

Consideration of Comments – First Draft of PRC-006-SPP-01—Automatic Underfrequency Load Shedding Program

1. Do you agree with the applicable entities of the proposed standard? If not, please explain.

Responses

Yes - 10

No - 9

Organization	Question 1:	Question 1 Comments:
AECC	No	See comments 11 through 15 attached
AEP	Yes	Please specify which entity is responsible for a compliance activity or data submission. For example, R3 includes five entities and nine types of UFLS data. No one entity could provide all of this data, so it would be much clearer and successful to identify which entity provides which types of UFLS data.
Commonwealth Edison Co.	No	<p>Thank you for the opportunity to comment.</p> <p>We spent some time discussing this issue when developing the current draft of the RFC UFLS standard. The Load Serving Entity may not own any equipment, may contract to serve load in blocks that don't necessarily correspond to discrete feeders (i.e. UFLS relay), may have difficulty in providing load information coincident with system load for a specific period of time, and may not even contract to serve load far enough in advance to accurately plan into the future. I suggest that 'LSE' be eliminated as an applicable entity.</p> <p>The TO function may not apply unless the TO serves end-use load. I suggest that rather than making all TOs applicable entities, it should be 'Transmission owners with end-use load'.</p> <p>It would be beneficial to have each of the requirements applicable to a certain entity rather than listing the possibilities for applicability.</p>
Consumers Energy	Yes	
City, Water & Light	Yes	
Farmers' Electric Coop	No	By applying the Standard to a LSE and or DP, SPP is exerting operational control over a distribution utility. In New Mexico, the New Mexico Public Regulation Commission is the regulatory body with oversight, including service standards. This Standard will impose additional costs in equipment and personnel to implement and operate.
SDT Response	The proposed SPP standard is designed to ensure that during a load shedding event the transmission system should remain intact as long as possible with load shedding occurring as close to the end user as practical. Therefore the proposed SPP standard requires that each DP be responsible for shedding its own native load.	
Golden Spread	Yes	Golden Spread (GS) agrees with the proposed applicable entities, subject to clarification. Regarding the applicability of the proposed standard to Distribution Providers, GS believes that the entities subject to the requirements of the proposed standard should be limited to entities required to register with SPP Regional Entity as Distribution Providers, i.e., those that meet the criteria of NERC Statement of Compliance Registry Criteria III.b.1, "Distribution provider system serving >25 MW

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		of peak load that is directly connected to the bulk power system." GS believes that entities that serve peak load of 25 MW or less, or that are not directly connected to the bulk power system, should not be required to implement automatic UFLS programs, or to participate with other entities to collectively implement by mutual agreement a single automatic UFLS program, absent a demonstration by SPP that expansion of the applicability of this standard to such entities is necessary to assure the reliability of the bulk power system. GS requests that SPP clarify whether GS is correct that the term "Distribution Provider" is meant to be defined consistent with Golden Spread's understanding as stated above.
KCPL	Yes	
KEPCO	Yes	
Lafayette Utilities System	No	<p>As currently drafted, the proposed standard applies to "Load-Serving Entities with a peak integrated hourly load greater than 25 MW" and "Generator Owners of generators with an individual nameplate rating or plants, including Wind Generating Stations, with an aggregate nameplate rating of 10 MVA or greater." (See §§ A.4.3, A.4.4.)</p> <p>Neither of these applicability criteria are consistent with the NERC Statement of Compliance Registry Criteria's registration requirements for Load-Serving Entities ("LSEs") or Generator Owners ("GOs"). Specifically, the Registration Criteria limit registration for LSEs to those entities having peak loads of greater than 25 MW and a direct connection to the Bulk Electric System or designated as the responsible entity for facilities that are part of required Under-Frequency Load Shedding ("UFLS") or Under-Voltage Load Shedding programs. As to GOs, the Registry Criteria require registration only for GOs with individual generation units rated at greater than 20 MVA and direct connections to the Bulk Electric System, facilities rated at greater than 75 MVA, blackstart units, or units that are otherwise demonstrably material to the reliability of the Bulk Electric System.</p> <p>SPP's proposed Automatic UFLS Program is overly broad to the extent that it purports to apply to users, owners, or operators of the Bulk Electric System that are not otherwise required to register and adhere to Commission-approved Reliability Standards. In the absence of a specific demonstration by SPP (such as through engineering studies and analyses) that the LSEs and GOs that SPP proposes shall be subject to its Automatic UFLS Program are material to the reliability of the Bulk Electric System, the Automatic UFLS Program should apply only to those LSEs and GOs independently meeting NERC's Commission-approved Registry Criteria.</p>
Lubbock Power & Light	No	Lubbock Power and Light competes for customers alley by alley with SPS. There are wires on both sides of the alley. It only takes 3 days for a customer to change service providers. Lubbock Power and Light has over 75% of the electric meters. Since the SPS region is so large it would be possible for SPS to perform their load shedding requirements without shedding in Lubbock, while we (Lubbock Power and Light) would be required to shed load on a percentage of the peak. This would give SPS a unfair business advantage.
National Rural Electric Cooperative Association (NRECA)	No	The Statement of Compliance Registry Criteria (5.0) states that "The Regional Entity considering registration of an organization not meeting (e.g., smaller in size than) the criteria may propose registration of that organization if the Regional Entity believes and can reasonably demonstrate that the organization is a bulk power system owner, or operates, or uses bulk power system assets, and is material to the reliability of the bulk power system." The Applicability portion of this draft standard puts the burden of demonstration of materiality for a Distribution (4.2.1) or Generation Entity (4.4.1) that may not be presently included on the Compliance Registry on the Planning Coordinators or Transmission Planner. In addition, this standard lowers the criteria for registration for Generation Owners from the threshold of > 20 MVA (gross nameplate rating)

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		to an aggregate nameplate rating of 10 MVA or greater with no documentation to support the deviation from the Statement of Compliance Registry Criteria (5.0).
Nebraska Public Power District	Yes	
Occidental	No	With regard to the applicability to Generator Owners, the minimum nameplate rating of 10 MVA should be at the least increased to 20 MVA to match the existing registration requirements of NERC. Lowering the threshold to 10MVA is problematic for those generation owners who are not required to register with NERC as a Generator Owner to comply. At this time, NERC has determined that these smaller generators are not significant enough to be "crucial to the reliability of the Bulk Electric System".
OMPA	No	<p>OMPA would like to express its serious concerns over the applicability being proposed in this standard as it pertains to generators. The standard proposes, under Section 4.4, that the requirements apply to “generators with an individual nameplate rating or plants, including Wind Generating Stations, with an aggregate nameplate rating of 10 MVA or greater.” OMPA objects to this applicability criteria for the following reasons.</p> <ol style="list-style-type: none"> 1. NERC’s Statement of Compliance Registry Criteria limits generators 20 MVA or greater (individual unit) or 75 MVA or greater (aggregate nameplate rating) AND directly connected to the bulk power system. We feel that this Criteria is satisfactory, and that the Working Group has not presented their justification for reducing the applicability requirement to 10 MVA or greater (aggregate nameplate rating). 2. OMPA also feels that the proposed 10 MVA level will have the unintended consequence of pulling many small generators into the UFLS system, which have little, if any, impact on improving reliability. As an example, many municipal systems in Kansas have an aggregate nameplate capacity in excess of 10 MVA and will be subject to this standard; however, these units are typically reserve units that are infrequently in service. 3. It appears that the 10 MVA limit is intended to address the impact of Wind Farms, which is comprised of many small generating units. OMPA feels that wind generators should be addressed separately, and that a proposed 10 MVA aggregate threshold for all generating units is not the appropriate method to accomplish this goal. 4. If this standard were to apply to the many small generators typically owned by municipal systems, it could have the unintended consequence of creating a competitive disadvantage without a corresponding impact on reliability. It would be cost prohibitive for many of these owners to install the necessary protective relaying on these units.
SPRM	No	We agree with list of applicable entities. We agree with the idea of accounting for all load and generation in the footprint.

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		However, we are concerned that the current draft standard exceeds the NERC Statement of Compliance Registry Criteria. It is our opinion that this should be accomplished through the NERC registry process so that it is consistent across all regions.
SPS	Yes	It is unclear how the standard could be enforced against generation entities who are not required to register by NERC.
SWPA (Gary Cox)	Yes	
SWPA (Mike Wech)	Yes	
SDT Response	In the revised standard, the SDT has removed LSE's and Transmission Planners from the applicability section. We have also removed the more stringent requirements on the Distribution Providers and Generations Owners. Only applicable entities per the NERC registry will be required to register. However, SPP will conduct a technical study in 2010 to verify the effectiveness of the design based on the participation of these entities. If it is determined that the program is ineffective due to non-registered entities having a significant impact on the SPP UFLS program the Regional Entity may require unregistered Distribution Providers or Generation Owners to register.	

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2. Are there entities, not currently on the registered entities list, that need to comply to ensure effectiveness?

Responses

Yes - 4

No - 13

Organization	Question 2:	Question 2 Comments:
AECC		The registration of entities is a separate issue and should not be considered as part of standard development.
AEP	No	
Commonwealth Edison Co.	No	
Consumers Energy	Yes	While it is certainly true for automatic UFLS that every MVA matters, it might be less important if a 10 MVA generator is connected at less than 69 KV. I believe that it is correct to go below NERC registry criteria for automatic UFLS, but it might be more acceptable to Generators if the phrase "which is connected to the BES at 100 KV or greater" was added to the end of a sentence.
City, Water & Light	No	
Farmers' Electric Coop	No	I am aware of one entity in our area that is currently exempt from NERC Standards due to size and/or voltage limitations. Under the SPP proposal, this entity could be required to register and comply. I do not believe this would increase the reliability of the Bulk Electric System.
Golden Spread	Yes	Golden Spread (GS) does not have the needed information to answer this. However, GS members participated at a higher percentage level than required by the SPP Criteria during the June 17, 2008 UFLS event in the Southwestern Public Service (SPS) control area. Entities that currently do not participate under the SPP Criteria cause the rest to participate at a higher level. It is only fair that all entities serving end use load that meet the thresholds set forth in the NERC Statement of Compliance Registry Criteria should participate in UFLS.
KCPL	No	
KEPCO	No	The registry list contains the significant players needed for effective UFLS programs.
Lubbock Power & Light	No	
National Rural Electric Cooperative Association (NRECA)	No	Since there is no technical support included with the posting to justify the deviation from Statement of Compliance Registry Criteria (5.0) it is difficult to determine the effectiveness of the additions to the Compliance Registry. As discussed in question #1, for deviations from the criteria the Regional Entity is responsible for demonstrating the materiality of an entity.
Nebraska Public Power District	No	
Occidental	No	

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OMPA	Yes	This will undoubtedly require some smaller entities that are not current registered to comply with these new standard requirements. These smaller entities may have generators that are > 10 MVA and therefore be required to meet this standard although they have little, if any, impact on the bulk power system. As an example, many municipal systems in Kansas have an aggregate nameplate capacity in excess of 10 MVA and will be subject to the standard; however, these units are typically reserve units that are infrequently in service.
SPRM	Yes	This is related to the answer to question 1. What is the NERC process for requiring small non-registered entities to have a UFLS program and therefore be required to register as a DP/LSE? It is our opinion that this should be accomplished through the NERC registry process so that it is consistent across all regions.
SPS	No	
SWPA (Gary Cox)	No	
SWPA (Mike Wech)	No	
SDT Response	In the revised Standard, only applicable entities per the NERC registry will be included. SPP will conduct a technical study in 2010 to verify the effectiveness of the design based on participation of these registered entities. If it is determined that the program is ineffective due to non-registered entities having a significant impact on the SPP UFLS program and not participating, the entity will be included by going through the NERC registry process. The RC will determine the impact of non-registered entities.	

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3. This standard proposes changing to a planning based standard from an operational based standard as described in current SPP Criteria 7.3. Do you agree with this approach? If not, please suggest why not?

Responses

Yes - 13

No - 2

Organization	Question 3:	Question 3 Comments:
AECC	Yes	It is good to see SPP go back to the original intent of Criteria 7.3.
Commonwealth Edison Co.	Yes	
Consumers Energy	Yes	
City, Water & Light	No	<p>It appears that the way the standard is proposed, a system will be required to shed between 30% and 45% of its forecasted peak native load if the system drops to 58.7 hertz. This could be very difficult to achieve during off-peak conditions for systems that have wide load diversity. For example, shedding 30% to 45% of our predicted peak load during an extreme off peak situation, could result in shedding our entire load. This would be extremely complicated to regulate with our existing relaying. CWL drops main breakers of industrial circuits. To accomplish our load shedding, we trip only 6 main breakers. To trip 30% of our peak load during off-peak situations would require tripping 25 main breakers. Most of these breakers would require relay change outs at a great expense. CWL offers the following as a recommendation for load shedding requirements at various system load conditions.</p> <p>"Each utility will demonstrate their ability to shed load in three increments during peak conditions. The amount of load to be shed at each increment will be approximately 10 percent of the utility's previous year's peak load. The first increment will be shed at a frequency of 59.3 Hz, the second increment will be shed at 59 Hz, and the third increment will be shed at 58.7 Hz.</p> <p>It is understood by all parties (Utility & SPP) that the amount of load shed will be somewhat proportional to Utility's load at the time of the semiannual test or actual occurrence of a load-shedding event. This will significantly reduce the amount of load shed during low usage periods.</p> <p>Utility loads vary depending on the day of the week, on holidays, during downtime and during maintenance of facilities. The Utility will not be required to maintain an exact percentage of load shedding or an exact specific amount of load shedding at all times. Utility will initiate settings as specified above, to support the Regional System should an event occur.</p> <p>Load Shedding Testing of the Regional System will be conducted under the direction of SPP. The general guideline will</p>

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		<p>be to test on a semi annual basis at a specific time and date at the discretion of SPP."</p> <p>Please provide examples to demonstrate this requirement/calculation of percentages of load to shed at on-peak and off-peak. If SPP continues to use a range for load shedding at the three UFLS steps, please consider increasing the Maximum Accumulated Load Relief Percentage.</p>
SDT Response	<p>The intent of the UFLS standard is to require shedding 30-45% of the forecasted peak native load on that peak day only. In any day that is not a peak day it is understood that the amount of load shed will be less than 30-45% of native peak load and assumed to be somewhat proportional to the amount of native load at the time of the event. The standard drafting team agrees with your statement; "It is understood by all parties that the amount of load shed will be somewhat proportional to Utility's load at the time of the actual occurrence of the load shedding event."</p> <p>There is no requirement to prove any load shed amount by test. The requirements are to provide documentation of compliance to the standard.</p>	
Farmers' Electric Coop	Yes	My objection is not related to planning or operational basis, but the requirement that equipment and operations be mandated at the distribution level. This is currently accomplished and effective at the TO, TP, TOP, BA level.
SDT Response	<p>The existing SPP criteria is managed on a member basis (since each SPP member has agreed to follow the criteria) not on the basis of registered entities (TO, TP, TOP, BA). Therefore, each SPP member has agreed to shed load on their system as required to meet the criteria. The practical application of the existing SPP criteria in some cases results in a TO shedding load for a DP. The proposed SPP standard is designed to ensure that during a load shedding event the transmission system should remain intact as long as possible with load shedding occurring as close to the end user as practical. Therefore the proposed SPP standard requires that each DP be responsible for shedding its own native load.</p>	
Golden Spread	Yes	We support a planning based standard. An operational based standard would require dynamically arming and disarming UFLS relays. Many small entities do not have the resources or systems in place to perform dynamic arming and doing so would cause major expense.
KCPL	Yes	
KEPCO	Yes	
Lubbock Power & Light	No	Planning based standards are theory and not tested. Operational based standards have usually been tested and are true.
SDT Response	<p>The existing SPP criteria is an operational based standard in that it required demonstration that the entity could meet the criteria at any given time. The existing SPP UFLS criteria have never been tested by a real life region wide UFLS event. The effectiveness of the existing criteria on a region wide basis has only been confirmed by computer simulation. The proposed PRC-006-SPP standard was designed with the intent that all entities within the region will be able to comply with the requirements and still provide adequate protection for an actual UFLS event. The effectiveness of the proposed PRC-006-SPP standard will be confirmed by computer simulation just as the existing SPP criteria has been.</p>	
Nebraska Public Power District	Yes	
Occidental		No comment or position at this time.
OMPA	Yes	
SPRM	Yes	

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SPS	Yes	
SWPA (Gary Cox)	Yes	
SWPA (Mike Wech)	Yes	I want to state that it is not that I necessarily disagree with this approach, but have some concerns that if this moves to a planning based standard, does that affect the ORWG involvement in review of the standard? Will several working groups continue to review this standard for applicability, conformance, and overall performance during UFLS events? I would assume so, but want to see how this affects the various working groups that currently look at the existing criteria.
SDT Response	<p>The existing criteria will not be in effect after this proposed standard is approved. The SPCWG is the standard drafting team for this proposed UFLS standard which is being developed per the SPP Standards Development Process so other working groups will not be involved in review of the standard.</p> <p>UFLS events will be reviewed by the Planning Coordinator based on information provided by all the involved entities as required by the proposed standard.</p>	

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4. This standard proposes the intentional relay time delay for UFLS shall not be greater than 30 cycles. Do you agree with this approach? If not, please suggest why not?

Responses

Yes - 8

No - 7

Organization	Question 4:	Question 4 Comments:
AECC	Yes	There should be some intentional delay allowed. i don't think it needs to be less than 15 cycles.
AEP	No	30 cycles may to too high to support the steps described in R1.2.
Commonwealth Edison Co.	No	In general an intentional additional delay of 30 cycles seems too long to respond quickly enough to arrest declining frequency. It does seem reasonable to allow certain cases to have an intentional time delay such as large motors.
Consumers Energy	Yes	
City, Water & Light	No	CWL requests technical justification for this requirement. Could a bandwidth for the relay time delays be allowed for facilities that are close to the 30 cycles? Does "intentional" refer to the "programmable" or "settable" time delay offered by protective relays? Is the time delay only relay delay or total breaker clearing time?
Farmers' Electric Coop		At the distribution level, I have no idea what approach is best, clearly, sufficient engineering analysis would be required for regional coordination of a UFLS program. It would appear that multiple participants increase the possibility of misoperation.
Golden Spread	Yes	We do not have technical justification for change.
KCPL	No	What is the engineering basis for 30 cycles? It is desirable to ensure no false trips will occur as a result of transmission or distribution system events that appear to the underfrequency relays to be an underfrequency condition and a half second is a very short time frame. Suggest the SDT consider establishing an engineering basis for a time frame that helps to minimize the risk of false trips and not so long as to endanger the integrity of the interconnect in an emergency situation.
KEPCO	No	We are neutral on this point because we do not own a UFLS system and have no experience to base a strong opinion either way.
Lubbock Power & Light	Yes	
Nebraska Public Power District	Yes	
Occidental		No comment or position at this time.
OMPA	Yes	
SPRM	Yes	
SPS	Yes	
SWPA (Gary Cox)	No	My question is where the 30 cycle figure came from. Is it a value that is from an engineering based study or just an arbitrary figure someone came up with, or because someone else is doing it.

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SWPA (Mike Wech)	No	<p>Would like to question the 30 cycle delay. If an entity has a 35 cycle delay, what is the technical justification for selecting a 30 cycle threshold?</p> <p>Any figure used should be based on a regions frequency response characteristic that is derived from studies of actual, or simulated events. Analysis of frequency degradation during an under frequency event and the frequency response characteristic provides the technical basis on which to set the time delay.</p> <p>My concern is that if there are entities in the system that have too much relay time delay and they now have to contract with someone to change the settings, where is the justification in that extra cost if they have conformed with SPP criteria in the past and had no prior issues?</p>
SDT Response	<p>The goal in selection of the maximum time delay is to prevent triggering more UFLS stages than necessary to remove the generation deficit. Smaller time delays are acceptable and desirable as long as care is taken by the owner in setting the time delays to insure the UFLS relays will not misoperate for system faults or on circuits with heavy motor loads.</p> <p>The maximum delay is based on data from the “2006 Evaluation and Assessment of SPP Under-Frequency Load Shedding Scheme” dynamic UFLS study performed by Powertech, and calculations of expected rate of frequency decay using the equation of $M=GH/180f$ megajoule-sec/electrical degree discussed in “Elements of Power System Analysis” by William D. Stevenson, Jr. Per these references, a 30-cycle delay plus 6 cycles of breaker clearing time is the maximum time delay for which an adequate margin is expected for the SPP steps.</p>	

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5. The standard proposes the Undervoltage inhibit shall be set as low as practical, but shall not be greater than 85 percent of nominal voltage. Do you agree with this approach? If not, please suggest why not?

Responses

Yes - 9

No - 5

Organization	Question 5:	Question 5 Comments:
AECC	Yes	The approach is fine but I am not sure about the 85% of nominal.
AEP		We would request that nominal voltage be clarified to refer to primary or secondary voltage.
Commonwealth Edison Co.	Yes	
Consumers Energy	Yes	
City, Water & Light	No	CWL requests technical justification for this requirement.
Farmers' Electric Coop		At the distribution level, I have no idea what approach is best, clearly, sufficient engineering analysis would be required for regional coordination of a UFLS program. It would appear that multiple participants increase the possibility of misoperation.
Golden Spread	Yes	We do not have technical justification for change.
KCPL	Yes	Although there is no particular concern regarding the proposed 85% in the standard, what is the engineering basis for 85%?
KEPCO	No	We are neutral on this point because we do not own a UFLS system and have no experience to base a strong opinion either way.
Lubbock Power & Light	No	I think 80 percent is more realistic.
Nebraska Public Power District	Yes	
Occidental		No comment or position at this time.
OMPA	Yes	
SPRM	Yes	
SPS	Yes	
SWPA (Gary Cox)	No	Once again I want to know where the 85% figure came from and if it is what is needed in every area of the system from an engineering standpoint.
SWPA (Mike Wech)	No	Would like to question the undervoltage inhibit. If an entity has a setting outside of the limit, what is the technical justification for selecting 85%? My concern is that if there are entities in the system that are just outside this limit and they now have to contract with someone to change the settings, where is the justification in that extra cost if they have conformed with SPP criteria in the past and had no prior issues?

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SDT Response	Past studies of the UFLS program based on the SPP Criteria 7.3 have indicated the design to be sufficient. Unfortunately, the undervoltage inhibit language in the Criteria is somewhat vague. The Standard Drafting Team feels it necessary to provide more specificity in this area and basically polled the team members to identify a starting point felt to be acceptable - hence the 85% value. This value will also be part of the 2010 technical study and may be adjusted if technically warranted.
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6. The Standard Drafting Team has not set a specific timeframe for the implementation of the standard. What do you suggest for the implementation timeframe to comply with the proposed standard requirements?

Organization	Question 6 Comments:
AECC	3 years following approval at FERC minimum.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
AEP	A phased-in approach is suggested.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
Consumers Energy	Three to five years.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
City, Water & Light	Please consider the actions required by all entities to gain compliance with the proposed standard. Allow ample time to implement processes and procedures to ensure compliance.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
Farmers' Electric Coop	If implemented at the LSE and DP level, sufficient time would be required to purchase and install the necessary equipment and coordinate with the TO, TP, BA, and other LSE's DP's in the BA area. Since this is currently accomplished on a regional (BA) basis, I assume cost recovery is from all consumers using the system. If implemented at the LSE and DP level, would cost recovery of implementation and ongoing operational expenses be recovered from the larger SPP footprint, the BA level, or LSE and DP consumers?
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length. Cost recovery for installing the system is normally bore by the individual company, as a part of doing business. It will be brought up to others to see if there is any consideration to another way of cost recovery.
Golden Spread	Golden Spread members are currently affected by UFLS via SPS relays installed at the transmission level. If "mutual agreement" were not reached, SPS would be required to remove UFLS from transmission lines affecting GS delivery points and GS members would be required to install UFLS on their systems. This would require significant equipment purchases and a coordinated effort between GS

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	members and SPS. Golden Spread would suggest a five (5) year phase in period.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
KCPL	Recommend the SDT consider 1 to 2 years considering the number of UFLS relays that could require settings changes to meet these proposed standards and the already committed manpower for relay maintenance.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
KEPCO	Load Serving Entities have not been required to have UFLS programs in the past. If any LSE is required to install such a system (i.e. the option for a collective implementation by mutual agreement doesn't exist), enough time must be given for the LSE to budget for, plan and install such a system. A two year timeframe should be sufficient.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
Lafayette Utilities System	<p>At a minimum, SPP should delay issuing a proposed regional standard until NERC has completed its own consideration of a uniform continent-wide standard. Since November 2006, NERC has been engaged in the standards development process for a uniform continent-wide UFLS standard. On April 21, 2009, NERC posted for comment a proposed second draft of UFLS program requirements. In fact, based on comments NERC received during the first comment period, the NERC Standards Development Team decided to convert the originally proposed “Characteristics of UFLS Regional Reliability Standards” into a uniform continent-wide UFLS standard that will be adopted through the approved NERC standards development process. See http://www.nerc.com/docs/standards/sar/Stds_Announce_Comment_Pd_Project2007-01_UFLS_2009April21.pdf. If the new standard is approved, several existing standards will be retired, including PRC-006-0 — Development and Documentation of Regional UFLS Programs.</p> <p>Under these circumstances, it makes little sense for SPP to expend its own and stakeholders’ resources developing a regional UFLS standard. As some of the regions already have done, SPP should forgo further action on a regional UFLS standard until NERC completes its process of considering a uniform continent-wide standard. Only then can it be determined whether there are special regional concerns that need to be addressed.</p> <p>Even if it is eventually determined that an SPP regional standard should be considered, SPP has the burden of demonstrating that there is a compelling need to bring entities under the registration and compliance process that are not currently subject to that process. Specifically, to the extent that an SPP regional standard would apply to LSEs and GOs not otherwise required to be included in the NERC and SPP Compliance Registries, the proposed Standard may not be implemented until such time as SPP demonstrates (through engineering studies or similar analyses) that the reliability of the Bulk Electric System requires the inclusion of these entities (as well as that the proposed standard is otherwise permissible and within SPP’s authority to adopt). Stakeholders in the SPP region should have the opportunity to evaluate and comment on any such studies and/or analyses, and to challenge (if they wish) the conclusions SPP reaches from them.</p>

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SDT Response	<p>Because of the continued delays that NERC is having in developing a standard, and the change in direction that they now have had, SPP decided to move forward with the standard at the SPP level. From the direction that NERC is now taking, it is also felt that there will need to be a regional standard also, to accomplish the needed result. It is felt that once NERC has a standard, that the SPP standard will only need minor adjustments to bring it into compliance.</p> <p>SPP has been doing engineering studies on how the existing Criteria meet the needs of an UFLS program for many years. These studies are done every 5 years. These studies have validated the Criteria and the standard is being developed from this.</p> <p>What has been noted recently is that there are becoming more entities within the SPP footprint that are not members of SPP, but can affect the needed results of the existing Criteria. These are now being included into the standard.</p>
Lubbock Power & Light	I think due to the purchase and installation of relays that 2 years for the implementation might be sufficient.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
Occidental	No comment or position at this time.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
OMPA	<p>First, OMPA feels the NERC standard should be finalized prior to finalizing the SPP standard to ensure consistency.</p> <p>If the current SPP draft is approved as currently written, the implementation timeframe to comply should be at least eighteen (18) months to ensure the smaller organizations have the opportunity to properly plan and budget for the equipment and installation necessary to comply with the requirements of this standard.</p>
SDT Response	<p>It appears that the NERC standard will be some time in being finalized. SPP felt that the needs of a functioning UFLS require that SPP try and develop a standard now and in parallel with NERC, realizing that SPP may need to make some minor changes in the standard once NERC's standard is adopted.</p> <p>It appears that most feel a time frame of 24 months is what may be needed. The Drafting team will consider a time frame near that length.</p>
SPRM	For R1-R5 and R8 "At the beginning of the first calendar quarter 12 months after FERC approval."
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
SPS	For highly interconnected systems where the interconnected companies do not participate via mutual agreement, there could be a lot of work required to separate the systems and avoid both companies attempting to interrupt the same load. For instance, if one company provides service to the other company at multiple locations, both companies may set up to trip common substations, resulting in less load being shed than anticipated. In these cases, a lengthy phase-in period would be warranted.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.

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SWPA (Gary Cox)	I think 24 months like most everything else. It is only a thought.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.
SWPA (Mike Wech)	6 months after FERC approval.
SDT Response	Thank you for your comment. It appears that a time frame of about 24 months seems to be about the average suggested. The Drafting team will consider a timeframe near that length.

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Additional Comments:

Organization	Comments:
AECC	***See comments at the end of the document.
AEP	<p>R1.1 refers to 30% of forecasted peak native load for the current year. We would be interested in having a reference as to what constitutes this reference to "Native load," and as to whether this is the single highest peak for the prior year or some other measure of peak.</p> <p>SDT Response: Native Load is defined in NERC Glossary of Terms..."The end-use customers that the Load-Serving Entity is obligated to serve." It is the forecasted highest peak of the next forecasted year.</p> <p>What are the expectations with regard to how wholesale loads (particularly munies and co-ops, including TDU co-ops such as AECC, ETEC, NTEC, TEX-LA and similar situated entities) are to be counted in calculating forecasted load as the forecast relates to the proposed standard and the calculation of percentage of native load to drop in each step (R1.2).</p> <p>SDT Response: Wholesale loads are to be counted in the same manner as other Native Load. Percentage of Wholesale loads are to be calculated in the same manner as other Native Load to be dropped as described in the standard.</p> <p>Furthermore, how much wholesale load is to be dropped, assuming it is to be dropped, and how is it to be calculated?</p> <p>SDT Response: The percentage of Wholesale loads to be dropped are to be within the boundaries as described in the standard. As expressed above, Percentage of Wholesale loads are to be calculated in the same manner as other Native Load to be dropped.</p> <p>As a percentage of its member load ratio?</p> <p>SDT Response: It shall be at least a 100% Percentage of its member load ratio.</p> <p>A percentage of the co-op's own non-simultaneous peak forecasted load in AEP's control area?</p> <p>SDT Response: No.</p> <p>Will these co-op's be required to work out the details with regard to requirements posed by the standard?</p> <p>SDT Response: Yes, each entity shall be required to work out these details or it shall properly delegate that responsibility.</p> <p>Who will be held in noncompliance should a discrepancy arise and how will the penalties be allocated?</p> <p>SDT Response: The entity shall be held in noncompliance in event that discrepancy arises. Penalties would be allocated according to its member load ratio.</p>

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	<p>Further requirements and measures will be necessary to provide the level of clarification that we are requesting.</p> <p>SDT Response: Thank you for this comment. It is noted.</p>
Commonwealth Edison Co.	<p>There should be a clear definition as to what constitutes a credible island, especially if the standard is calling for the installation of additional equipment in them. It is not clear what is meant in R7 where it is stated that UFLS capability should 'cover' potential imbalances. Do imbalances need to be covered 100%? There seems to be an inconsistency between who determines appropriate islands to study in R6 - the Planning Coordinator or the Transmission Planner.</p>
SDT Response	<p>'Credible islands' has been defined in the Definition section.</p> <p>R6 and R7 have been revised.</p>
Consumers Energy	<p>After R1.6, consider requiring a report of the details of any "Special Protection Scheme" (SPS) which impacts UFLS. The report to the Planning Coordinator must include the reason for the SPS, the amount of load involved, frequency settings, time delays, UV inhibit settings, and any other data required for proper modeling of the UFLS. While there may not be any relevant SPSs in SPP, there are some in the Midwest.</p> <p>In R2, the Generator Owner should be required to verify that the underfrequency tripping relays (including V/Hz) "will not trip during low frequency conditions above levels as listed in R1." Generating units have many problems with underfrequency. For example, on drum boilers, motor-driven boiler feed pumps run slower and thus pump less water at a time when MW demand, and thus steam flow, is likely to be increasing. This has resulted in unit trips on low drum level in response to underfrequency. Similar problems can occur with all motor-driven pumps, fans, coal pulverizers, etc. I believe there is no practical way, consistent with good utility operating practice, for a Generator Owner to "verify" that none of these things trip a unit on underfrequency. Absent a way to do this, the best that can be done is to require relay settings in accordance with R1.</p> <p>R6 is an excellent requirement.</p> <p>In R7, I suggest that in the first paragraph, replace the word "or" with "and". "Transmission Operator, Distribution Provider, Load Serving Entity, and Generator Owner....." I believe all of these entities should be required to participate. With the "or" in the sentence, one or more entities may decline to participate if one other entity is participating. In the second paragraph, the "or" seemed appropriate as it may be the responsibility of only one entity to install more UFLS.</p> <p>Thank you for the opportunity to comment on this well-thought out Draft Standard.</p>
SDT Response	<p>"Special Protection Schemes" will be covered in a different standard.</p> <p>R2 and R7 have been revised.</p>
City, Water & Light	<p>Each Generator Owner shall verify that their generating unit(s) will not trip during low frequency conditions above levels as listed in R1. Instead, CWL requests that registered entities shall verify that UFLS relays and generator protection equipment have been set to the levels identified in R1.2 and tested in accordance with applicable standards.</p> <p>SDT Response: The intent of R2. in the SPP UFLS standard is that all generator frequency trip set-points be set below 58.7 Hz (and</p>

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	<p>we should simply state this in the standard to clarify the intent although we might want to set the threshold at 58.5 Hz) to ensure needed generation does not trip while the automatic load shedding program is attempting to arrest the frequency decline caused by lack of generation resources (more load than available generation). There is also a NERC SDT working on PRC-024 which is a Generator Verification standard. Their work is attempting to define an envelope within which "most" generators should be able to safely operate during both frequency and voltage excursions. The NERC UFLS SDT, SPP UFLS SDT and the NERC PRC-024 SDT are all working to coordinate their activities such that there are no conflicts. The SPP SDT appreciates the comment and is considering revising the language of R2 to more clearly state this requirement.</p> <p>CWL maintains that SPA, as the Balancing Authority, is the most likely Planning Coordinator for this transmission region.</p> <p>SDT Response: SPP is the Planning Coordinator for the entire SPP Footprint by definition.</p> <p>CWL requests a provision to allow for exceptions to noncompliance during times of emergency conditions such as loss of load during an ice storm or similar event. Also, CWL requests a provision to allow for exceptions to noncompliance during emergency or scheduled maintenance activities that result in the outage of UFLS relay equipment. Please see comments in number 3 above.</p> <p>SDT Response: The intent of the SPP SDT is to transition from an operational based standard to a planning based standard. The previous operational based standard required that the steps be met any time (24 hours a day every day), regardless of time of year, circuit configuration, planned outages, etc. The new planning based approach is intended to require an entity to certify that the implemented load shedding steps are met at the forecasted peak. This will be the only "test" of an entities implementation from a compliance perspective. The belief is that even when the system is not operating at peak, the circuits involved in the shedding still make up essentially the same proportion of the total system load as they do at peak and therefore essentially the same percentages of the existing total load will be shed if an event occurs.</p>
Golden Spread	<p>R4 states "Documentation shall include relay operational data and any associated event analyzing data from such devices such as fault, disturbance, or long term trend recorders associated with the UFLS event". Does this require a DP to install a fault recorder, disturbance recorder, or long term trend recorder? If not, GS would propose clarifying this with language such as "... and IF AVAILABLE any associated event analyzing data...".</p>
SDT Response	R4 has been removed.
KCPL	<ul style="list-style-type: none"> • What does the reference to the NERC national standard in R5.2 add to the requirement? The requirement is sufficient in requiring a technical assessment of the UFLS effectiveness and the assessments should be done every 5 years or when significant changes dictate without the reference. This makes the document more manageable if the reference ever where to change. Recommend the SDT consider being specific regarding what is "significant changes" since "significant changes" is subject to interpretation. <p>SDT Response: Rather than reference the NERC standard that is not yet approved, propose changing R5.2 to include the performance characteristics from the NERC standard. "Significant changes" are those changes to the system that in the opinion of the Planning Coordinator could affect the ability of the UFLS program to meet the requirements of R5.2.</p> <ul style="list-style-type: none"> • Suggest the SDT consider an increase in the range of load shedding required in R1.2 in step 2 to 20 to 30% to make the range a straight line progression through the three steps, i.e. 5% - 10% - 15%. Step 2 at 20% to 25% may be too tight a range to accommodate the whole load

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spectrum.

SDT Response: The load percentage range for the first two steps have been increased.

- Recommend the SDT consider making it clear in R2 generators are not trip for frequencies 58.7 Hz and greater. The current language is a little confusing. Also recommend changing “verify” to “verify relay settings”. Verify by itself could imply actual testing or other means that would be difficult to obtain or harmful to the operation of the generator in obtaining.

SDT Response: R2 wording has been changed to make it clearer about verifying the relay settings.

- R4.3 should be the responsibility of the Planning Coordinator or the Reliability Coordinator to determine root causes and contributing factors for a UFLS event. It is possible operating entities involved in an underfrequency event would not know the circumstances of the event. Consider those operating entities involved with the 2003 blackout that were a casualty of the event, but not the cause of the event. The way this is proposed, they would have to respond to what caused the event and they would not be in a position to do so. Recommend the SDT consider separating this as its own requirement and directed to the Planning Coordinator or the Reliability Coordinator.

SDT Response: R4 has been removed.

- What is the difference between “credible island” and “appropriate” in requirements R2.2, R6 & R7? How would “credible islands” be determined if not by design? Suggest the SDT consider replacing “credible island” with language that is specific to studying and applying islands by design that may be proposed by operating entities for consideration by the Planning Coordinator.

SDT Response: R2.2 has been removed from the draft. During actual UFLS events in the SPP area some islands have occurred. R6 and R7 are intended provide a way for the Planning Coordinator to include these islands in the system study.

- “Reliability Entity” is not a NERC defined term in R7. If the reference is intended to be the Planning Coordinator then it is recommended the SDT use that. If that is not the case, the SDT should use defined terms.

SDT Response: “Reliability Entity” has been removed from the draft.

- R8 reads more like a statement than a requirement. Suggest the SDT consider adding a requirement to R4 requiring operating entities to submit all data to the Planning Coordinator if R4 does not already require that and remove R8.

SDT Response: R8 has been removed from the draft.

- Recommend the SDT consider changing the compliance monitor reference from “Southwest Power Pool” to “Regional Entity”. This would be more in line with Reliability Standard language.

SDT Response: Thank you for the comment. This change has been made.

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KEPCO	<p>Section 4.3 The proposed standard applies to LSEs with > 25 MW load. NERC registration criteria for an LSE states an LSE “peak load is > 25 MW and is directly connected to the bulk power (>100 kV) system”. KEPCo recommends inclusion of the connectivity qualifier in the SPP reliability standard.</p> <p>Section 4.4 The proposed standard applies to generator owners with “an aggregate nameplate rating of 10 MVA or greater”. KEPCo recommends the NERC limits of 20 MVA for a single unit or an aggregate rating of 75 MVA. Section 4.4.1 still grants SPP the right to include other Generator Owners if the generating unit(s) is deemed crucial to reliability, in addition to the NERC registration criteria granting SPP that authority.</p> <p>Section R1.1 Add a second sentence “In a collective implementation by mutual agreement of a single automatic UFLS program, the 30 percent value applies to the aggregate total load in the program.” A Transmission Owner often does not trace load ownership for UFLS calculations, and the UFLS performance isn’t dependent on each entity in a collective UFLS program sharing equal percentages of load. If members of the collective want equal percentages, they can address that in their agreement.</p> <p>Section R3 This Requirement (to maintain UFLS data) applies to each entity listed in the Applicability Section. However, Requirement 1 allows for the collective implementation by mutual agreement of a single automatic UFLS program. In the first sentence, after the words Applicability Section, please insert “, or the designated entity for a collectively implemented UFLS program,”</p> <p>Section R4 This Requirement (to maintain UFLS operations info) applies to each entity listed in the Applicability Section. However, Requirement 1 allows for the collective implementation by mutual agreement of a single automatic UFLS program. In the first sentence, after the words Generator Owner, please insert “, or the designated entity for a collectively implemented UFLS program,”</p> <p>Section M1 Measure 1 deals with maintaining documentation that the UFLS scheme meets performance requirements and applies to each entity listed in the Applicability Section. However, Requirement 1 allows for the collective implementation by mutual agreement of a single automatic UFLS program. In the first sentence, after the words “their facilities”, please insert “, or the designated entity for a collectively implemented UFLS program,”</p> <p>Section M3 Measure 3 deals with maintaining documentation of UFLS scheme program details and applies to each entity listed in the Applicability Section. However, Requirement 1 allows for the collective implementation by mutual agreement of a single automatic UFLS program. In the first sentence, after the words Generator Owner, please insert “, or the designated entity for a collectively implemented UFLS program,”</p> <p>Section M4 Measure 4 deals with maintaining documentation of UFLS scheme events and applies to each entity listed in the Applicability Section. However, Requirement 1 allows for the collective implementation by mutual agreement of a single automatic UFLS program. In the first sentence, after the words Generator Owner, please insert “, or the designated entity for a collectively implemented UFLS program,”</p>
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<p>SDT Response</p>	<p>Section 4.3 This comment should be addressed with the new wording of section 4. “Distribution providers and any supplier with end-use load not registered as a Distribution Provider determined by the Regional Entity to have material impact on the Bulk Electric System,” shall be included in the Applicability section.</p> <p>Section 4.4 This comment should be addressed with the new wording of section 4. “Generator Owners and any owners of generation not registered as a Generator Owner determined by the Regional Entity to have a material impact on the Bulk Electric System,” shall be included in the Applicability section. Small Generators may have a material impact on the Bulk Electric System.</p> <p>Section R1.1 R1 discusses the option to “participate with one or more...To collectively implement by mutual agreement...” This comment should be addressed in R1 and further clarified with new wording.</p> <p>Section R3,R4,M1,M2,M3 These comments are valid and should be inserted or covered in Draft 2. (Note: All deal with the same issue in different sections of the Standard.)</p>
<p>Nebraska Public Power District</p>	<p>I didn't have any issues with the proposed philosophical changes. I had more issues with the language and that it was not very clear in some cases what was required.</p> <p>In R2, specify the frequency above which generators should not trip. There are 4 different frequencies listed in R1, which applies? Is it 59.3, 59.0, 58.7 or 58.5 Hz? You can argue that the generator should not trip above 58.7 Hz. There should be some time delay in the trip point to permit the UFLS to arrest frequency decline. If an islanding scheme expects the generator to be available to work, the unit probably shouldn't trip above 58.5 Hz.</p> <p>SDT Response: Thank you for your comment. The SPP SDT agrees we should specify the exact frequency in which the generator should not trip at. The intent of R2 in the SPP UFLS standard is that all generator frequency trip set-points be set below 58.5 Hz to ensure needed generation does not trip while the automatic load shedding program is attempting to arrest the frequency decline. NERC UFLS SDT is working on a UFLS Continent Wide Standard which will require the Planning Coordinator to model all generator trip set-points that trip at or above 58.0 Hz. Simulated studies may reveal additional requirements for generator trip set-points between 58.0 and 58.5 Hz. The SPP SDT has revised the language of R2 to more clearly state this requirement.</p> <p>R2.1 is not clear. I think what they are trying to say is that if you shed load to meet the R2 requirement, you need to shed at least as much load as the generator is generating at the same time the generator trips. Not sure what the last sentence about the non-dispatch generators means. Not sure that generator underfrequency protection is the same as UFLS.</p> <p>SDT Response: Thank you for your comment. The SPP SDT has revised requirement R2.1</p> <p>In R3, shouldn't the data be reported if it changes as well?</p> <p>SDT Response: Thank you for your comment. The data submitted for R3 is only data required for the 5 year study. The</p>

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	<p>requirement allows the Planning Coordinator the ability to request UFLS data when the system changes or every five years to model the system. For example the system will change when Nebraska joins the SPP. The Planning Coordinator will be allowed to request UFLS data and model the system at that time.</p> <p>In R4, I believe the standard should address events where the UFLS operated as expected. I believe events where the UFLS either operated when it should not have or didn't operate when it should have should also be investigated. Not sure I see that requirement.</p> <p>In addition, there are a number of places in the Standard that state "Entities that participate with other Distribution Providers, Load-Serving Entities, or Transmission Owners by mutual agreement shall designate and report to the Planning Coordinator a single entity responsible for documentation of the UFLS event." This statement is not real clear. I think they want a single entity responsible for reporting for the combined group, but it is not worded very well.</p> <p>In R4.2.1, this is not very descriptive. What is the Electrical overview of system? Are they looking for generator outputs, power flows, outages, or what?</p> <p>SDT Response: Thank you for your comment. R4 has been removed.</p> <p>For R4.5, if the UFLS operated as expected, would there be any corrective actions?</p> <p>R6 appears to identify islands that may be what the rest of the standard refers to as "credible islands". If that is the case, it should state that these islands are credible islands. If not, the term should be defined somewhere in the standard.</p> <p>SDT Response: Thank you for your comment. 'Credible Islands' has been defined in the Definition section of the Standard.</p>
Occidental	<p>As currently written, if a generator is unable to or otherwise does not meet its under frequency requirement their additional need could be tacked on to the existing requirement on Loads in the area without penalty or effort on behalf of the generator.</p> <p>For example, if IPP ABC, owning a 500 MW combined cycle plant, fails to meet its under frequency requirement, the Loads existing on IOU XYZ's system could be involuntarily subjected to providing an extra 500 MW of under frequency relaying. This should not be the case. At a minimum if IPP ABC has not followed the rules then IPP ABC should be required to seek out Loads to voluntarily provide this service at some compensation level acceptable to those Loads.</p> <p>In no event should a Load be involuntarily placed on a UFLS in order to cover for a generator who has not followed the rules. Otherwise there is a disincentive for generators to properly maintain their own under frequency control systems, since they could inappropriately shift the cost and responsibility onto others by simply not maintaining or installing their own systems.</p>
SDT Response	The Standard Drafting Team agrees. R2 has been revised.
OMPA	<p>In addition to generator sizing concerns, the proposed SPP standard does not address controlling voltage during UFLS relay operations and the possible frequency overshoot condition. The proposed NERC PRC-006-01 standard describes these situations and the allowable limits.</p>

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SDT Response	The SDT will discuss adding this to the SPP UFLS standard.
SPRM	It is unclear if R1.1. requires entities to shed 30% of forecasted peak load on a 24/7/365 basis. If it is just for peak hour only, then it needs to state that. Suggested changes below.
SDT Response	The intent is for the entity's installed UFLS equipment to be designed to shed the prescribed percentages of the forecasted peak load at the prescribed frequency steps. There is no requirement for an anytime "test". Several other similar comments have been received and the SDT appreciates your comment and proposed language modification. It is clear from the number of similar comments that this point needs clarification.
SPP RE	The Risk Factor, compliance Monitoring Process, Violation Severity Levels and Implementation Plan sections need to be completed. Please involve Ron Ciesiel, SPP RE Executive Director of Compliance and Enforcement, in the working group efforts to draft these sections.
SPS	<p>The table in R1.2 provides the requirement for minimum and maximum load relief at the various steps. This table, which matches the requirement in Section 7.3 of the SPP Criteria, shows for the second step that the minimum load relief shall be 20% with the maximum load relief of 25%. For the other steps, the maximum load relief is 50% higher than the minimum, but at the second step, the maximum load relief is only 25% higher than the minimum. This seems to require a much more accurate prediction of the load relief for those circuits include in this step. SPS would like to propose that for the second step, the maximum load relief be changed from 25% to 30%, to allow the same level of predictability as allowed in the other steps.</p> <p>In addition, consideration will need to be given to the complications that arise from the implementation of SmartGrid technology to insure that the UFLS program meets the UFLS standard.</p>
SDT Response	The table in R1.2 has been revised.
SWPA (Gary Cox)	<ol style="list-style-type: none"> 1. How should the DP/LSE/TO with automatic load shedding capability respond to industrial loads on UFLS circuits that may come off line for maintenance periodically, or are variable in nature? Also, this could apply to outages for maintenance or forced outages, as well; and may skew the UFLS dropping levels. 2. Need clarification on the language referring to UFLS being based on a Percentage of Forecasted Peak Native Load. If peak native load is forecasted to be 80MW, and during shoulder months they are at 30MW, won't this result in under tripping, or are they required to trip everything? Is this a moving target, where UFLS has to be continually changed? 3. Clarify "mutual agreement". Is this a written agreement?
SDT Response	<p>The intent of the 30% forecasted load requirement is to eliminate the current SPP criteria of 30% load at any given time. The drafting team understands that load profiles for different entities will vary and during the shoulder months of the year, an appropriate amount of load close to 30% for that time of the year will be shed, not the forecasted value. If a circuit is set up to trip for UFLS, the entity will not have to change to another circuit during circuit maintenance because the standard is for forecasted load.</p> <p>Yes, a mutual agreement should be written.</p>

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<p>SWPA (Mike Wech)</p>	<p>For Requirement 1: R1. Each Distribution Provider, LSE, and Transmission Owner with end-use Load customer(s) connected to their facilities shall implement an automatic UFLS program or shall participate with one or more Distribution Providers, LSE's, and Transmission Owners with end-use Load customer(s) connected to their facilities to collectively implement by mutual agreement a single automatic UFLS program. Entities that participate with other Distribution Providers, LSE's, or Transmission Owners by mutual agreement may designate and report to SPP a single entity responsible for compliance reporting purposes.</p> <p>After reading above...If several entities make up a UFLS program and they decide the host BA is the entity responsible for reporting, who is ultimately accountable/responsible for compliance with the single automatic UFLS program? Is each entity responsible? Is the reporting entity? There is no clear language that states who is ultimately responsible for R1. In order to make this truly enforceable, there needs to be clear definition of the responsibilities within the requirements.</p> <p>For Requirement 1.1 R1.1. Have the capability of automatically shedding at least 30 percent of forecasted peak native load for the upcoming year.</p> <p>I have some concerns that entities that participate jointly in an overall program may have trouble meeting this amount at all times due to the following type of scenario: A municipality has 50 MW of load that they shed at 59.3 HZ on a UFLS distribution feeder. They are doing maintenance work on this feeder and 30 MW of the load is transferred to another feeder that does not have UFLS. If an event occurs, they, nor the overall UFLS program are not going to shed enough load in that particular step. Are they non complaint since they were performing maintenance work and had load transferred off the feeder with UFLS relays? Specifically, who in the joint UFLS program in this case is non compliant? Is the whole group of mutual participants in the UFLS program non compliant?</p>
<p>SDT Response</p>	<p>R1 will be revised to make it clear which entities are responsible for reporting.</p> <p>R1.1 The intent of the 30% forecasted load requirement is to eliminate the current SPP criteria of 30% load at any given time. The drafting team understands that load profiles for different entities will vary and during the shoulder months of the year, an appropriate amount of load close to 30% for that time of the year will be shed, not the forecasted value. If a circuit is set up to trip for UFLS, the entity will not have to change to another circuit during circuit maintenance because the standard is for forecasted load.</p>

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Revised Regional Standard Language:

Organization	Comments:
AECC	See additional comments
AEP	<p>R2 would be much clearer if a table or matrix be provided to identify responses to various operating conditions.</p> <p>R3 includes five entities and nine types of UFLS data. No one entity could provide all of this data, so it would be much clearer and successful to identify which entity provides which types of UFLS data.</p> <p>We suggest that an additional sub-requirement be added to follow R3.5 that would add "Breaker Operating Time" to the list of UFLS data.</p> <p>R4 should be entirely be deleted as the expectations are clearly included in the NERC Rules of Procedure.</p> <p>R7: Please add ". . . identified in areas of credible island, as identified in R6, shall participate . . ." Also, the expression "credible islanding" should be explained or introduced as a new term with a NERC definition.</p> <p>Additional Requirements and Measures necessary to support SDT's determinations from the issues posed in the "Additional Comments" section.</p>
Lafayette Utilities System	<p>4. Applicability</p> <p>4.1 Transmission Owners 4.2 Distribution Providers 4.3 Load-Serving Entities 4.4 Generator Owners 4.5 Planning Coordinators 4.6 Transmission Planner</p>
Occidental	<p>R2. Each Generator Owner shall verify their generating unit(s) will not trip during low frequency conditions above levels as listed in R1. Should this not be practical due to the operating characteristics of certain units, the Generator Owner may become compliant by arranging for Load shedding to be installed by mutual agreement between the end-use Load customer(s) to provide the Load shedding. The Distribution provider, Load-Serving Entity, or Transmission Owner to whom the identified end-use Load customer is connected shall include the identified end-use Load customer(s) in its own UFLS, in addition to the required Load shedding as listed in R1.</p>
SPRM	<p>R1.1. Have the capability of automatically shedding at least 30 percent of forecasted peak native load for the current year during the forecasted peak hour.</p>
SPS	<p>SPS would like to propose inserting the word "system" to the term "native load" (so that it reads "native system load") wherever this phrase is used. This would include R1.1, the table in R1.2, R1.3 and R3.6. The intent of this change would be to make it clear that the forecast should be based on the system coincident peak, not the individual, non-coincident peak forecasts.</p>

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Comments

Of

Ronnie Frizzell

Arkansas Electric Coop. Corp.

On

SPP UFLS Regional Reliability Standard

PRC-006-1-SPP

Overall

- 1.** Is this standard being written to comply with PRC-006-0 or the proposed PRC-006-1? If the intent is to have a SPP standard approved in any way by SPP, NERC or FERC PRIOR to FERC approval of PRC-006-1 then the SPP standard must be developed based on the existing FERC approved NERC Reliability Standard PRC-006-0.
- 2.** There are some serious questions about PRC-006-1 being proposed at NERC. It is premature for SPP to develop a standard based on PRC-006-1.
- 3.** The SPP standard should be written in a manner that if an entity is compliant with the SPP standard then it is also compliant with the NERC standard governing it. The standard in its current form does not accomplish this. It does not conform with nor does it include nor address many of the requirements in NERC PRC-006-1. It is clear that PRC-006-1 is moving in a different direction than the old programs such as the one outlined in SPP Criteria 7.3. If the intent of the drafting team is to design the SPP standard in accordance with PRC-006-1 then the proposed draft misses the mark.
 - a.** The SPP standard does not address how the “group of Planning Coordinators” and their associated responsibilities as required in requirements R1 through R7 of PRC-006-1 will be accomplished.
- 4.** A mapping document should be developed to show how each of the requirements in the NERC standards are being addressed in the SPP standard.
- 5.** It is not clear which of the NERC standards, PRC-006-0 or PRC-006-1, the drafting team is using as a basis for the development of the SPP standard therefore it is very difficult to provide comments.
- 6.** In many place the standard is overly wordy. Elaborate phrases are used where simple would be better.

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7. There are portions of the standard that would be better if written in an application manual and not part of a standard.
8. Any reference to the “Planning Coordinator” should mean the “group of Planning Coordinators” as called for in PRC-006-1 and not individual Planning Coordinators. This group should be formed at SPP and have responsibility for developing documentation to define and explain how the SPP standard will be implemented, monitored, and compliance measured.

Number

9. Is the numbering scheme correct? I was under the impression that all NERC Standards version numbers come before the region. The NERC standard is PRC-006-0 shouldn't the correct numbering be PRC-006-0-SPP-0?
 - a. The NERC standards begin with a version 0. SPP should do the same. By beginning with version 1 it implies that there is an earlier version and is inconsistent with the NERC numbering convention.

Purpose

10. It is suggested that the purpose should be the same as the purpose of the NERC RS PRC-006-0 or PRC-006-1. The proposed purpose is too wordy and includes some phrases that are not appropriate
 - a. The phrase “Provide an adequate level of reliability...” is setting the standard up for a goal that the standard alone can not obtain. UFLS will contribute to improved reliability but will not in itself provide “an adequate level” of reliability.
 - b. “in accordance with a NERC UFLS Continent Wide Reliability Standard” should simple be stated “in accordance with NERC PRC-006-1”. Again the question of which NERC standard the SPP standard is being developed to follow is unclear since PRC-006-1 has not yet been developed and approved.

Applicability

11. The SPP standard does not apply to the proper entities. The current applicable NERC standard PRC-007-0 applies to Transmission Owners (TO), Transmission Operators (TOP), Distribution Providers (DP), and Load Serving Entities (LSE) which are “required by its Regional Reliability Organization to own a UFLS program”. The proposed NERC standard PRC-006-1 would apply to Planning Coordinators (PC), DP, and TOs with end use load.
 - a. R1 of NERC PRC-006-1 states that “Each Planning Coordinator shall join a group consisting of all the Planning Coordinators within the region for each of the regions in which it performs the Planning Coordinator function.” The SPP standard should not apply to the Planning Coordinator but rather apply to the “group” that will be formed at SPP. This group is one that should be responsible for the PC requirements listed in the standard. The first requirement of the standard should spell out the details and responsibilities of the “group”.

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- i. While the responsibility for development of a UFLS plan should lie with the LSE or DP, the “group” should be the ones responsible for any coordination of plans within and with other regions and ensuring that the SPP program is consistent with the programs of other regions.
- b. The SPP standard shouldn’t apply to a Transmission Planner (TP). The TP is not involved in the development of the plan in PRC-006-0, PRC-007-0 or PRC-006-1. The SPP standard does not contain any requirements applicable to a TP. An entity reporting to the TP does not make the TP an applicable entity.
- c. There are no requirements in the NERC PRC-006-0, PRC-007-0 or PRC-006-1 which include the GO. PRC-006-1 purpose is “To establish design and documentation requirements for the automatic underfrequency load shedding (UFLS) programs...”. Since the standard is written for load shed NOT generation shedding the standard shouldn’t apply to Generator Owners. They have no load or the authority over any load.
- d. The SPP Standard does not define who within the TO function is required to have an UFLS. The definition used in PRC-006-1 is a good start. Those TOs with ties between Balancing Authorities (BA) that are required to have a UFLS should be added.
- e. The TOP is included in PRC-007-0 but are left out of the SPP standard completely. Are there any TOPs required to have an UFLS? If so TOPs should be included.
- f. If the standard is to apply to LSEs then it should apply to ALL LSEs. The SPP program should be designed in such a manner as ALL LSEs can share equally the burden of load shedding.

12. One place the NERC PRC-0006-1 and SPP standard are completely missing the mark is that the LSE is not included. In many cases the LSE is the one that will own the relaying and have the responsibility for shedding load. By leaving them out the burden is placed on the DP which may or may not have anything to do with the actual shedding of the load.

13. 4.2.1 and 4.4.1 contain the phrase “may be required to register”. The SPP standard has no authority to require an entity to register for anything and these sections should be removed. The Functional Model defines an entity responsible for a given function and any entity falling into that definition already has the obligation to register with NERC. The SPP standard exceeds its bounds by attempting to redefine who should register with NERC. The one thing the standard should do is make it clear WHICH registered entities within the entity registration should be required to have an UFLS. In other words, which DPs out of all of the DPs are required to have an UFLS? This is consistent with the applicability section of PRC-007-0.

- a. The decision of who should register does not lie with the PCs or TPs for the same reasons stated above
- b. One place where the standard misses the mark is that the standard should define how the “group” and not the PC or TP will determine which loads are crucial and “crucial” should be defined.

14. The definition of which DPs should have an UFLS is as simple as the definition for a LSE found in section 4.3.

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15. If the standard is to apply to GOs it should simply apply to ALL GOs with an installed capacity in the same manner as R6.4.1 and R6.4.2 of PRC-0006-1.

Requirements

16. R1 should simply state that a DP, LSE, or TO required to have a UFLS will implement an automatic UFLS program and the program will include the following (R1.1 – R1.6). All of the other verbiage is either irrelevant here or needs to be put in a separate requirement.

17. R1 If the intent is to allow the aggregation of load from multiple entities into a single plan then simply state it in a separate requirement that such arrangements are permissible and provide guidance into what the agreement should contain.

a. If the above is the intent then it should be a requirement that there be a written agreement to that affect signed by the officers of the companies involved. At a minimum this agreement should spell out the party which will be responsible for meeting all the responsibilities identified in the standard. The agreement could follow the same joint or delegation agreements that companies have for meeting other NERC standards.

18. R1 Concerning the phrase “with end-use Load customer(s) connected to their facilities”. Is the word “their” referring to the TO or the DP, LSE, and TO as a group? If who is responsible for having an UFLS is well defined in the applicability section there is no need to repeat it here or elsewhere in the standard.

19. R1 states “... shall implement an automatic UFLS program ...”. There is no requirement that a plan or program be developed. The word “develop” needs to be included.

20. R1 should be rewritten to say: “The DP, LSE, or TO shall develop and implement an automatic UFLS plan and such plan shall include the following:”. As written R1 directs the DP, LSE, and TO to implement a “program”. The word “program” should be “plan”. The “group” that will be formed at SPP is the one that should be required to have a program. The DP, LSE, and TO should be required to develop and implement a plan that meets the requirements of the SPP program.

21. R1.1 The design level of the plan is critical and the phrase “forecasted peak native load for the current year” causes some concern.

a. By using the “current year”, this could cause a problem with meeting compliance. Basing a plan on a current year forecast may not provide time for implementation of that plan before the current year peak period. This would require that a plan be based on the “current year” of a forecast that may have been done in the previous year. The use of an older forecast might not capture current load trends or topology changes. It is suggested that the drafting team consider plan development based on a “next year out” basis. This would mean

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that during the current year the entity would be taking a forward look, have time to make adjustments and not be forced into using dated information.

b. The term “peak native load” does not clearly state the target load for which the plan should be developed and needs further definition. It is suggested that the definition once developed should be included in the standard in a similar manner in which definitions specific to standards are included in the NERC standards.

i. What is meant by peak? Summer? Winter? One hour? Average?

ii. What is meant by native? Firm? Firm+Non-firm? All load responsibility at the time of the peak?

22. R1.2 The establishment of windows is not consistent with the requirements of PRC-006-1 and puts some companies in an impossible position to meet compliance. By establishing windows the SPP standard will violate PRC-006-1 which calls for the regional program to have “consistent application across the region”. Consistent application implies that what is designed is also consistent in being attainable. The standard with windows is unattainable because it has created an impossible position for some to be able to meet compliance. The impossible position is due to factors such as the load mix and/or the amount of load versus the availability of sites for locating relaying which put some LSEs especially smaller LSEs in a position where either the minimum or the maximum can be met but not both. AECC has in the past adamantly opposed to use of maximum accumulated load limits in steps 1 and 2. AECC has argued and repeatedly shown that with the AECC load mix these limitations can not be met. SPP must realize the impact the creation of these narrow windows will place on ALL registered entities impacted by this standard especially small LSEs and LSEs with a special loads. If such windows are approved the drafting team is setting up a situation where some companies will be forced to ask for a waiver.

a. The SPP program should not impose a requirement that would require an entity to shed more load on a percentage basis than another entity in order to meet the requirements imposed by these windows. In AECC’s case it has been suggested that AECC shed more than 30% of its load in order to meet the window requirements of steps 1 and 2. It has been suggested that AECC design its plan in a manner that 30% of its non special load be shed in addition to the special loads. This is unfair, discriminatory, and should not be allowed.

b. The concern that too much load could be shed creating an over generation condition is not valid when you consider that the program is designed to eliminate such a condition by shedding load in 3 steps of 10% each.

c. AECC does not oppose an upper limit in step 3.

SDT Response: This Issue of Upper Limits was identified when the Drafting team began in 2008. Historically, the upper windows for step 1 and step 2 were added to the SPP Criteria around 2001 when wording was added to clarify “peak” in calculating the load shedding percentage. The windows for step 1 and step 2 were added in 2001 in an attempt to make the “at any given time peak” more flexible. In 2008 this subject was again discussed with the drafting team and left in the new standard.

The Power tech study looked at 15% over shedding with 30% Gen Loss and found over-freq acceptable and no Generation tripping due to over-speed. This supports the upper limit in step 3 which AECC does not oppose.

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This Comment was further discussed and the upper limits for Step 1 and Step 2 have been raised in the 2nd draft.

23. R1.3 Anywhere the DP, LSE, or TO are referred to it should be clear that it is the DP, LSE, or TO that is responsible for having a UFLS. Not all DPs, LSEs and TOs or other entities may be required to have an UFLS. This caveat should be added after each reference throughout the doc.

24. R1.3 is not clear on what is being asked.

- a. What is meant by “certify”? Is this a self-certification?
- b. By “SPP region” do you mean the SPP Reliability Entity? Who specifically at SPP?
- c. Does the drafting team want a certification of the percent of load which is planned or actually under automatic control?
- d. The term “expects to automatically shed” should be “expects to have available for automatic load shed”. It is not expected to actually shed load rather have load available to be shed.
- e. By making the certification by April 1st implies that the intent is that the SPP program and all entities plans be based on the summer peak. If so, this should be clearly stated in the definition of “peak native load”.
- f. If the intent is to allow each entity to plan their program around their individual peak then April 1 doesn’t work for winter peaking entities. Perhaps two certification dates are needed based on the entities peak. Summer peaking entities could report by April 1 and winter peaking entities by September 1.
- g. Suggested rewording of R1.3: Each DP, LSE, or TO required to have an UFLS will self certify to the SPP Reliability Entity the percentage of forecasted load it has planned to be available under UF relay control for their current year peak. Summer peaking entities will report by April 1 and winter peaking entities by September 1 of each year.

25. R1.6 The requirement does not state to whom it applies. PRC-006-1 R5 places the responsibility for determining islands with the “group of Planning Coordinators”. PRC-006-0 puts the requirement on the region. In the requirements that should spell out the organization of the “group of Planning Coordinators” and their functions is where this requirement should go.

- a. A DP, LSE, or TO does not have authority over tie lines. Only a TO would have relays on a tie line and those would probably be put there at the direction of a Balancing Authority or Transmission Operator. This requirement applies to the “group of Planning Coordinators” under PRC-006-1 and should not apply to DP, LSE, or TO.
- b. A Balancing Authority or a Transmission Operator is the one which deals with tie lines and their operation. This information would be crucial in the determination of islands. The standard however, does not apply to a BA or TOP by requiring their input or participation in determining islands. This is an oversight that needs to be included in the requirements which explain how the “group” will determine islands and not be a part of R1.

26. R2 The only requirement applicable to a GO is that it will ensure the under-frequency relays for their units be set to trip below the threshold frequency of XX Hz.

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a. The frequency threshold whereby a generator will not trip needs to be defined in Hz and not be left subjective. How will the GO know if their unit will fail to meet R2 if a set frequency is not given? The threshold should be something below the frequency threshold for islanding, which is not defined either.

27. R2 Requiring GOs to contract with DPs or LSEs for load shed goes above and beyond what should be required in this standard. A standard should not require contractual agreements be entered into by an entity in order to meet compliance. How an entity chooses to meet compliance is the entities choice and should not be dictated. In addition, the LSE should not be obligated by a requirement to shed additional load in order to meet a requirement which applies to a generator. The LSE has met its obligation in requirement R1 and should not be burdened by shedding additional load. Again, the only requirement applicable to a GO is that it will ensure the under-frequency relays for their units be set to trip below the threshold frequency of XX Hz.

a. If there is a problem with a particular generator then that is the generators problem. If it can't be fixed then the generator should file for an exemption, the "group" study the impact and adjust accordingly

28. R2.1 It is unclear what is trying to be accomplished by this requirement. It does not make sense. Further explanation or clarification is needed.

a. Since generator dispatch is constantly changing the only way a generator could meet compliance is to have an amount of load shed equal to the generators total Mw output. This is unreasonable.

b. What does the "amount of generation interrupted by UFLS" for a non-dispatched generator mean? The amount of generation interrupted by UFLS will be the entire generator so the previous comment applies.

29. R3 should simply state that each DPs and LSEs plan will be updated at least every 5 years.

a. The words "listed in Applicability Section" should be removed. If the entities that the requirements apply to are properly defined then this wording is not needed.

b. The sub-requirements R3.1 to R3.9 should be included under either R1 or R5.

c. The data should be supplied to the "group of Planning Coordinators" not a single Planning Coordinator.

30. R3.1 to R3.9

a. R3.3 The device identification is of no value when you know the location. The "group" should only be interested in the clearing time of the device and that is not asked for.

b. R3.5 What is meant by the "Total Time Delay of each UFLS relay scheme"? Is this an overall design value which includes the intentional and unintentional relay delay or something else? If the intent is to get to the total delay from detection to clearing then the wording needs additional work and clarification.

i. "Total Time Delay" being capitalized implies a defined term. What is the definition?

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c. R3.6 The requirement uses the term “Forecasted peak native load” which is inconsistent with the term “peak native load for the current year” used in R1.1. See previous comments concerning the definition of “peak native load”.

d. R3.7 Again is the intent to get the total delay from detection to clearing?

e. R3.8 “Tie Line” as defined by NERC means a line between two Balancing Authorities. If this is the intent the only entity this requirement would apply to would be a TO who happens to own a Tie Line which is part of a UFLS scheme. The requirement should be made specific to those TOs. The DP, LSE, and GO are not involved in tie lines and will not have this information. If this is not the intent then “tie line” should be changed or defined. This requirement should be moved to the area dealing with Islanding.

f. R3.9 The same comment as for R3.8. The DP, LSE, and GO are not involved in Islanding schemes. This requirement should be move to the area dealing with Islanding.

31. R4 The TO, DP, GO AND LSE should be required to investigate and document events. The analysis of UF events requires the capability to run dynamic simulations which many TO, DP, and GO do not have or have the expertise to do. The “group of Planning Coordinators” should be the ones performing analysis. PRC-006-1 does not state who is responsible for analysis but by making the “group” responsible for developing and maintaining the database it implies that the analysis is beyond the capability of a single TO, DP, GO, or LSE. The TO, DP, GO, and LSE can not be expected to provide information concerning the configuration and operation of the system which is only known to the TOP or BA. R4 should be rewritten to say: Each TO, DP, GO, and LSE shall investigate and document UF events.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

32. R4 The documentation required by R4 should be that documentation the entity developed and is capable of providing as a result of their investigation. Much of what is being required deals with analysis of an event and is beyond what the TO, DP, GO or LSE can provide. The sub-requirements of R4 should be re-written to identify and include the things that a TO, DP, GO, or LSE are capable of providing. Details are included in later comments on sub-requirements R4.1 to R4.5.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

33. R4 Define “event”

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

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34. R4 The wording “...that occur below the initiating set point of their UFLS program” should be removed. It is not an event unless this happens. If the drafting team wants this included then put it in a definition of “event”.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

35. R4 Each “shall” in R4 should be made a separate requirement. Shall investigate and document. Documentation shall include. Documentation shall be provided. These should all be separate requirements.

a. The documentation that will be required needs to be specific. Terms like “operational data” and “event analysis data” should be defined if there is going to be a requirement to provide it.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

36. R4 The second paragraph is problematic and should be removed.

a. Designating a single entity could create communication and data handling issues. Getting the data from anyone except by first hand will cause problems. The owner of the device which operated should be the one that directly reports to the “group”.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

b. This paragraph also defeats the benefit of groups working together. An entity may not be comfortable or unwilling to coordinate for others or an entity may be unwilling to let another entity act on its behalf. It is already required that events be reported. The entity that had the event should be the one doing the reporting.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

37. R4 By stating “The documentation shall include:” puts the TO, DP, GO, and LSE in an impossible situation for meeting compliance because much of the information being asked for in R4.1 to R4.5 is unavailable to the TO, DP, GO, or LSE and the “shall include” means the reporter has no option but to include something.

a. It is suggested that the statement be changed to say: The TO, DP, GO, or LSE shall provide available documentation including:

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SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

b. R4.1 to R4.5 describes what should be included in an event analysis. While the TO, DP, GO, and LSE can contribute, event analysis should be left to the “group”. The TO, DP, GO and LSE should be able to provide a summary of what was found (R4.1), data concerning their relaying and its operation (R4.4), and corrective actions (R4.5) for events or portions of events that involve their UF relays and schemes. R4.2 and R4.3 require information that is beyond what the TO, DP, GO, and LSE can provide and these entities should not be responsible for R4.3 and R4.3.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

c. 4.2 The TO, DP, GO and LSE will not have this information. Only a TOP or BA will have information about the pre-disturbance system conditions. This should not be required of a TO, DP, GO, or LSE.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

d. 4.3 The information being required will come from multiple sources and should not be the sole responsibility of the TO, DP, GO, and LSE to compile and report. The TO, DP, GO, LSE and many other entities can contribute information but the determination is left to the “group” responsible for analysis.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

e. Since the TO, DP, GO, and LSE are not operating the system they will not be the ones that will necessarily know what initiated the event.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

38. R4.2, R4.3 and R4.4 should be included in documentation which should be developed and maintained by the “group” designed to define the SPP regional program and how it will operate and be removed from the standard.

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a. It is understandable that the drafting team wants documentation that will allow for an adequate analysis of an event to be accomplished. The drafting team should use caution making sure the requirements apply to the proper entity and do not create situations where it will be impossible for an entity to meet a requirement. R4.2, R4.3 and part of R4.4 do just that.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

39. 4.3 Entities should only be required to report known data. A TO, DP, GO or LSE can only report the root cause, contributing factors, etc. that are known. 4.3 should be changed to say “Known Factors Initiating UFLS Events” and the sub-requirements have “Known” added to them.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

40. 4.3.3 It is not clear what this means.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

41. R4.4 the data requested in R3 is a separate issue from the detailed sequence of events. The “group” will already have the “data requested in R3” because they have the database. Anything not in the database is a violation of R3. Requiring data be provided twice is overburden.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

a. Suggested that “Detailed sequence of events” be changed to “Known details including the known sequence of events”

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

b. Suggested re-wording of R4.4: Known details including the known sequence of events and any other significant information which may be helpful in the determination of the cause, explanation of the event, or useful in determining corrective actions

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SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

42. R4.5 There should be a separation between the corrective actions taken immediately after an event, up to, and including the restoration of load and corrective actions developed post mortem as a result of an investigation.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

43. R4.5.1 Conclusions and recommendations are part of an analysis report and may not be known or developed until long after an investigation has been conducted. For an investigation report the requirement should be to include “known conclusions and recommendations” or “preliminary conclusions and recommendations”.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

44. R4.5.2 should be a stand alone requirement. Corrective actions identified as the result of an investigation or analysis of an event should be implemented and tracked until completed.

a. In order to track progress on implementation each corrective action might include a time line. Progress could then be reported on a quarterly basis.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

b. Corrective actions and implementation progress should be coordinated and tracked by the “group”.

SDT Response: Thank you for the comments. R4 has been removed from the UFLS standard since it is covered in EOP-004 along with some possible reporting requirements in the “Rules of Procedures.”

45. R5, R6, R7, R8 Again any reference to the Planning Coordinator should mean the “group of Planning Coordinators” as called for in PRC-006-1 and not individual Planning Coordinators.

SDT Response: The Planning Coordinator will be established by the SPP Regional Entity.

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46. R5 is a repeat of PRC-006-1 R8. The SPP standard should include any additional requirements which are specific to SPP or are more stringent than the NERC standard and not just repeat the NERC standard. Suggest this requirement be removed.

SDT Response: The intent of the drafting team is for entities to comply with the requirements of one standard on UFLS and not a mismatch of requirements between the continent wide and regional standard.

47. R5.1 first sentence. PRC-006-1 requires the database to be “annually maintained”.

SDT Response: SPP will require updated information every five years or as requested by SPP.

48. R5.1 The second sentence should simply say “The database shall include all the information identified in R3.” It does not need to repeat what is already included in another requirement.

SDT Response: This wording has been revised.

49. R5.2 should be a stand alone standard. The assessment is more than maintaining a database.

SDT Response: The Planning Coordinator will be held accountable to this requirement regardless of whether the requirement is a sub-requirement or not.

50. R5.2 “effectiveness of the design and compliance” of what? The individual entity plan? SPP program? SPP database?

a. How will an assessment of the effectiveness of compliance be conducted?

b. What does “significant changes in system conditions”? Suggested that the sentence be ended with “as required” and delete the rest.

SDT Response: This requirement provides for a means for the Planning Coordinator to;

1. verify the effectiveness of the SPP UFLS program and

2. verify the SPP Regional standard meets all of the continent wide requirements.

The effectiveness of the SPP UFLS program will be determined by technical simulation. The wording "by significant changes in system conditions" has been removed.

51. R6 and R7 How islands are defined will be very critical. The SPP standard or the “group” documentation of how the SPP program is designed needs to be very specific on the criteria that will be used to determine islands. Islands should not be created and every attempt should be made to prevent forcing a DP or LSE to put additional load under UF control above and beyond what is required in R1.1.

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SDT Response: Thank you for the comments. The Drafting team will consider this in any future work on the standard.

52. R6 is a repeat of PRC-006-1 R5. The SPP standard should include any additional requirements which are specific to SPP or are more stringent than the NERC standard and not just repeat the NERC standard. Suggest this requirement be removed.

SDT Response: The drafting team will review this suggestion. However, there is no approved NERC standard at this time and without it; all information will need to be in the SPP standard.

53. R6 The responsibility for determining islands lies with the “group” and not the TP. The TP may provide input into that determination but the TP should not be the one who deems an island appropriate. This is a delegation of responsibility specifically assigned to the “group” in PRC-006-1 R5.

SDT Response: First, the ‘group’ is in SPP’s case SPP. In the present Criteria, the individual member of SPP may form an island if the system frequency falls below the third load shed frequency. The requirement is to coordinate this with their neighbors and to inform SPP of the plan. The drafting team has not identified a need for islanding as yet, but the first level may be to separate SPP from other regions and after that, allow individual members island, if this does not arrest the frequency decline. The drafting team will be considering this option.

54. R7 PRC-006-1 bullet 4 ensures that the entire region will be in at least one island. R7 then is requiring the TO, DP, LSE, and GO to participate in the assessment and mitigation that specifically address gen/load imbalance in the SPP region. Was this the intent?

SDT Response: See response to question 53.

55. R7 What is the definition of a “credible island”?

SDT Response: A ‘Credible Island’ is a geographical or electrical contiguous area that has the possibility and probability of having a balance of generations and load, and is separated electrically from other areas.

56. R7 What constitutes a generation/load imbalance? Is this the equation used in PRC-006-1 R6?

SDT Response: Yes

57. R7 concerning UFLS capability to cover generation/load imbalances refer to comments on R1.2 and R2.

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58. R7 paragraph 2 any gen/load imbalance resulting from the creation of a new island should be identified by the “group” and each entity within the island participate on a load share basis. This should be spelled out in the requirement.

59. All of the functions of the “group of Planning Coordinators” should be spelled out in the requirement. The “group” is much more than a data processor.

SDT Response: In SPP there is no ‘group’ of coordinators. SPP is the Planning Coordinator.

60. M1 there are no performance requirements in R1. R1 defines the plan.

61. M2 see comments on R2

62. M4 The analysis is not the responsibility of the TO, DP, GO, or LSE. See comments on R4.

63. M5 There is only one group of Planning Coordinators. That group is responsible for the database.

64. M6 Under the NERC standards measures are what determine compliance. Measures should spell out specifically what will be measured and not generically refer to the requirement.

SDT Response to Questions 60-64: The drafting team will review these and make any needed adjustments.

- 65.** The standard fails to address how the SPP program will address many of the aspects of PRC-006-1. Especially
- a. R1 no reference as to how the “group of Planning Coordinators” will be formed and their responsibilities carried out.
 - b. R2 no reference as to how the program will be designed
 - c. R3 no criteria for how islands will be determined
 - d. R4 no reference to how the “group will coordinate with other regions
 - e. R5 no criteria for how islands will be determined
 - f. R6 no reference or requirements addressing the technical design parameters
 - g. R7 no reference or requirements on how the “group” will conduct the UFLS assessment
 - h. R9 no reference or requirement as to the schedule or format for supplying data

SDT Response: Until there is an approved NERC standard, it is hard to address specific statements in the proposed standard.