 months, but does not require the implementation of the CAP, and the time frame. Both need to be added.

Organization	Yes or No	Question 3 Comment
		RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with your concern that the implementation of the CAP needs to be explicitly required. As such, Requirement R2 has been adjusted as follows: **"*Each UVLS entity shall adhere to the UVLS Program specifications and implementation schedule* determined by its Planning Coordinator or Transmission Planner *associated* with UVLS Program development per Requirement R1 or *with any Corrective Action Plans per Requirement R5.*"** **It is noted that the time frame to implement the CAP is as required by the Planning Coordinator or Transmission Planner in the development of the CAP. While the NERC Glossary definition of a "Corrective Action Plan" includes an associated timetable for implementation as part of its defining elements, Requirement R5 has added the following language to emphasize that there must be an implementation schedule:** **"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment . . . shall develop a Corrective Action Plan to address the deficiencies *and subsequently provide the Corrective Action Plan, including an implementation schedule*, to UVLS entities within three calendar months of completing the assessment."**
ISO RTO Council Standards Review Committee	No	We see R1 is missing specific wording and needs to specify the requirement to implement the UVLS program. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that the requirement to implement the UVLS Program is contained in Requirement R2. However, the requirement has been adjusted to be more explicit, and it has also been adjusted to explicitly include a requirement for UVLS entities to implement the CAP from Requirement 5. Requirement R2 now reads as follows:** **"Each UVLS entity shall *adhere to the UVLS Program specifications and implementation schedule* determined by its Planning Coordinator or Transmission**

Organization	Yes or No	Question 3 Comment
		Planner *associated with UVLS Program development per Requirement R1 or with any Corrective Action Plans per Requirement R5*." R3 & R5 should be clarified with language so that they only apply to "operating conditions that impact the performance of UVLS". **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.** **With respect to adding language to Requirement R5 so that a CAP is developed in application to program deficiencies that only impact the performance of the UVLS Program, the drafting team notes that the stated purpose of the assessments in Requirements R3 and R4 inherently relate to uncovering deficiencies that would only impact UVLS Program performance:** **Requirement R3: "that it resolves the undervoltage issues for which it was designed" and "is integrated through coordination"** **Requirement R4: "evaluate whether its UVLS Program resolved the undervoltage issues associated with the event."**
Tacoma Power	No	Tacoma Power submits the following comments: Requirement R1, Part 1.2, and Requirement R3, Part 3.2, may be too vague. The Application Guidelines provides some clarity, but an example for each type of

Organization	Yes or No	Question 3 Comment
		system/program listed in Requirement R1, Part 1.2, and Requirement R3, Part 3.2, would be helpful. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that it has changed word "demonstrate" to "evaluate" in Requirement R1 to further convey the flexibility for an entity to make the proper determinations with respect to program effectiveness based on system characteristics. The drafting team has provided only the examples given in the Guidelines and Technical Basis to avoid being overly prescriptive.** In Requirement R3, it will be difficult to audit whether or not a Transmission Planner or Planning Coordinator conducted an assessment "sooner if material changes are made to system topology or operating conditions." How is the determination made that changes are "material"? Even the Application Guidelines acknowledges "that the term material change is not transportable on a continent wide basis." Furthermore, what is to keep a Transmission Planner or Planning Authority from waiting the whole 60 calendar months even "if material changes are made to system topology or operating conditions"? **RESPONSE: The drafting team thanks you for your comment. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program.**

Organization	Yes or No	Question 3 Comment
		In requirement R4, the words "that resulted in a voltage excursion" should be removed from R4. Many substations do not have capabilities to continuously record voltage at a fast enough sample rate to determine if UVLS should have operated. Maximum scan time by a SCADA system as allowed by BAL-005-0.2b is every 6 seconds, but the typical time delay of UVLS is 3 to 10 seconds. Thus, Planning Coordinators would not be able to prove an excursion did not occur. We agree with FAQ document that there should be a feedback mechanism from the TOP & DP to the TP or PC, but disagree as to the timeframe and content of that feedback. The TOP or DP should notify the PC and/or TP after an event (i.e. lines tripping out) occurs for which the UVLS program was designed to operate and then provide any available SCADA data or events. We strongly disagree with the concept that a TO or DP should be required to provide data in real-time to a PC or TP. Requiring that the TP or PC analyze real-time data to verify that no individual UVLS relays failed to operate would be a huge burden with no corresponding reliability gain. As outlined in the rationale for the UVLS program definition, one advantage of a UVLS program is that any individual relay may fail to operate, but that single failure is unlikely to affect the reliable performance of the program. The outcome of this requirement should be analysis of known or easily knowable events, and should not require exhaustive documentation to prove events did not occur. As an alternative, the following language would also be acceptable: "Each Planning Coordinator or Transmission Planner shall, within 12 calendar months of an event that resulted in operation of the UVLS Program, perform an assessment to evaluate whether the UVLS Program resolved the undervoltage issues associated with the event." Pursuant to the preceding paragraph, should the applicability be changed to include Transmission Operator, and should a requirement be added to require that Transmission Operators and Distribution Providers notify their Transmission Planner or Planning Coordinator of events that resulted in operation of the UVLS Program? **RESPONSE: The drafting team thanks you for your comment. The drafting team understands your concern with the noted language in the FAQ and notes that it was not the drafting team's intention to convey that a Transmission Owner or**

Organization	Yes or No	Question 3 Comment
		Distribution Provider should provide data to the Planning Coordinator or Transmission Planner, or that the Planning Coordinator or Transmission Planner should analyze the data, in "real-time." The drafting team has revised the wording as follows: **"The drafting team acknowledges that the Planning Coordinator or Transmission Planner may not have the ability to know when voltage excursions are occurring since they are not operating entities. However, a process for the Transmission Operator, Transmission Owner, or Distribution Provider to notify the Transmission Planner or Planning Coordinator of such voltage excursion events is consistent with standard utility practice."** In the Guidance document there are references to both capitalized UVLS Program and to lower case UVLS programs. Please update them all to upper case. **RESPONSE: The drafting team thanks you for your comment. These references have been addressed accordingly.**
Colorado Springs Utilities	Yes	Is WECC looking to organize and coordinate UVLS Programs within the overall WECC region? **RESPONSE: The drafting team thanks you for your support. In relation to your comment, the drafting team notes that it cannot speak for WECC.**
Duke Energy	Yes	R1: No comment **RESPONSE: The drafting team thanks you for your support.** R3: Duke Energy requests clarification from the SDT on the intent of the "material change" aspect of the proposed requirement. Is it the SDT's intent to have the individual entity set its own criteria as to what constitutes a "material change"? **RESPONSE: The drafting team thanks you for your support. In relation to your comment, yes, the intention is that the Planning Coordinator or Transmission**

Organization	Yes or No	Question 3 Comment
		Planner will determine if there are material changes to system topology or operating conditions that affect the performance of a UVLS Program. In consideration of this comment and others relating to the phrase "or sooner if material changes are made to system topology or operating conditions" in Requirement R3, the drafting team has removed this phrase since a "material" change cannot be qualified on a continent-wide basis and could therefore be interpreted differently by auditors and functional entities. Instead, the drafting team has provided guidance in the respective Rationale box and Guidelines and Technical Basis section to explain the original intent of the language, which is the recognition that a comprehensive assessment may be performed sooner than the end of the 60-month cycle if a Planning Coordinator or Transmission Planner determines there is a change to the system that would affect the performance of the UVLS Program. R4: No comment R5: No comment **RESPONSE: The drafting team thanks you for your support.**
SPP Standards Review Group	Yes	While we generally support R1, R3, R4 and R5 we recommend replacing the term 'demonstrate' in Requirement R1 with 'document'. We don't understand to whom we would demonstrate the effectiveness of our UVLS Program. **RESPONSE: The drafting team thanks you for your support. In relation to your comment, the drafting team notes that it has changed word "demonstrate" to "evaluate" in Requirement R1 to further convey the flexibility for an entity to make the proper determinations with respect to program effectiveness based on system characteristics and that the requirement is only requiring the studies and analyses that are a part of this evaluation.**

Organization	Yes or No	Question 3 Comment
		We also suggest adding a couple of commas in R3 to clarify the timing of future assessments. We propose the following: '...at least once every 60-calendar months, or sooner, if material changes are made...' Also, in R5 we suggest tying the assessment to Requirement R4 by making the following change '...identifies deficiencies in its UVLS Program during an assessment, as specified in Requirement R4, shall develop a Corrective Action Plan...' **RESPONSE: The drafting team thanks you for your comment. The drafting agrees with the concern and has adjusted Requirement R5 as follows:** **"Each Planning Coordinator or Transmission Planner that identifies deficiencies in its UVLS Program during an assessment *performed in either Requirement R3 or R4* shall . . ."**
MRO NERC Standards Review Forum	Yes	**RESPONSE: The drafting team thanks you for your support.**
Virginia State Corporation Commission, member OC	Yes	**RESPONSE: The drafting team thanks you for your support.**
American Electric Power	Yes	**RESPONSE: The drafting team thanks you for your support.**
Hydro One	Yes	**RESPONSE: The drafting team thanks you for your support.**
Minnkota Power Cooperative	Yes	**RESPONSE: The drafting team thanks you for your support.**
Idaho Power Company	Yes	**RESPONSE: The drafting team thanks you for your support.**
American Transmission Company, LLC	Yes	**RESPONSE: The drafting team thanks you for your support.**
Oncor Electric Delivery LLC	Yes	**RESPONSE: The drafting team thanks you for your support.**

Organization	Yes or No	Question 3 Comment
Northeast Utilities	Yes	RESPONSE: The drafting team thanks you for your support.

4. **Do you have comments on other issues not addressed by the previous questions (e.g., the remaining requirements or the coordination that is occurring with other projects)? If so, please indicate your concerns in the comment section.**

Summary Consideration: The drafting team thanks all commenters for their time and attention. Based on the feedback received, the drafting team notes the following:

With respect to including the word "automatic" to the standard title and Purpose statement to qualify that the standard is applicable to automatic UVLS and not manual UVLS, the drafting team maintains that it is evident that the standard does not include manual load shedding since the standard is clearly applicable to the term UVLS Program, and the definition of the term UVLS Program states that it is an "automatic load shedding program." In addition, in response to the requested clarification to the Purpose statement to qualify that the standard is applicable to UVLS systems that mitigate impacts to the BES, the drafting team notes that it has added the phrase "impacting the Bulk Electric System" to the definition of the term UVLS Program, to which the standard is applicable, to provide the requested clarification.

For the comments that went back to Requirement R1 to note that it should be required for the Planning Coordinator or Transmission Planner to provide the UVLS Program specifications and implementation schedule to UVLS entities, the drafting team agrees that this should be explicitly stated and has adjusted Requirement R1 as follows: "Each Planning Coordinator or Transmission Planner that is developing a UVLS Program shall evaluate its effectiveness and subsequently provide the UVLS Program's specifications and implementation schedule to the UVLS entities . . ."

In response to the comments that expressed concern over the coordination with PRC-004 and/or how Requirements R4 and R5 may be redundant with PRC-004, the drafting team notes that PRC-010-1 applies specifically to UVLS Program design, development, and assessment and not to the associated equipment as addressed by PRC-004. PRC-004-3, which is currently under development and nearing completion, does NOT include UVLS as part of its applicable facilities. As such, the UVLS drafting team is making the recommendation for PRC-004-3 to be revised (once complete) to include UVLS Programs that trip one or more BES Elements to address Misoperations of this equipment. The drafting team notes that this approach is consistent with the treatment of UFLS Misoperations: PRC-006-1 Automatic UFLS does not address UFLS equipment Misoperations to the necessary extent of PRC-004, and PRC-004-3 has subsequently included UFLS that trips one or more BES Elements under its applicable facilities.

Requirement R6 requires UVLS entities to provide data to its Planning Coordinator according to the format and schedule specified by the Planning Coordinator to support maintenance of a UVLS Program database. The drafting team does not agree that this requirement should be removed on the basis that it is covered by MOD-032-1, because MOD-032-1 only establishes overarching modeling data requirements with respect to consistency in format and reporting procedures, whereas PRC-010-1 Requirement R6 addresses the need to provide this information for the purpose of studies for use in event analyses for UVLS Programs specifically (i.e., MOD-032-1 does not specifically require UVLS Program data for this purpose).

In addition, in response to the comment that Requirements R6 and R7 are not needed because the Planning Coordinator would already have the data since it initially supplied the program specifications to the UVLS entities per Requirement R1, the drafting team notes that the information the UVLS entity would provide to the Planning Coordinator per Requirement R6 is what is actually installed per the design specifications.

With respect to the comments that indicated that Requirement R7, which requires Planning Coordinators to update their UVLS Program database annually, should only be updated per identifications from the assessments performed in Requirements R3 and R4, the drafting team notes that since the data being updated in Requirement R7 is not static in nature, the annual time frame allows the Planning Coordinator to periodically capture cumulative effects of small changes that would not warrant updates by themselves.

Lastly, in response to comments, the drafting team has adjusted Requirement R8 to include "other functional entities with a reliability need" as recipients of the database upon request, and has specified in the accompanying Rationale box that an example of these functional entities are Transmission Operators that develop System Operating Limits and Reliability Coordinators that develop Interconnection Reliability Operating Limits.

The drafting team has given every comment due consideration and has responded to each individually. Please see below for responses to specific concerns.

Organization	Yes or No	Question 4 Comment
Colorado Springs Utilities	No	RESPONSE: The drafting team thanks you for your support.
Florida Power & Light	No	RESPONSE: The drafting team thanks you for your support.
Xcel Energy Inc.	No	RESPONSE: The drafting team thanks you for your support.
Idaho Power Company	No	RESPONSE: The drafting team thanks you for your support.
Northeast Utilities	No	RESPONSE: The drafting team thanks you for your support.
ACES Standards Collaborators	Yes	(1) There appears to be inconsistency in the stated coordination between this project and the Project 2010-05.2 Special Protection Systems. Page 6 of proposed PRC-010-1 states that the definition of SPS as written in Project 2010-05.2 Special Protection

Organization	Yes or No	Question 4 Comment
		Systems (SPS) will be adjusted to include only centrally-controlled UVLS. However, the recently posted definition of SPS did not reflect this. In fact, the definition explicitly excluded UVLS in bullet a) of the definition. We do support the concept that centrally-controlled UVLS schemes should be covered under the SPS standards and believe further coordination is required between the two drafting teams. **RESPONSE: The drafting team thanks you for your support. As a point of clarification, the revised definition of the term SPS that was posted during the PRC-010-1 informal comment period was a suggested revision from an earlier report drafted by the NERC SAMS and SPCS. This was posted for comment by Project 2010-05.2 SPS to solicit feedback from industry as a starting point for the SPS drafting team. The drafting team is now making the change to include centrally controlled UVLS in their revision of the definition. Both projects are being coordinated for their first formal comment periods, during which the coordinating change to the definition of SPS will be reflected.** (2) Requirement R8 appears to meet Paragraph 81 criteria and should be removed because it is administrative in nature. More specifically, it meets criterion B4 - Reporting because it requires reporting to third parties and does not have a discernible impact on reliability. Consider if the requirement did not exist. Is it likely that the Planning Coordinator would not share their information with another Planning Coordinator? The answer is that the PC would share because Parts 1.2 and 3.2 already require that PCs to coordinate with other UVLS Programs, which creates an implied requirement to share. Furthermore, PCs are already used to sharing information and data such as planning models through regional model building processes so sharing additional pertinent information is not a significant challenge. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that Requirement R1, part 1.2 and Requirement R3, part 3.2 require you to use the data to coordinate, whereas Requirement R8 requires the data to be shared.** **It is also noted that Requirement R8 is consistent with Requirement R7 of FERC-approved PRC-006-1 Automatic UFLS. The drafting team does recognize that PRC-**

Organization	Yes or No	Question 4 Comment
		006-1 Requirement R7 is a candidate for Phase 2 of the Paragraph 81 project, but notes that the Independent Expert Review Panel recommendations disagreed with this, noting that "there should be a clear expectation for Planning Coordinators to share data necessary to determine their UFLS program parameters." The drafting team agrees that if Requirement R7 from PRC-006-1 is officially retired under Paragraph 81 criteria, the analogous requirement in PRC-010-1 would be reconsidered at that time. (3) We are concerned that requirements R4 and R5 potentially overlap with PRC-004-2.1a and may be inconsistent. The definition of Protection System and maintenance tables in PRC-005-2 make clear that distributed UVLS systems are considered Protection Systems and, thus, subject to PRC-004-2.1a. PRC-004-2.1a requires that the TO and DP evaluate their Protection Systems Misoperations including UVLS relays Misoperations and to develop Corrective Action Plans. This would require the evaluation of all UVLS operations to ensure they are either correct or a Misoperation. R4 and R5 of PRC-010-1 would appear to require a similar analysis and development of Corrective Action Plans with specific time lines. PRC-004-2.1a does not contain specific time lines so the inclusion of specific times in PRC-010-1 R4 and R5 could cause confusion and be viewed to be in conflict. We recommend removal of PRC-010-1 R4 and R5 since they are already covered under PRC-004-2.1a. Redundant requirements also meet Paragraph 81 criteria. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that PRC-010-1 applies specifically to UVLS Program design, development, and assessment and not to the associated equipment. The objective of Requirement R4 is for the Planning Coordinator or Transmission Planner to evaluate the program design to ensure the program operated as intended during a qualifying event. While an equipment Misoperation may inherently be identified as part of this process and subsequently included as part of the CAP developed in Requirement 5, Requirement R4 does not require an evaluation of equipment Misoperations to the extent required by PRC-004, and it is not applicable to Transmission Owners and**

Organization	Yes or No	Question 4 Comment
		Distribution Providers. In other words, the two standards may identify the same issue, but they are each required for different purposes. **In addition, PRC-004-3, which is currently under development and nearing completion and will retire PRC-004-2.1a, does not include UVLS as part of its applicable facilities because UVLS Misoperations are currently addressed by PRC-022-1. Since the implementation of PRC-010-1 retires PRC-022-1, the UVLS drafting team has recommended that PRC-004-3 be adjusted to include UVLS Programs that trip one or more BES Elements as part of its applicable facilities. This is consistent with the treatment of UFLS in PRC-004-3.**
American Transmission Company, LLC	Yes	ATC asks that the SDT please consider the following recommendations: Modify the PRC-010-1 standard title to qualify that the standard applies to "Automatic Undervoltage Load Shedding" similar to the title of the 'Automatic Underfrequency Load Shedding Standard (PRC-006-1). This change would readily indicate that the standard does not include manual undervoltage load shedding, which is presently covered by EOP-003-2 (Loading Shedding Plans) standard and will continue to be covered by the future revision of standard (EOP-003-3) when the automatic UVLS program requirements are removed. **RESPONSE: The drafting team thanks you for your comment. The drafting team maintains that it is evident that the standard does not include manual load shedding since the standard is clearly applicable to the term UVLS Program, and the definition of the term UVLS Program states that it is an "automatic load shedding program."** Modify the Purpose to qualify that the standard - (1) applies to automatic UVLS Programs, (2) does not apply to the situation of when an automatic voltage load shedding scheme is developed and implemented by the Transmission Operator for Operations Planning Time Horizon, and (3) to limit the applicability to mitigating the risk of BES Adverse Reliability Impacts due to undervoltage conditions. Consider changing the wording of the Purpose as follows:

Organization	Yes or No	Question 4 Comment
		"To establish an integrated and coordinated approach to the design, evaluation, and reliable operation of automatic Undervoltage Load Shedding (UVLS) Programs that are used to meet the NERC Transmission Planning performance requirements and mitigate the risk of BES Adverse Reliability Impacts due to undervoltage conditions". **RESPONSE: The drafting team thanks you for your comment. With respect to item (1), the drafting team notes that the phrase "automatic UVLS Program" would be redundant since the definition of the term UVLS Program, to which the standard is applicable, states that a UVLS Program is an "automatic load shedding program." In relation to item (2), the drafting team maintains that the qualification that the standard does not apply to schemes developed by the Transmission Operator is not necessary on the basis that the nature of a scheme developed by a Transmission Operator would not meet the attributes of the defined term to which the standard is applicable. In consideration of item (3), the drafting team has added the phrase "impacting the Bulk Electric System" to the definition of UVLS Program, to which the standard is applicable, to provide the requested clarification.**
ISO RTO Council Standards Review Committee	Yes	Is R6 needed at all if R1 already requires the data to be provided? This requirement can be duplicative from an implementation standpoint and instead can be covered by adding a requirement to maintain the database under R1 or R2. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the information provided to the UVLS entity in Requirement R1 are the design specifications initially developed by the Planning Coordinator or Transmission Planner. The information the UVLS entity would provide to the Planning Coordinator in Requirement R6 is what is actually installed after the design specifications are passed from the Planning Coordinator or Transmission Planner to the UVLS entity.** Under R7, updates should only be required contingent upon other changes required e.g. CAP, R3 topology, etc. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that since the data being updated in Requirement R7 is not static in nature, the**

Organization	Yes or No	Question 4 Comment
		annual time frame allows the Planning Coordinator to periodically capture cumulative effects of small changes that would not warrant updates by themselves. 4.1.3 - a missing reference to "TOP" needs to be added. **RESPONSE: The drafting team thanks you for your comment. The drafting team maintains that there is no identified performance requirements applicable to the Transmission Operator because the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still the accountable party. It is also noted that this is consistent with the applicability of PRC-006-1 Automatic UFLS. If the comment above is taking into account manual load shedding for which the Transmission Operator is responsible, it is noted that manual load shedding is not in the purview of PRC-010-1, as it is covered under EOP-003-2 and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations).**
Virginia State Corporation Commission, member OC	Yes	It is unclear who is included in the term "UVLS entity" in R2. This should be a defined term. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that item 4.1.3 of the standard's Applicability section identifies "UVLS entities" as "Distribution Providers and Transmission Owners responsible for the ownership, operation, or control of UVLS equipment as required by the UVLS Program established by the Transmission Planner or Planning Coordinator."**
MRO NERC Standards Review Forum	Yes	Please consider these suggestions. Modify the standard title to qualify that the standard applies to "Automatic Undervoltage Load Shedding" similar to the title of the 'Automatic Underfrequency Load Shedding Standard (PRC-006-1). This change would readily indicate that the standard does not include manual undervoltage load shedding, which is presently covered by EOP-003-2 (Loading Shedding Plans) standard and will continue to be

Organization	Yes or No	Question 4 Comment
		covered by the future revision of standard EOP-011-1 when the automatic UVLS program requirements are removed. **RESPONSE: The drafting team thanks you for your comment. The drafting team maintains that it is evident that the standard does not include manual load shedding since the standard is clearly applicable to the term UVLS Program, and the definition of the term UVLS Program states that it is an "automatic load shedding program."** Modify the Purpose to qualify that the standard applies to automatic UVLS Programs used to mitigate the risk of BES Adverse Reliability Impacts due to undervoltage conditions with wording like, ". . . reliable operation of automatic Undervoltage Load Shedding (UVLS) Programs that are used to mitigate the risk of BES Adverse Reliability Impacts due to undervoltage conditions". **RESPONSE: The drafting team thanks you for your comment. The drafting team has added the phrase "impacting the Bulk Electric System" to the definition of the term UVLS Program, to which the standard is applicable, to provide the requested clarification.** Move specific wording from the guidelines which aren't mandatory into the NERC standard itself to clarify that the standard by itself does not require a mandatory UVLS program, rather if an entity has UVLS systems, (i.e. groups of relays set to open for to maintain BES system voltages and not individual UVLS relays protecting individual transmission lines) that meet the NERC standard, those systems are in-scope. **RESPONSE: The drafting team thanks you for your comment. The drafting team maintains that the standard's requirements clearly do not require a mandatory UVLS Program and therefore the location of the emphasis in the Guidelines and Technical Basis is sufficient.**
Duke Energy	Yes	R7: Duke Energy suggests that the SDT consider re-wording R7 to the following: "Each Planning Coordinator that has a UVLS program in its area shall update a database containing data necessary to model its UVLS program for use in event

Organization	Yes or No	Question 4 Comment
		analyses and assessments of the UVLS program as needed, or at least once every calendar year." The addition of the phrase "as needed" provides for a Planning Coordinator to update a UVLS program when necessary to ensure for the most current model availability. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the annual time frame allows the Planning Coordinator to periodically capture cumulative effects of small changes that would not warrant updates by themselves. The phrase "at least" accounts for the fact that the Planning Coordinator may update it sooner if determined necessary.**
ReliabiltiyFirst	Yes	ReliabilityFirst provides the following comments for considerations: Requirement R1, Part 1.2 - ReliabilityFirst believes the term "coordination" by itself is ambiguous and needs further clarification to avoid confusion. ReliabilityFirst recommends the following for consideration: "The UVLS Program is [validated] through coordination [of Protection Systems] with generator voltage..." **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the wording used, "integrated through coordination", is to be consistent with the FERC order. The drafting team notes that the evaluation required by Requirement R1 as a whole requires the UVLS Program to be validated.** Requirement R2 - Requirement R2 requires the UVLS entity to adhere to the Planning Coordinator and Transmission Planner implementation schedule though there is no corresponding requirement for the PC or TP to provide such a schedule. If the Planning Coordinator or Transmission Planner never provides such a schedule, there is a potential for the UVLS entity to be non-compliant. Once again ReliabilityFirst recommends the following similar structure of the NERC PRC-006-1 Standard and include the addition of a new requirement in this standard, such as

Organization	Yes or No	Question 4 Comment
		"Each Planning Coordinator or Transmission Planner shall notify the UVLS Entities of the UVLS Program specifications and implementation schedule." **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees and has adjusted Requirement R1 as follows:** **"Each Planning Coordinator or Transmission Planner that is developing a UVLS Program shall evaluate its effectiveness *and subsequently provide the UVLS Program's specifications and implementation schedule to the UVLS entities . . ."*** Requirement R3 - ReliabilityFirst recommends removing the term "comprehensive" since it adds little or no value to the requirement. The term is ambiguous and the meaning may have potential differing interpretations by the parties involved. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the word "comprehensive" is to distinguish between the annual TPL standard assessment and an in-depth relay coordination study that may examine beyond criteria events. The drafting team notes that this intention is supported by in the respective Rationale box and Guidelines and Technical Basis.** Requirement R3, Part 3.2 - ReliabilityFirst believes the term "coordination" by itself is ambiguous and needs further clarification to avoid confusion. ReliabilityFirst recommends the following for consideration "The UVLS Program is [validated] through [protected device] coordination with generator voltage..." **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the wording used, "integrated through coordination", is to be consistent with the FERC order. The drafting team notes that the evaluation required by Requirement R3 as a whole requires the UVLS Program to be validated.**
ISO New England	Yes	Requirement R6 could be removed since in the new MOD-032 standard the Planning Coordinator is required to specify data and models needed for assessment of system

Organization	Yes or No	Question 4 Comment
		reliability and affected entities are required to provide that data to the Planning Coordinator. The MOD-032 requirements can address UVLS data needs. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that MOD-032-1 only establishes overarching modeling data requirements with respect to consistency in format and reporting procedures, whereas PRC-010-1 Requirement R6 addresses the need to supply data for the purpose of studies for use in event analyses for UVLS Programs specifically (i.e., MOD-032 does not specifically require UVLS Program data for this purpose).** **In addition, the drafting team notes that the current UFLS and SPS-related standards also have an analogous requirement.**
Hydro One	Yes	Requirement R6 could be removed since in the new MOD-032 the PC is required to specify all data and models needed for assessment of reliability of the system and the affected entities are required to provide those data and models to the PC. These will cover the UVLS data as well. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that MOD-032-1 only establishes overarching modeling data requirements with respect to consistency in format and reporting procedures, whereas PRC-010-1 Requirement R6 addresses the need to supply data for the purpose of studies for use in event analyses for UVLS Programs specifically (i.e., MOD-032 does not specifically require UVLS Program data for this purpose).** **In addition, the drafting team notes that the current UFLS and SPS-related standards also have an analogous requirement.**
Northeast Power Coordinating Council	Yes	Requirement R6 could be removed. In the new MOD-032 the PC is required to specify all data and models needed for assessment of reliability of the system, and the affected entities are required to provide those data and models to the PC. This will cover the UVLS data as well.

Organization	Yes or No	Question 4 Comment
		RESPONSE: The drafting team thanks you for your comment. The drafting team notes that MOD-032-1 only establishes overarching modeling data requirements with respect to consistency in format and reporting procedures, whereas PRC-010-1 Requirement R6 addresses the need to supply data for the purpose of studies for use in event analyses for UVLS Programs specifically (i.e., MOD-032 does not specifically require UVLS Program data for this purpose). **In addition, the drafting team notes that the current UFLS and SPS-related standards also have an analogous requirement.** Also, given that Requirement R2 requires the UVLS entity to adhere to the UVLS Program specifications and implementation schedule determined by its Planning Coordinator or Transmission Planner, without exception, wouldn't the PC and TP already have the information on their respective data base? **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the information provided to the UVLS entity in Requirement R1 are the design specifications initially developed by the Planning Coordinator or Transmission Planner. The information the UVLS entity would provide to the Planning Coordinator in Requirement R6 is what is actually installed after the design specifications are passed from the Planning Coordinator or Transmission Planner to the UVLS entity.** **In addition, the drafting team notes that the current FERC-approved UFLS standard, PRC-006-1, has an analogous requirement.** Regarding Requirement R7, for the same reason as stated above for Requirement R6, Requirement R7 is not required and should be removed. Even if this requirement is retained, the database update to support modeling needs only to be performed as the UVLS program is revised following the identification in R3, R4 and the implementation of the CAP in Requirement R5, not annually. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that, as per above, the information the UVLS entity would provide to the Planning Coordinator in Requirement R6 is what is actually installed after the design**

Organization	Yes or No	Question 4 Comment
		specifications are passed from the Planning Coordinator or Transmission Planner to the UVLS entity. The Planning Coordinator should have this information specifically in its database and not just its initial design specifications. **With respect to the indication that the database update only needs to be performed as the UVLS Program is revised following identifications in Requirement R3 or R4, the drafting team notes that the data being updated in Requirement R7 is not static in nature—the annual time frame allows the Planning Coordinator to periodically capture cumulative effects of small changes that would not warrant updates by themselves.** **In addition, the drafting team notes that the current FERC-approved UFLS standard, PRC-006-1, has an analogous requirement.** For Requirement R8, the UVLS program data base may be required by other entities that need to consider UVLS operations in a PC's area, such as the TOPs that developed SOLs and RCs that develop IROLs. The impacts of UVLS operations and their settings need to be considered and modeled in the SOL/IROL development. Please expand this requirement to include "and those entities that have a reliability need for the database." **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees and has adjusted Requirement R8 to include "other functional entities with a reliability need" as recipients of the database upon request, and has specified in the accompanying Rationale box that examples of these functional entities are Transmission Operators that develop System Operating Limits and Reliability Coordinators that develop Interconnection Reliability Operating Limits.**
Tacoma Power	Yes	Tacoma Power submits the following comments: Requirement R2 would require that UVLS entities "adhere to the UVLS Program specifications and implementation schedule determined by its Planning Coordinator or Transmission Planner." Where is the Planning Coordinator or Transmission Planner

Organization	Yes or No	Question 4 Comment
		required to communicate the UVLS Program specifications and implementation schedule to the UVLS entity(ies)? Is it implied by Requirement R1? **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the requirement to provide the specifications and schedule to UVLS entities is implied, but the drafting team has adjusted Requirement R1 to explicitly state this as follows:** **"Each Planning Coordinator or Transmission Planner that is developing a UVLS Program shall evaluate its effectiveness *and subsequently provide the UVLS Program's specifications and implementation schedule to the UVLS entities . . .*"** In Measure M2, consider changing "...the feeders armed..." to "...the equipment armed..." Some entities may interpret 'feeders' as radial distribution circuits operated under 15kV. A UVLS Program should not be limited to application on circuits less than 15kV. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees with the suggestion and has adjusted Measure M2 as follows:** **"Acceptable evidence must include date-stamped documentation on the completion of actions and may include, but is not limited to, identifying *the equipment* armed with UVLS relays . . . "** Requirement R6 would require that a UVLS entity "provide data to its Planning Coordinator according to the format and schedule specified by the Planning Coordinator..." Where is the Planning Coordinator required to communicate the format and schedule to the UVLS entity(ies)? Is it implied by Requirement R7? **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that Requirement R7 addresses the likely situation in which a Planning Coordinator would request the information according to a certain format and schedule; however, requesting the information in this manner is not required. The drafting team also**

Organization	Yes or No	Question 4 Comment
		notes that this is consistent with Requirement R8 of FERC-approved PRC-006-1 Automatic UFLS. Please consider graduated VSLs for Requirement R3 based upon how late the assessment was conducted. **RESPONSE: The drafting team thanks you for your comment. Upon consideration, the drafting team maintains that the five-year time frame to complete the assessment in the requirement already provides the maximum allowable time.** In the Severe VSL for Requirement R4, change "15 months" to "15 calendar months." **RESPONSE: The drafting team thanks you for your comment and for catching this oversight. The drafting team has added the word "calendar" accordingly.** In the Lower VSL for Requirement R6, how can the applicable entity provide "data in accordance with Requirement R6" but not "according to the specified format"? Is verbiage like the following intended? "The applicable entity provided data according to the schedule specified by its Planning Coordinator, but the data was not provided in the specified format." **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that all the VSLs are constructed in a similar way, in which the intent is to convey that a given requirement was met in all respects ("in accordance with R…") with the exception of the verbiage that follows the "but".** In the Severe VSL for Requirement R8, change "60 calendar days" to "45 calendar days" to be consistent with the High VSL. **RESPONSE: The drafting team thanks you for your comment and for catching this oversight. The drafting team has changed "60 calendar days" to "45 calendar days" accordingly.**
American Electric Power	Yes	The drafting team stated in the Mapping Document their intention for PRC-004-3 to address UVLS Program Misoperations. We believe that it is clearer and more concise

Organization	Yes or No	Question 4 Comment
		that the requirement for UVLS Program Misoperations be contained together with other UVLS related requirements within PRC-010-1 rather than be split separately between PRC-004-3 and PRC-010-1. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that PRC-010-1 applies specifically to UVLS Program design, development, and assessment and not to the associated equipment as addressed by PRC-004-3. In addition, the drafting team notes that this approach is consistent with the treatment of UFLS Misoperations; PRC-006-1 Automatic UFLS does not address UFLS equipment Misoperations to the necessary extent of PRC-004, and PRC-004-3 has subsequently included UFLS under its applicable facilities.** In addition, referencing our comments in question 1, the proposed requirements in PRC-004-3 only include BES Misoperations while the proposed PRC-010-1 standard makes no distinction between BES and non-BES devices. We believe that this discrepancy needs to be addressed and clarified. **RESPONSE: The drafting team thanks you for your comment. The drafting team has added the phrase "impacting the Bulk Electric System" to the definition of the term UVLS Program, to which the standard is applicable, for further clarification. However, the drafting team also notes that, regardless of where the UVLS devices are located and where they trip, if a UVLS program is there to protect the BES, the program falls under the definition/is applicable to the standard.**
Independent Electricity System Operator	Yes	We offer the following comments on Requirements R6, R7 and R8 for consideration: R6: We question the need for R6. Given that R2 requires the UVLS entity to adhere to the UVLS Program specifications and implementation schedule determined by its Planning Coordinator or Transmission Planner, without exception, wouldn't the PC and TP already have the information on their respective data base? We suggest to remove R6. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the information provided to the UVLS entity in Requirement R1 are the design**

Organization	Yes or No	Question 4 Comment
		specifications initially developed by the Planning Coordinator or Transmission Planner. The information the UVLS entity would provide to the Planning Coordinator in Requirement R6 is what is actually installed after the design specifications are passed from the Planning Coordinator or Transmission Planner to the UVLS entity. R7: For the same reason stated in the comment on R6 above, R7 is not required and should be removed. Even if this requirement is retained, the database update to support modeling needs only to be performed as the UVLS program is revised following the identification in R3, R4 and the implementation of the CAP in R5, not annually. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that, as per above, the information the UVLS entity would provide to the Planning Coordinator in Requirement R6 is what is actually installed after the design specifications are passed from the Planning Coordinator or Transmission Planner to the UVLS entity. The Planning Coordinator should have this information specifically in its database and not just its initial design specifications.** **With respect to the indication that the database update needs to be performed only as the UVLS Program is revised following identifications in Requirement R3 or R4, the drafting team notes that the data being updated in Requirement R7 is not static in nature—the annual time frame allows the Planning Coordinator to periodically capture cumulative effects of small changes that would not warrant updates by themselves.** **In addition, the drafting team notes that the current FERC-approved UFLS standard, PRC-006-1, has an analogous requirement.** R8: The UVLS program data base may be required by other entities that need to consider UVLS operations in a PC's area, such as the TOPs that developed SOLs and RCs that develop IROLs. The impacts of UVLS operations and their settings need to be considered and modeled in the SOL/ITOL development. Please expand this

Organization	Yes or No	Question 4 Comment
		requirement to include "and those entities that have a reliability need for the database." **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees and has adjusted Requirement R8 to include "other functional entities with a reliability need" as recipients of the database upon request, and has specified in the accompanying Rationale box that examples of these functional entities are Transmission Operators that develop System Operating Limits and Reliability Coordinators that develop Interconnection Reliability Operating Limits.**
California ISO	Yes	We think the TOP should be an applicable entity, particularly for R4, R5, R6, R7 where the time horizon to address the requirement is specified to be the Operations Planning Horizon. R4 through R8 state the Time Horizon as the Operations Planning Horizon, yet do not include the TOP, but instead are applicable to the PC or TP. The TOP should be an applicable entity, particularly for R4, R5, R6, R7. The supporting rational also references coordination with the TOP entities. The Planning Horizon is typically considered to start with year 1, and the Operations Planning Horizon within the first 12 calendar months. **RESPONSE: The drafting team thanks you for your comment. The drafting notes that, while the Transmission Operator may be involved with UVLS Program activities, the drafting team did not identify any required performance that was necessary to capture within PRC-010-1 since the Transmission Operator does not have the resources necessary to implement program specifications. If responsibilities are delegated to the Transmission Operator by the Transmission Owner, the Transmission Owner is still the accountable party.** **To the extent that the Transmission Operator is required to have knowledge of system relays and protection systems, the drafting team notes that this requirement is covered under PRC-001. It is also noted that manual load shedding, for which the Transmission Operator is responsible, is not in the purview of PRC-010-1, as it is**

Organization	Yes or No	Question 4 Comment
		covered under EOP-003-2 and will subsequently be covered by proposed EOP-011-1 (see Project 2009-03 Emergency Operations). **Finally, it is noted that a time horizon is assigned based on the time necessary to mitigate a violation of the requirement and is not a determining factor as to whom the requirement is applicable. Requirements R4–R6 must be completed under a one-year time frame and, therefore, all mitigations of violations would have to occur under respective commensurate time frames. Per the NERC Time Horizons, this would fall under the "Operations Planning" time frame, which is "operating and resource plans from day-ahead and including seasonal," or within 12 months. Therefore, the Operations Planning time horizon assigned to Requirements R4–R6 indicates that the applicable planning entity has within 12 months to mitigate a violation of the requirement.**
Texas Reliability Entity, Inc.	Yes	We would suggest rewording the Purpose section as follows: "To establish design, documentation and assessment requirements for automatic Undervoltage Load Shedding (UVLS) programs which support affect the reliability of the Bulk Electric System and are used to meet performance requirements in the Transmission Planning Standards" **RESPONSE: The drafting team thanks you for your comment. The drafting team notes the definition of the term UVLS Program, to which the standard is applicable, is not specific to performance required per TPL Reliability Standards because a UVLS Program may be developed and implemented to serve as a safety net system protection measure against unforeseen extreme Contingencies. However, the phrase "impacting the Bulk Electric System" has been added to the definition to further clarify the applicable UVLS systems.**
SPP Standards Review Group	Yes	What is the driver for the 6-year data retention associated with Requirement R4? We don't see the need for this being any different than the other requirements and was hoping the SDT would share their thinking with us.

Organization	Yes or No	Question 4 Comment
		RESPONSE: The drafting team thanks you for your comment. The drafting team agrees and has adjusted the Evidence Retention section accordingly to make the retention time frame for Requirement R4 equal to that of the other requirements. Here are typo/grammatical suggestions: Hyphenate 60-calendar months and any other similar time period term. This applies to the standard as well as the FAQ document. **RESPONSE: The drafting team thanks you for your comment. The drafting team notes that the use of the hyphen is dependent on whether the phrase is being used as a qualifier. For instance, the hyphen would be used in the phrase "60-calendar-month time period" but not when simply referring to "60 calendar months." The drafting team notes that it has reviewed all references and made a few corrections to remain consistent with this approach.** Spell out Corrective Action Plan (CAP) in the Rationale Box for Requirement R5. **RESPONSE: The drafting team thanks you for your comment and agrees—the term has been spelled out in the Rationale box accordingly.** In the Severe VSL for R4, '15 months' should be '15-calendar months'. **RESPONSE: The drafting team thanks you for your comment and for catching this oversight. The drafting team has added the word "calendar" accordingly.** Something appears to have been left out of the Lower VSL for R6. We suggest inserting 'provided' between 'not' and 'according'. **RESPONSE: The drafting team thanks you for your comment and agrees—the word "provided" has been inserted accordingly.** Hyphenate 'ride-through' in the last line of the 1st paragraph under the Introduction to the Guidelines and Technical Basis Section of the standard. **RESPONSE: The drafting team thanks you for your comment and agrees—the hyphen has been added accordingly.**

Organization	Yes or No	Question 4 Comment
		Hyphenate 'continent-wide' at the end of the 2nd line in the 3rd paragraph under the Guidelines for Requirement R3 Section of the Guidelines and Technical Basis Section of the standard. **RESPONSE: The drafting team thanks you for your comment and agrees—the hyphen has been added accordingly.** Replace 'match' with 'duplicate' in the last line of the 1st paragraph under the Guidelines for Requirements R6-R8 Section of the Guidelines and Technical Basis Section of the standard. Also, in the next to last line of the 5th paragraph in the same section, replace 'provide' with 'provided'. **RESPONSE: The drafting team thanks you for your comment and agrees—the word "match" has been replaced with "duplicate" and the word "provide" had been replaced with "provided."** In the FAQ Document: Insert 'team' between 'drafting' and 'agreed' in the 4th line of the paragraph under FAQ in Response to Comments. The final report for the August 14, 2003 Blackout is referred to in several locations in the document as the August 14 Blackout Report. Use the complete, correct title of the report. Hyphenate 'sub-requirements' in the 1st line of the 2nd paragraph under Requirements R1, R3 and R4 seem to all require demonstrations of program effectiveness - how are they different question under the Clarifications on Requirements R1, R3, R4 and R5. Capitalize 'Real-time' in the 2nd paragraph under the Requirement R4 would require the Transmission Planner and Planning Coordinator to review all voltage excursions - isn't this unduly burdensome question under Clarifications on Requirements R1, R3, R4 and R5.

Organization	Yes or No	Question 4 Comment
		RESPONSE: The drafting team thanks you for your comment and agrees—the word "team" has been added and the reference to the August 14 Blackout report has been changed to the complete title. Of note, the word "sub requirements" has been changed to "parts" and the word "real-time" has been removed as result of a revision to the text.
PJM Interconnection	Yes	While PJM does support the standard, we included the following comment during the previous posting in October, 2013: The PJM Regional Transmission Expansion Plan designs the PJM RTO system to avoid the need for UVLS and therefore PJM does not have a UVLS program. The standard needs to address the situation when the TP/PC does not have a UVLS program but the UVLS entity has their own UVLS schemes. The concepts contained within PRC-010-0 R1 should be incorporated within the new standard to ensure that individual UVLS entity schemes that are developed outside or in lieu of a TP/PC program are coordinated with their TP/PC. PJM would appreciate the drafting team's response to our concern. **RESPONSE: The drafting team thanks you for your comment. The drafting team has considered this and maintains that addressing this situation is not necessary on the basis that the nature of a scheme developed by a UVLS entity and not by a Planning Coordinator or Transmission Planner would not meet the attributes of the defined term UVLS Program to which the standard is applicable.**
Arizona Public Service Company	Yes	**RESPONSE: The drafting team thanks you for your support.**
Minnkota Power Cooperative	Yes	**RESPONSE: The drafting team thanks you for your support.**
Oncor Electric Delivery LLC	Yes	**RESPONSE: The drafting team thanks you for your support.**

5. Do you support the proposed PRC-010-1? If no, please indicate what specifically would put you in favor of the standard.

Summary Consideration: Due to the varying nature of these comments, please see below for responses to specific concerns.

Organization	Yes or No	Question 5 Comment
Arizona Public Service Company	No	APS would like to see more detail as to what is required to demonstrate effectiveness and coordination as it relates to UVLS safety nets developed to protect from unforeseen multiple Contingencies. **RESPONSE: The drafting team thanks you for your comment. That drafting team notes that what you consider to coordinate with and subsequently how you evaluate effectiveness and coordination is dependent on the specific high-impact, low-probability contingencies you model as it relates to a safety net. As such, the team has changed the term "demonstrate" to "evaluate" to further convey the flexibility in making these individual determinations on how to model the system.** APS would also like to see consideration of the time lines suggested by the drafting team to analyze UVLS effectiveness and to develop corrective action plans after a voltage excursion again specifically as it relates to safety net UVLS program that would not initiate except during an extreme event. **RESPONSE: The drafting team thanks you for your comment. The drafting team agrees that the time frame to analyze an extreme event would be significant. However, the analysis of a catastrophic event would go beyond just that for a UVLS Program, and therefore this requirement's time frame would not be applicable to the overall analysis of the event.**
American Electric Power	No	Further clarification is needed before AEP can determine whether it can support the proposed standard.

Organization	Yes or No	Question 5 Comment
		RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.
Idaho Power Company	No	I would support the proposed standard once I am assured the definition of UVLS Program provides adequate clarity to understand which schemes apply to the standard. **RESPONSE: The drafting team thanks you for your comment. Please see the drafting team's response to your comment under Question 1 accordingly.**
Hydro One	No	More clarity is needed for deciding which UVLS schemes are "UVLS Program". Please see the answer to Q1 above regarding the "distributed" attribute and deciding when there could be adverse reliability impact outside contained area for multiple (e.g., five or six) independent UVLS schemes in one part of the system. One suggestion is to remove the "distributed" attribute (and even the term "Program") and instead make the requirements of this standard applicable to those UVLS schemes that individually or collectively are needed for compliance with the performance requirements of TPL-001-4. This would be consistent with what is proposed for SPS definition (and Type). **RESPONSE: The drafting team thanks you for your comment. Please see the drafting team's response to your comment under Question 1 accordingly. The drafting team also notes that the definition is not specific to performance required per TPL Reliability Standards because a UVLS Program may be developed and implemented to serve as a safety net system protection measure against unforeseen extreme Contingencies.** Note that Page 18 has reference to "(TPL category C Contingency)" which needs to be updated to the categories in TPL-001-4. **RESPONSE: The drafting team thanks you for your comment and agrees; of note, the drafting team has revised this language slightly and, as a result, this reference has been removed.**

Organization	Yes or No	Question 5 Comment
Northeast Power Coordinating Council	No	More clarity is needed for deciding which UVLS schemes are "UVLS Program". Please see the response to Q1 above regarding the "distributed" attribute and deciding when there could be adverse reliability impact outside contained area for multiple (e.g., five or six) independent UVLS schemes in one part of the system. One suggestion is to remove the "distributed" attribute (and even the term "Program") and instead make the requirements of this standard applicable to those UVLS schemes that individually or collectively are needed for compliance with the performance requirements of TPL-001-4. This would be consistent with what is proposed for SPS definition (and Type). **RESPONSE: The drafting team thanks you for your comment. Please see the drafting team's response to your comment under Question 1 accordingly. The drafting team also notes that the definition is not specific to performance required per TPL Reliability Standards because a UVLS Program may be developed and implemented to serve as a safety net system protection measure against unforeseen extreme Contingencies.** Note that Page 18 makes reference to "(TPL category C Contingency)" which needs to be updated to the categories in TPL-001-4. **RESPONSE: The drafting team thanks you for your comment and agrees; of note, the drafting team has revised this language slightly and, as a result, this reference has been removed.**
Northeast Utilities	No	More clarity is needed in deciding which UVLS schemes are "UVLS Program". Please see the answer to Q1 above regarding the "distributed" attribute and deciding when there could be adverse reliability impact outside contained area for multiple (e.g., five or six) independent UVLS schemes in one part of the system. One suggestion is to remove the "distributed" attribute and instead make the requirements of this standard applicable to those UVLS schemes that individually or collectively are needed to mitigate Adverse Reliability Impacts within and outside of the local contained area. (Refer to last paragraph of page 18 of the draft standard).

Organization	Yes or No	Question 5 Comment
		RESPONSE: The drafting team thanks you for your comment. Please see the drafting team's response to your comment under Question 1 accordingly. Note that Page 18 has reference to "(TPL category C Contingency)" which needs to be updated to the categories in TPL-001-4. **RESPONSE: The drafting team thanks you for your comment and agrees; of note, the drafting team has revised this language slightly and, as a result, this reference has been removed.** Applicability: There are numerous instances where the standard often refers to "either the Planning Coordinator or Transmission Planner" is responsible for a requirement (Requirements R1, R3, R4 and R5). To streamline the process and make the standard clearer as to who is responsible for what requirement, there should be an additional requirement in the standard (most probably the first requirement) that should direct the Planning Coordinator and Transmission Planner to come to an agreement as to who should be responsible for which of these requirements, similarly to Requirement R7 of TPL-001-4. **RESPONSE: The drafting team thanks you for your comment. Please see the drafting team's summary response and individual responses to this concern under Question 2 accordingly.** It is not apparent from the standard whether the standard applies to only the BES or both BES and non-BES parts of the system. The applicability section also refers to Distribution Providers, which suggests that the standard also applies to the non-BES portions of the system. The portions of the power system that the standard applies to should be clearly defined. **RESPONSE: The drafting team thanks you for your comment. The drafting team has added the phrase "impacting the Bulk Electric System" to the definition of the term UVLS Program, to which the standard is applicable, for further clarification. However, the drafting team also notes that, regardless of where the UVLS devices**

Organization	Yes or No	Question 5 Comment
		are located and where they trip, if a UVLS program is there to protect the BES, the program falls under the definition/is applicable to the standard.
California ISO	No	Not as currently written. However, if comments are addressed sufficiently, we could support the PRC-010-1 UVLS standard. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
Texas Reliability Entity, Inc.	No	Please reference comments and suggestions above. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
Tacoma Power	No	Please see the included comments. Tacoma Power has submitted specific comments above. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
ReliabiltiyFirst	No	ReliabilityFirst believes the comments submitted via the preceding questions need to be addressed before the standard is ready for approval. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
ISO New England	No	The definition of UVLS program needs to be improved so that it eliminates local programs from consideration.

Organization	Yes or No	Question 5 Comment
		RESONSE: The drafting team thanks you for your comment. The drafting team has added the phrase "impacting the Bulk Electric System" to the definition of the term UVLS Program, to which the standard is applicable, for further clarification. Note that Page 18 has a reference to "TPL category C Contingency" that needs to be updated to be consistent with categories in TPL-001-4. **RESPONSE: The drafting team thanks you for your comment and agrees; of note, the drafting team has revised this language slightly and this reference has been removed.**
ISO RTO Council Standards Review Committee	No	The individual entities signed onto these SRC joint consensus comments are each NERC members and registered in the registered ballot body. This response does not represent any commitment of how each member will vote. However, if each of these comments are addressed sufficiently, we can support PRC-010-1. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
MRO NERC Standards Review Forum	No	The proposed standard is very good. However, making changes to the standard that address the comments made above in an acceptable manner would be needed to put us in favor of the planned revision to the existing standards. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
Independent Electricity System Operator	No	To put us in favor of the standard, the comments/concerns expressed under Q3 and Q4, above, will need to be address. And where changes are not made to address these concerns, the rationale for not making changes should be provided. There are no specific questions on the Measures, Retention requirements, VRFs and VSLs so we have elected not to review them at this time to provide comments. Further, since we

Organization	Yes or No	Question 5 Comment
		do not agree with a number of requirements, commenting on the compliance elements including VRFs and VSLs is perhaps premature at this time. We will provide comment when the revised draft standard is posted for formal commenting. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
ACES Standards Collaborators	No	We support the concept of the standard but believe there are still a few outstanding issues described in our comments to other questions that are required before we can support the standard. Thanks for the opportunity to comment. **RESPONSE: The drafting team thanks you for your comments. Please see the drafting team's responses to your specific concerns under each Question respectively.**
Virginia State Corporation Commission, member OC	Yes	Although I believe certain wording changes could improve the standard, I generally support it. **RESPONSE: The drafting team thanks you for your support and looks forward to your feedback in response to improvements made to the standard during the next posting.**
Duke Energy	Yes	Duke Energy's support for the proposed PRC-010-1 is contingent upon the absolute inclusion of Centrally-controlled undervoltage-based load shedding in the definition of Special Protection System (Project 2010-05.2 Protection Systems). **RESPONSE: The drafting team thanks you for your support and notes that the revised definition of SPS to include centrally controlled undervoltage-based load shedding (by excluding PRC-010-1's defined term "UVLS Program") will be posted concurrently with PRC-010-1's next posting.**

Organization	Yes or No	Question 5 Comment
Xcel Energy Inc.	Yes	Good improvements and clarifications in the standard, and most importantly in the defined term "UVLS Program" by making a clear distinction with respect to SPS. **RESPONSE: The drafting team thanks you for your support.**
SPP Standards Review Group	Yes	In general we tend to support the proposed standard but would like to see the SDT respond to our comments/suggestions above. We are much appreciative of the consolidation of the four legacy standards into the new proposed standard. **RESPONSE: The drafting team thanks you for your comments and support. Please see the drafting team's responses to your specific concerns under each Question respectively.**
American Transmission Company, LLC	Yes	The proposed standard is very good, however, addressing the comments made above are recommended for ATC to be in favor of the planned revision to the existing standards. **RESPONSE: The drafting team thanks you for your comments and support. Please see the drafting team's responses to your specific concerns under each Question respectively.**
Colorado Springs Utilities	Yes	**RESPONSE: The drafting team thanks you for your support.**
Florida Power & Light	Yes	**RESPONSE: The drafting team thanks you for your support.**
Minnkota Power Cooperative	Yes	**RESPONSE: The drafting team thanks you for your support.**
Oncor Electric Delivery LLC	Yes	**RESPONSE: The drafting team thanks you for your support.**
PJM Interconnection	Yes	**RESPONSE: The drafting team thanks you for your support.**

END OF REPORT