

Consideration of Comments on Initial Ballot — Project 2007-01 — Underfrequency Load Shedding — Non-binding poll for VRF and VSLs

Date of Non-binding Poll: July 8-17, 2010

Summary Consideration: Many of the comments received indicated that until the SDT addressed the issues with the proposed standard support could not be offered for the proposed VRFs and VSLs. The SDT has made conforming changes to the proposed standards based on comments received during the posting and ballot of the standards that address many of the concerns. In addition, the SDT has addressed many of the suggested revisions to the VSLs proposed by commenters.

Many comments received in this poll indicated concern with the requirement to reach concurrence with other Planning Coordinators. The SDT understands the concern with requiring entities to reach concurrence. The SDT redrafted Requirement R5 and Requirement R13 to address this concern. The SDT's proposal eliminates the need to reach concurrence and replaces it with clear required actions that demonstrate that the Planning Coordinators coordinated should an island cross Planning Coordinator areas.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herbert Schrayshuen at 609-452-8060 or at Herb.Schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

Voter	Entity	Segment	Vote	Comment
Horace Stephen Williamson	Southern Company Services, Inc.	1	Negative	<p>1. R5 and R13 require that both or all the PC's reach concurrence on the assessment of the UFLS performance in an island. One entity might have larger margin requirements or a different methodology compared to another entity. These differences might not be reconcilable. A standard should not require that one PC has to agree with another PC. 2.</p> <p>Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern, though with a slightly different approach than the commenter's suggestion. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments. There may need to be some give and take among Coordinators with recognition that no one methodology or margin criterion is right to the exclusion of all others.</p> <p>R11 needs to have a MW size threshold for requiring the assessment of an UFLS event. As written, this requirement could require an assessment of an event where a breaker opened on a radial 115 kV line which had an 8 MW generator and 15 MW of load on the feeder.</p>
Richard J. Mandes	Alabama Power Company	3	Negative	
Anthony L Wilson	Georgia Power Company	3	Negative	
Gwen S Frazier	Gulf Power Company	3	Negative	
Don Horsley	Mississippi Power	3	Negative	

¹ The appeals process is in the Reliability Standards Development Procedure: http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf.

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				<p>Such a small event has no consequence to the reliability of the BES. A MW threshold of 500 MW would be appropriate.</p> <p>Response: PRC-009, a FERC approved standard, does not have an event threshold, and PRC-006 is absorbing PRC-009. The existing standard PRC-009, which this standard is intended to replace, currently requires that an assessment be performed for all events regardless of size. The SDT cannot remove a requirement from an existing standard without a technical justification that explains how this will make the requirement the same or better than what exists today.</p> <p>3. Miscellaneous improvements required to wording of R5, M5, and several VSL's.</p> <p>Response: The SDT provided a detailed response to the suggested improvements in the Consideration of Comments report for the formal comment period conducted in June-July, 2010.</p>
Response:				
Jason Shaver	American Transmission Company, LLC	1	Negative	Although Draft 3 contains many significant improvements, there are still too many important issues that are not adequately addressed.
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Mel Jensen	APS	5	Negative	Based on the negative vote on Project 2007-01 Underfrequency Load Shedding, the proposed VRFs and VSLs are rejected until the concerns with the proposed standard are addressed.
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Robert D Smith	Arizona Public Service Co.	1	Negative	Based on WECC's 7/15/10 Position Paper for the ballot of Project 2007-01 - UFLS. "In addition to the ballot of PRC-006-1, a non-binding poll of the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) is being conducted. Because of the recommended NO vote, members of the Underfrequency Load Shedding ballot pool are encouraged to reject the proposed VRFs and VSLs until such time that the concerns with the proposed standard are addressed".
Thomas R. Glock	Arizona Public Service Co.	3	Negative	
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Gordon Rawlings	BC Transmission Corporation	1	Negative	BC Hydro will not support the VRF and VSL document until such time as BC Hydro can support the UFLS standard Project 2007-01

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Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
John C. Collins	Platte River Power Authority	1	Negative	Because of the recommended NO vote on the standard, it would not make sense to approve the proposed VRFs and VSLs until such time the requirements of the standard are clarified.
Terry L Baker	Platte River Power Authority	3	Negative	
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Greg Lange	Public Utility District No. 2 of Grant County	3	Negative	Can't vote yes on the VRF and VSL until the standard is at a point where I can vote yes for it.
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Marjorie S. Parsons	Tennessee Valley Authority	6	Negative	Comments associated with the negative vote are contained in the Project 2007-01 comment form submitted by TVA
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
John Bussman	Associated Electric Cooperative, Inc.	1	Negative	Comments provided in comment form
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				
Russell A Noble	Cowlitz County PUD	3	Negative	Cowlitz cannot vote affirmative until it can also vote affirmative on the Standard as a whole.
Rick Syring	Cowlitz County PUD	4	Negative	
Bob Essex	Cowlitz County PUD	5	Negative	
Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.				

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Joseph O'Brien	Northern Indiana Public Service Co.	6	Negative	<p>EOP-003 It appears that there is, and always was, confusion with the use of “or” in EOP-003. For example in R5 the TOP or the BA shall implement a plan in steps. What if the TOP does this and the BA does not; is there a violation of the standard? This is not clear to me especially with BA/LBA JROs now in play. This could end up with “finger pointing” between the TOP and BA at audit time.</p> <p>In R4 it now states that voltage rate/level and power flow need to be considered when designing an automatic load shedding scheme. We have UFLS only and this appears to be a new requirement for us which may be a concern. Was that the intent? What does insufficient generation mean? Because the TOP or the BA shall shed customer load at this point according to R1. Does this mean when you’re stuck at 59.98 Hz you should shed load, after all remedial steps?</p> <p>PRC-006 There are 22 pages of material to review and vote on; this is a bit overwhelming. Why not just work on the requirements first and leave the measurements for a later draft. It’s too much.</p> <p>Applicability 4.3 is already covered in 4.2 There are Planning Coordinators within Planning Coordinators which makes it unclear who is responsible for all this compliance. It’s not clear at all how a PC is to determine where islands are likely to occur.</p>
<p>Response: There is another NERC project tasked with making comprehensive revisions to EOP-003. The intent of the supplemental SAR was to focus solely on removing conflicts and redundancies related to underfrequency load shedding in EOP-003-1.</p> <p>The drafting team did not make any modifications to EOP-003, Requirement R4. This is an existing requirement, not something new.</p> <p>The SDT added this additional distinction for the purposes stated in Requirement R10. The SDT has further clarified R10 to include the “automatic switching of capacitor banks, Transmission Lines, and reactors in order to control over-voltage as a result of under frequency load shedding” and believes this is a function which would be performed by Transmission Owners.</p> <p>The standard drafting team confirms that the Planning Coordinator is the appropriate entity to design UFLS and conduct the other UFLS related activities based on the definition of the Planning Coordinator in the Functional Model Version 5.</p> <p>A Planning Coordinator must identify at least one island to be used as the basis for the R4 UFLS design assessment. However, this does not mean that islands must be identified from a Planning Coordinator’s R1 criteria. As a minimum, the region or interconnection in which a Planning Coordinator’s area is located must be identified as an island per R2.3.</p>				
Robert Martinko	FirstEnergy Energy Delivery	1	Negative	<p>FirstEnergy appreciates the hard work of the drafting team, but unfortunately we must cast a Negative vote. Since we do not agree with the standard requirements and have cast a negative vote for the standard, we therefore do not agree with the VSL for the requirements as written.</p>
Kevin Querry	FirstEnergy Solutions	3	Negative	

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<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Douglas Hohlbaugh	Ohio Edison Company	4	Negative	<p>FirstEnergy appreciates the hard work of the drafting team, but unfortunately we must cast a Negative vote for the VRF for Requirement R1. Although we agree that Requirement 1 is important because it establishes a sound PSMP, a HIGH VRF assignment is not appropriate and it should be changed to LOWER. By definition, a requirement with a LOWER VRF is administrative in nature, and documentation of a program is administrative. Assigning a LOWER VRF to R1 is more logical since R4, which is the requirement to implement the PSMP, is assigned a MEDIUM VRF because, if violated, it could directly affect the electrical state or the capability of the bulk electric system.</p>
<p>Response: Requirement R1’s VRF assignment is a Medium (not a High). The SDT thinks that this requirement is beyond administrative. It is important to the design of UFLS to develop and document criteria to select portions of the Bulk Electric System (BES), including interconnected portions of the BES in adjacent Planning Coordinator areas and Regional Entity areas that may form islands.</p>				
Kenneth Dresner	FirstEnergy Solutions	5	Negative	<p>FirstEnergy appreciates the hard work of the drafting team, but unfortunately we must cast a Negative vote. Since we do not agree with the standard requirements and have cast a negative vote for the standard, we therefore do not agree with the VSL for the requirements as written.</p>
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Mark S Travaglianti	FirstEnergy Solutions	6	Negative	<p>FirstEnergy appreciates the hard work of the drafting team, but unfortunately we must cast a Negative vote for the standard as written. Although we agree that the Planning Coordinator is the appropriate functional entity to develop and implement a UFLS program, we are concerned with the fact that UFLS entities may not know the specifics of their responsibilities until long after this standard is approved. The SDT should consider adjusting the language of the standard to require more transparency and coordination with the UFLS entities during the PC's development of the UFLS program.</p> <p>Also, per the implementation plan, the PC will be given one year to develop its UFLS program. However, the timeframe for the UFLS entity is based on the schedule imposed by the PC. The implementation plan should allow the UFLS entity at least one year (maybe more per capital budget cycles) from the time the PC identifies the UFLS entity in their UFLS program. The UFLS entity will need sufficient lead time in those instances that require purchase of new UFLS equipment that will require long term budget planning for implementation. The UFLS entities are identified in the UFLS program established by the PC. However, it is not clear where the PC is explicitly required to notify and coordinate with the UFLS entity. In Requirement R3 it is implied that the PC will notify and coordinate with the UFLS entity per the phrase “including a schedule for implementation by UFLS entities within</p>

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				<p>its footprint". This requirement needs to be more explicit that the PC will notify the UFLS entity, and the measure for R3 needs to require proof that the PC has done this.</p> <p>Response: The SDT agrees that UFLS Entities should have opportunity to provide input to the Planning Coordinator on what will be required of them. The SDT added a requirement to the proposed standard, Requirement R14, to ensure that the Planning Coordinators collect and respond to comments submitted by UFLS entities on the UFLS program, including a schedule for implementation and UFLS design assessment.</p> <p>We are concerned about the coordination between this UFLS SDT and the GV SDT. It will be difficult to approve and begin implementing the PRC-006-1 standard while the PRC-024-1 standard is still under development and scheduled for approval and implementation at a much later date. For these requirements to be adequately coordinated, the two standards need to be developed, balloted and implemented at the same time. Alternatively, consider adding the following statement in the PRC-006-1 Implementation Plan: "The Effective Date and implementation of this PRC-006-1 standard requires coordination with standard PRC-024-1. Excluding requirement R1, the Effective Date of PRC-006 shall be the later of 1) the completion of the Implementation Plan for PRC-006 or 2) the completion of the Effective Date of the PRC-024-1 standard upon completion of its Implementation Plan."</p> <p>Response: Per the implementation schedule, any requirements that necessitate the use of generator tripping data do not come into effect until after PRC-024 is approved.</p>
<p>Response: Please see in-line responses.</p>				
James A Ziebarth	Y-W Electric Association, Inc.	4	Negative	<p>From question 3 on the comment form: Regarding the VSLs for R8, the UFLS entities cannot be punished for failing to meet a schedule if the schedule is not mutually agreed upon between the Planning Coordinator and the UFLS entities to ensure that the UFLS entities are capable of meeting such a schedule. At the very least, there must be some protection for the UFLS entities provided that requires the Planning Coordinator(s) to give the UFLS entities long-term notice of the deadlines that they will need to meet. The lack of any scheduling restrictions for the Planning Coordinators in the standard as written has a strong potential to cause enormous burdens on small UFLS entities that simply do not possess the resources to deal with such data reporting requirements without sufficient advance notice. Additionally, the UFLS entities cannot be penalized for failing to submit data in a format over which they have no control or input. The Planning Coordinator should be required to consult with the UFLS entities and decide upon a mutually agreeable data format in order to ensure that the UFLS entities are capable of providing the required data in the required format.</p>

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				With no language in the standard limiting or clarifying what data can be required of the UFLS entities by the Planning Coordinator, this provision at least should be made to protect small UFLS entities with highly limited resources for dealing with such data reporting requirements.
Response: The SDT added a requirement to the proposed standard, Requirement R14, to ensure that the Planning Coordinators collect and respond to comments submitted by UFLS entities on the UFLS program, including a schedule for implementation and UFLS design assessment.				
Michael Gammon	Kansas City Power & Light Co.	1	Negative	It is unclear from the Standard that not forming islands in UFLS design is acceptable. Recommend the SDT consider including language to clarify that is not mandatory that system islands be formed in every UFLS design configuration.
Charles Locke	Kansas City Power & Light Co.	3	Negative	
Scott Heidtbrink	Kansas City Power & Light Co.	5	Negative	
Thomas Saitta	Kansas City Power & Light Co.	6	Negative	
Response: The intent of Requirement R2, Part 2.3 is to attempt to preserve the present regional coordination of UFLS plans and designs. To this end, Requirement R2, Part 2.3 requires Regional Entity footprints to be identified as islands. These islands are to be used in UFLS design assessments and the Planning Coordinators within each Regional Entity footprint must work with each other on the design assessments for those islands (R5). The SDT believes that this goes as far as practical to address the need to coordinate UFLS plans within a region. There are no requirements to identify Planning Coordinator footprints as islands, but all of a Coordinator’s area will be included in one island or another.				
Jason L Marshall	Midwest ISO, Inc.	2	Negative	No VRF for UFLS should be High. UFLS is only actuated because several other things did not work properly. For a VRF to be High, there must be a direct causal link to bad things happening (i.e. cascading, instability, blackout) as result of the requirement. If UFLS has to be actuated, we have already reached the bad things happening stage and this represents a last ditch effort to save the system because several immediate steps did not prevent the bad things from happening.
Response: These requirements are assigned a High VRF because the reliability objective of these requirements is to perform an assessment of the UFLS program every five years, provide load shedding, and switching of Elements in accordance with the UFLS program. Violation of these requirements could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system failure (blackout), or could place the bulk electric system at an unacceptable risk of failure (blackout), and could hinder restoration to a normal condition.				

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Peter T Yost	Consolidated Edison Co. of New York	3	Negative	NPCC has already implemented a Region specific UFLS Program incorporating a six year UFLS implementation plan, with year one of the plan having ended June, 2010. As such, Con Edison is concerned with how this version of PRC-006 might impact the NPCC Regional UFLS Standard. PRC-006 is not applicable to generators; however, R4 requires PCs to model generator specific information. This represents a missing link that needs to be addressed before the standard can be approved.
<p>Response: The schedule for implementation by UFLS Entities is at the discretion on the Planning Coordinator and is not set by the standard. The SDT has clarified in the effective date of PRC-006 that the sub-parts related to modeling of generator trip settings will not be effective until PRC-024 is approved and effective. Adding a Generator Owner data requirement to PRC-006 would be redundant and cause double jeopardy concerns. It is the case that some standards are dependent on data requirements found in other standards. An example is that data necessary to comply with TPL standards is required under MOD standards.</p>				
Louise McCarren	Western Electricity Coordinating Council	10	Negative	Opposed to the standard as drafted, so voting against associated VRFs and VSLs Comments submitted will provide specific details
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Lee Schuster	Florida Power Corporation	3	Negative	<p>Progress Energy believes that, overall, the proposed version of NERC Standard PRC-006-01 is acceptable and will provide good direction to the industry. However, we are voting Negative in this ballot, pending resolution of a number of comments that have been submitted via the on-line comment form. The major areas of concern are as follows.</p> <ol style="list-style-type: none"> 1. Requirements R5 and R13 require two or more Planning Coordinators to “reach concurrence” on UFLS design assessment results. However, no process is provided for resolution if concurrence cannot be reached. 2. Requirement R11 needs to have a threshold such that it is not necessary to perform mandated assessments of smaller islanding events. We suggest a threshold of 500 MW of load, as discussed in the Background discussion section of the Comment Form. 3. Several of the Violation Severity Levels are overly severe regarding assessment studies being late and/or they do not appropriately include a time frame as part of the measure. See the formal comments provided separately by Progress Energy for more details.
Wayne Lewis	Progress Energy Carolinas	5	Negative	
<p>Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern, though with a slightly different approach than the commenter’s suggestion. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments.</p> <p>The arbitrary qualifier of 500 MW was an item of earlier SDT discussion and inadvertently was left in the comment form. PRC-009, a FERC approved standard, does not have an event threshold, and PRC-006 is absorbing PRC-009. The existing standard PRC-009, which this standard is intended to replace, currently requires that an assessment be performed for all events regardless of size. The SDT cannot remove a requirement from an existing</p>				

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<p>standard without a technical justification that explains how this will make the requirement the same or better than what exists today.</p>				
<p>Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
<p>Mark Ringhausen</p>	<p>Old Dominion Electric Coop.</p>	<p>4</p>	<p>Negative</p>	<p>R4- REquieres concnurence amongst PCs(maybe in different regions) how do you deteremine whom is non-compliant. Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments. The revised standard eliminates the need to reach concurrence and replaces it with clear required actions that demonstrate that the Planning Coordinators coordinated should an island cross Planning Coordinator areas.</p> <p>What does 'design assesement' mean? Response: A design assessment is an assessment of the UFLS program design to ensure that the UFLS program meets the performance characteristics (Requirement R3).</p> <p>R5- What does the SDT meand by 'concurrence' in the requirement? This needs to be clarified. Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern – the term is no longer used. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments.</p> <p>R12- What do you mean by 'consider' the deficiencis? Must they be resolved? If you mean the PC must resolve them, the say that as 'consider' does not mean this. Response: An event may reveal that a UFLS program, while compliant with R3, might yet have performed better during the specific event under study. A design assessment is required by R12 to consider any conclusions or recommendations (deficiencies and how to address them) identified in the R11 event assessment relevant to the specific event while maintaining R3 compliance. However, as long as the UFLS program is compliant with R3, the standard cannot require resolution of such deficiencies.</p>

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Response: Please see in-line responses.				
Harold Taylor, II	Georgia Transmission Corporation	1	Negative	<p>R5: Need a measure for concurrence. Can two PCs have differing UFLS practices but still attain the needed load shed or must both have the same set point criteria to be in concurrence?</p> <p>Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments. In the third version of the standard Requirement R5 and R13 required concurrence between Planning Coordinators if an island encompassed more than on Planning Coordinator area. The standard drafting team revised Requirements R5 and R13 to define a set of actions that are measureable that will demonstrate that Planning Coordinators worked together should an island span more than one Planning Coordinator area.</p> <p>R7: While 40 calendar days for the Lower VSL is acceptable, the remaining 10 day intervals should be "working" days.</p> <p>Response: The SDT thinks that calendar days are appropriate for the 10-day intervals to be consistent with the Lower VSL.</p> <p>R8: Calendar days should be "working days". Mixing time limit and acceptable PC database format as a penalty can be subjective.</p> <p>Response: The SDT thinks that calendar days are appropriate; working days are not always the same for everyone. Both time limit and format need to be included somehow in the VSLs. The SDT believes the mix is appropriate.</p> <p>R11: Lower VSL is an incomplete statement. Delete "to evaluate" from the end.</p> <p>Response: The SDT made modified the VSL for Requirement R11 by making it a complete statement and replaced "to evaluate" with "evaluated".</p>
Response:				
Douglas E. Hils	Duke Energy Carolina	1	Negative	Requirements R5 and R13 contain the problematic requirement to "reach concurrence", as discussed in our responses to the comment form. The VSLs for these requirements is a solitary Severe VSL which may be impossible to meet, if an entity refuses to reach concurrence.

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<p>Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments. The SDT modified both R5 and R13 and made conforming changes to the VSLs. The revised standard eliminates the need to reach concurrence and replaces it with clear required actions that demonstrate that the Planning Coordinators coordinated should an island cross Planning Coordinator areas.</p>				
David Schiada	Southern California Edison Co.	3	Negative	SCE supports WECC's position paper.
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots</p>				
Anthony Jankowski	Wisconsin Energy Corp.	4	Negative	see comments on standard
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots</p>				
Tom Bowe	PJM Interconnection, L.L.C.	2	Negative	The ability for the PC to comply with R1 and R2 requires ULFS entities and Transmission Owners to comply with this standard. The VSLs should clearly state that it is the PC who did not meet its obligations under R1 and R2 and not that non-compliance to R1 and R2 was the result of non-compliance by a third party which the PC relied on in meeting its obligations under this standard.
<p>Response: Requirements R1 and R2 of the proposed standard do not involve the Transmission Owners or UFLS entities to perform a task in order for the Planning Coordinators to comply with the requirement. The proposed requirements (R1 and R2) relate to the determination of islanding criteria and the identification of islands in the planning horizon for use in UFLS design assessments. The activities in Requirements R1 and R2 are planning activities that can be accomplished without a Transmission Owner or UFLS entity.</p>				
Laurie Williams	Public Service Company of New Mexico	1	Negative	The current proposal does not require coordination within the interconnection. The standard should require the PCs within an interconnection to coordinate a UFLS Design with all other PCs within the interconnection and that the PCs should be required to develop a coordinated interconnection wide UFLS Design. As proposed the standard could conceivably result in as many different UFLS plans within a Reliability Region as there are Planning Coordinators. Additionally, the proposed standard does not address UFLS relays which are currently part of the existing program but are owned by the customer. Recognition of customer owned relays is critical to have a successful program. To assure areas are covered the LSE needs to be included in the Applicability section. A third concern is the proposed standard attempts to establish continent wide frequency-time curves and eliminate discrete set points. This approach fails to recognize the unique characteristics of the four individual interconnections. Frequency-time curves do not allow for specific and defined measurements and will leave individual entities defaulting to the lowest common denominator. If frequency-time curves are intended to define the boundaries, the determination of discrete set points would fall

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				<p>into the hands of the PCs leading to disagreements among entities. In addition, to determine the frequency-time curves through stability and dynamic modeling, one must establish discrete set points. Frequency-time curves are reverse engineering and require justification and correlation to the reliability of the interconnections - no such justification has been provided.</p>
<p>Response: The SDT agrees that interconnection coordinated UFLS plans are desirable, but the degree of diversity of systems in various regions, particularly in the Eastern Interconnection, makes this an unrealistic goal for a continent-wide standard; some flexibility needs to be reserved to address regional needs. The standard requires the identification of Regional Entity footprints as islands to be used in UFLS design assessments (Requirement R2, Part 2.3) and that the Planning Coordinators within each Regional Entity footprint work with each other on the design assessments for those islands (R5). The SDT believes that this goes as far as practical to address the need to coordination UFLS plans within an interconnection. The SDT believes that a continent-wide standard cannot require single UFLS plans for each interconnection. The SDT agrees that frequency is an interconnection issue, but also acknowledges that, should an island form, frequency becomes an island issue also. The SDT does not believe that designating islands as a secondary function of UFLS is a distinction useful for reliability because most UFLS operations are seen to occur following island formation. The standard does not preclude development of Regional UFLS standards and that approach may address WECC’s desire to have one coordinated UFLS design.</p>				
<p>Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Bruce Merrill	Lincoln Electric System	3	Negative	<p>The majority of VSLs and VRFs are acceptable as currently proposed. However, the VSLs for R5 and R13 depend on reaching “concurrence” with other entities, which is not a valid basis for measuring compliance. If the concurrence requirement cannot be revised, then we propose that the VSL levels be reduced.</p>
Dennis Florom	Lincoln Electric System	5	Negative	<p>Response: The SDT agrees that reaching concurrence could be problematic and has modified R5 and R13 to address this concern. The SDT still believes that coordination of UFLS plans is important enough that Planning Coordinators must work with each other on both design and event assessments. The revised standard eliminates the need to reach concurrence and replaces it with clear required actions that demonstrate that the Planning Coordinators coordinated should an island cross Planning Coordinator areas.</p>
Eric Ruskamp	Lincoln Electric System	6	Negative	<p>Additionally, we would propose reducing the VRFs for R3, R4, R9 and R10 from “High” to “Medium” to account for the fact that primary measures of automatic UFLS programs will normally restore the system even if some UFLS requirements are not completely fulfilled.</p> <p>Response: These requirements are assigned a High VRF because the reliability objective of these requirements is to perform an assessment of the UFLS program every five years, provide load shedding, and switching of Elements in accordance with the UFLS program. Violation of these requirements could, under emergency,</p>

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				<p>abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system failure (blackout), or could place the bulk electric system at an unacceptable risk of failure (blackout), and could hinder restoration to a normal condition.</p>
<p>Response: Please see in-line responses.</p>				
John T. Underhill	Salt River Project	3	Negative	<p>The primary concern identified is that the current proposal does not require coordination within the interconnection. The standard should require the PCs within an interconnection to coordinate a UFLS Design with all other PCs within the interconnection and that the PCs should be required to develop a coordinated interconnection wide UFLS Design. As proposed, the standard could conceivably result in as many different UFLS plans within WECC as there are Planning Coordinators.</p>
Glen Reeves	Salt River Project	5	Negative	<p>Additionally, the proposed standard fails to address UFLS relays which are currently part of the existing program which are owned by the customer. Recognition of customer owned relays is critical to have a successful program. To assure areas are covered, the LSE needs to be included in the Applicability section.</p> <p>A third concern is the proposed standard attempts to establish continent wide frequency-time curves and eliminate discrete set points. This approach fails to recognize the unique characteristics of the four individual interconnections. Frequency-time curves do not allow for specific and defined measurements and will leave individual entities defaulting to the lowest common denominator. If frequency-time curves are intended to define the boundaries, the determination of discrete set points would fall into the hands of the PCs leading to disagreements among entities. In addition, to determine the frequency-time curves through stability and dynamic modeling, one must establish discrete set points. Frequency-time curves are reverse engineering and require justification and correlation to the reliability of the interconnections - no such justification has been provided.</p>
<p>Response: The SDT agrees that interconnection coordinated UFLS plans are desirable, but the degree of diversity of systems in various regions, particularly in the Eastern Interconnection, makes this an unrealistic goal for a continent-wide standard; some flexibility needs to be reserved to address regional needs. The standard requires the identification of Regional Entity footprints as islands to be used in UFLS design assessments (Requirement R2, Part 2.3) and that the Planning Coordinators within each Regional Entity footprint work with each other on the design assessments for those islands (R5). The SDT believes that this goes as far as practical to address the need to coordination UFLS plans within an interconnection. The SDT believes that a continent-wide standard cannot require single UFLS plans for each interconnection.</p>				
<p>The SDT recognizes that the Functional Model Version 5 and the Statement of Compliance Registry cause confusion regarding the involvement of the LSE</p>				

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<p>in UFLS programs but the SDT refers to the section covering the Roles in Load Curtailment in Version 5 of the Functional Model Technical Document; “For non-voluntary curtailment, such as automatic underfrequency and undervoltage load shedding and manual load shedding, the Load-Serving Entity identifies which critical customer loads should be excluded from curtailment for public health, safety and/or security reasons.</p>				
<p>The SDT agrees that frequency is an interconnection issue, but also acknowledges that, should an island form, frequency becomes an island issue also. The SDT does not believe that designating islands as a secondary function of UFLS is a distinction useful for reliability because most UFLS operations are seen to occur following island formation. The standard does not preclude development of Regional UFLS standards and that approach may address WECC’s desire to have one coordinated UFLS design.</p>				
<p>Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
<p>The curves are solely for checking the frequency trajectories of simulations and not for setting UFLS relays. The Quebec interconnection has a variance. The other three interconnections are not unique enough to have separate curves, though they could propose variances if they wanted to. They have not. The Planning Coordinators do have the responsibility to determine UFLS design parameters including frequency set points. The SDT decided in the first draft that these parameters should not be determined in a continent-wide standard for the very reason that regions and interconnections have unique characteristics. This is decidedly not a least common denominator approach. The SDT disagrees that the performance characteristic curve approach is reverse engineering, but rather designing to a target. The reliability justification for the curves is their coordination with generator tripping.</p>				
Dennis Sismaet	Seattle City Light	6	Negative	The standard, requirements, and measurements should reflect the uniqueness of the individual interconnections and not common, continent wide prescriptions.
<p>Response: The SDT agrees that interconnection coordinated UFLS plans are desirable, but the degree of diversity of systems in various regions, particularly in the Eastern Interconnection, makes this an unrealistic goal for a continent-wide standard; some flexibility needs to be reserved to address regional needs.</p>				
John Tolo	Tucson Electric Power Co.	1	Negative	The WECC’s Underfrequency Load Shedding Plan is done on an interconnection-wide basis and therefore should have a regional variance as the Quebec Interconnection has. Further, until the WECC has a defined Planning Coordinator this standard, as written, may be applicable to each Balancing Authority’s Planning Authority.
<p>Response: The SDT agrees that interconnection coordinated UFLS plans are desirable, but the degree of diversity of systems in various regions, particularly in the Eastern Interconnection, makes this an unrealistic goal for a continent-wide standard; some flexibility needs to be reserved to address regional needs. Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots. The terms, “Planning Authority” and “Planning Coordinator” are accepted as identical by both NERC and FERC.</p>				
Larry Akens	Tennessee Valley Authority	1	Negative	TVA believes the following VRF changes should be considered: R4 - change from High to Medium. Justification: The selection of a 5-year interval for assessments seems subjective in nature. Failure to perform an assessment within a 5-year interval would not directly cause or

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George T. Ballew	Tennessee Valley Authority	5	Negative	<p>contribute to bulk electric system instability.</p> <p>Response: These requirements are assigned a High VRF because the reliability objective of these requirements is to perform an assessment of the UFLS program every five years, provide load shedding, and switching of Elements in accordance with the UFLS program. Violation of these requirements could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system failure (blackout), or could place the bulk electric system at an unacceptable risk of failure (blackout), and could hinder restoration to a normal condition.</p> <p>R11 - change from Medium to Low. Justification: documenting a post event assessment seems more administrative in nature, relative to R12.</p> <p>Response: Requirement R12 requires that a post event assessment be conducted as well as documented. If the requirement was only a documentation requirement then the VRF should be a "lower"; however, there is more to the requirement than just documentation.</p> <p>The Lower VSL for R11 needs work. It appears to simply repeat the requirement rather than stating a violation.</p> <p>Response: The SDT made conforming changes to the VSL for Requirement R11.</p> <p>Recommend that the time ranges for the VSLs addressing being late with the assessment should be expanded to Moderate 12-14 months, High 14-16 months, and Severe greater than 16 months.</p> <p>Response: The SDT accurately reflected the severity of not performing the study in the VSLs as proposed and does not agree that grading the timeliness of the study is necessary. The SDT established increments in the VSLs according to the NERC VSL guidelines.</p> <p>Revise the High and Severe VSL that contain the phrase "shall conduct and document" to read: "conducted and documented."</p> <p>Response: The SDT made conforming changes to this VSL.</p> <p>The R4 VSLs should include a consideration of the timeliness of the completion of the study (e.g. lower VSL for 3 months late, Moderate for 3 to 6 months, etc.).</p>

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				<p>Response: The SDT accurately reflected the severity of not performing the study in the VSLs as proposed and does not agree that grading the timeliness of the study is necessary.</p>
<p>Response:</p>				
John Canavan	NorthWestern Energy	1	Negative	Voted no to the proposed standard
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Gregory J Le Grave	Wisconsin Public Service Corp.	3	Negative	<p>VRF's for R4 should be reduced from "high" to "medium". System events that would cause UFLS program initiation are rare and are a last resort to preserve the interconnection. The performance of an UFLS program does not change dramatically enough to warrant a "high" VRF for a delay in conducting or documenting a UFLS assessment.</p> <p>Response: These requirements are assigned a High VRF because the reliability objective of these requirements is to perform an assessment of the UFLS program every five years, provide load shedding, and switching of Elements in accordance with the UFLS program. Violation of these requirements could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system failure (blackout), or could place the bulk electric system at an unacceptable risk of failure (blackout), and could hinder restoration to a normal condition.</p> <p>VSL for R9 is too restrictive. Distribution Providers, particularly small ones, will find it onerous to attempt to manage distribution circuit loads within such tight requirements on its UFLS feeders.</p> <p>Response: Violation Severity Levels (VSLs) define the degree to which compliance with a requirement was not achieved. The Planning Coordinator will need to take into account the ability and limitations of small Distribution Providers to allocate load for UFLS. The Distribution Provider can comment on the Planning Coordinator's UFLS program design in this regard via the provision of Requirement R14 peer review.</p>
<p>Response:</p>				

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Janelle Marriott	Tri-State G & T Association Inc.	3	Negative	<p>We believe that individual Planning Coordinators are not the appropriate entities to be responsible for determining criteria for areas that may form islands, for identifying the islands, for developing the UFLS program for periodic assessments, for maintaining databases or for assessing events. The current registration by numerous entities as Planning Coordinators does not lend itself to a comprehensive individual island formation methodology. All Planning Coordinators within an interconnection should be required to collaboratively develop an interconnection-coordinated UFLS Plan. Further, Planning Coordinator footprints are neither defined nor is there any guidance on how they should be established. Every VSL that refers to a PC footprint should be clarified.</p> <p>The primary purpose of any UFLS program should be to mitigate the need to form islands by balancing total system loads and resources. It is only a secondary function to balance the loads and resources after the islands have been formed. It appears the Drafting Team focused on the islanding events rather than assuring the interconnection integrity is maintained. Frequency is an interconnection issue not an individual island issue and therefore not driven by an individual PC but by a coordination of PCs efforts within the interconnection. We strongly believe that there should be recognized sub-area group(s), which consist of PCs, as assigned by the Regional Assurer (RA), which is the agent(s) for overall coordination within the interconnection or sub-area. For example in the WECC, the RA recognizes the following sub-area groups for UFLS coordination within the Interconnection: Southern Islanding Load Tripping, Northwest Power Pool UFLS Group and the WECC Off Nominal Frequency Load and Restoration Plan. Without the RA assuring coordination of the sub-area groups, PCs could randomly or arbitrarily form sub-area groups whose plans do not coordinate or address the interconnection reliability needs. There is also a concern that EOP-003-2 is currently being balloted based on changes made as a part of the Order 693 Directives. The two versions are not compatible. We believe that "ownership" should be removed from the criteria because it may be different from the operating or controlling entity and both entities cannot be responsible. Load Serving Entities should also be included as a "possible" UFLS entity. Some large interruptible customers outside of DP or TO could be allowed to own UFLS devices. Each interconnection should establish discrete set points based upon stability and dynamic analysis. From discrete set points one can establish criteria which are measurable and performance based for the applicable entities. The existing analysis tools available are unable to model continuous time/frequency curves and therefore specific measurements for all entities cannot be defined leaving the performance at the discretion of the PC. Furthermore, the Standard needs to be very explicit that the curves are interconnection performance curves and not specific protective relay set points. The standard should adequately recognize the performance characteristics of different type of generation and a variance should not be required. Faster acting and greater inertia systems should be allowed the operating margins appropriate to their systems. Real</p>

Voter	Entity	Segment	Vote	Comment
				differences exist between interconnections. The standard and its performance requirements should reflect this fact. This would allow for the uniqueness of each interconnection to be addressed similar to Hydro Quebec's variance.
<p>Response: The SDT believes the Planning Coordinator, having a wide-area view and the necessary technical skills, is the proper entity to oversee the design and implementation of UFLS. There is also wide industry support for the Planning Coordinator as the proper entity for UFLS. The SDT recognizes the need to at least preserve coordination on the regional level and has inserted a requirement (Requirement R2, Part 2.3) to identify each Regional Entity footprint as an island to be assessed for UFLS performance. The PC's within each region will need to work with each other in order to produce a successful assessment.</p> <p>The SDT agrees that interconnection coordinated UFLS plans are desirable, but the degree of diversity of systems in various regions, particularly in the Eastern Interconnection, makes this an unrealistic goal for a continent-wide standard; some flexibility needs to be reserved to address regional needs. The SDT agrees that frequency is an interconnection issue, but also acknowledges that, should an island form, frequency becomes an island issue also. The SDT does not believe that designating islands as a secondary function of UFLS is a distinction useful for reliability because most UFLS operations are seen to occur following island formation.</p> <p>The scope of work addressed under the Order 693 Directives was revised so that Project 2010-12 no longer addresses EOP-003.</p>				
Chifong L. Thomas	Pacific Gas and Electric Company	1	Negative	We cannot vote affirmative on the VRFs and VSLs until concerns on the proposed standard have been addressed.
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				
Charles H Yeung	Southwest Power Pool	2	Negative	We disagree with the enforcement of requirements if a subject registered entity will have to rely on another yet to be approved standards to be fully compliant. A generator/owner operator must be held responsible to provide UFLS data to the PC. The SDT has denied a request to add GOs into the PRC-006 citing such a requirement falls outside the scope of this standard and will be addressed in a separate standard. Nonetheless, adoption of this version of PRC-006 will subject PCs to account for all bulk power system devices that affect UFLS schemes, but lacks the ability to force a GO to provide needed data. NERC compliance must realize such gaps exist and enforce these requirements with that knowledge. These VSLs do not recognize such a gap.
<p>Response: The responsibility of generator owners resides within a standard under development currently, PRC-024. Per the implementation schedule proposed for PRC-006, any requirements that necessitate the use of generator tripping data do not come into effect until after PRC-024 is approved.</p>				
Richard J. Padilla	Pacific Gas and Electric Company	5	Negative	We have voted no due to our negative vote on the standard recommend that the VRF and VSL be addressed after the standard comments are resolved
<p>Response: Please see the SDT responses to the comments in the Consideration of Comments report for the formal comment period conducted in June-July, 2010. In addition, please see the response to comments to the subsequent ballots.</p>				

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Paul B. Johnson	American Electric Power	1	Affirmative	As AEP has stated in other projects, setting a VSL at “Severe” for a binary outcome could be challenged as being arbitrary and another level should be used as the starting point.
Edward P. Cox	AEP Marketing	6	Affirmative	
<p>Response: In its June 19, 2008 Order on Violation Severity Levels, FERC indicated it would use specific guidelines for determining whether to approve VSLs: Guideline 2: Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties A violation of a “binary” type requirement must be a “Severe” VSL. The SDT must comply with the FERC VSL guidelines.</p>				