

Individual or group. (46 Responses)

Name (29 Responses)

Organization (29 Responses)

Group Name (17 Responses)

Lead Contact (17 Responses)

IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (2 Responses)

Comments (46 Responses)

Question 1 (44 Responses)

Question 1 Comments (44 Responses)

Question 2 (41 Responses)

Question 2 Comments (44 Responses)

Question 3 (0 Responses)

Question 3 Comments (44 Responses)

Individual
Aaron Staley
Orlando Utilities Commission
Yes
Voltage Threshold question: By "performance issues on the bulk electric system" does this mean the response of the bulk electric system (as in loading/voltage)? Or does it mean an outage on the bulk electric system? For example a SPS type system installed solely on non bulk electric equipment designed to protect solely the non bulk electric equipment but is triggered by an outage on the bulk electric system?
Yes
A question on the difference between type Planning and type Extreme. The Planning type references the system performance requirements in the NERC standards, but the Extreme lists the impact of two or more elements removed. How would an SPS installed to keep the system within the performance requirements for a TPL 003 C2 event be categorized?
Excellent Job!
Individual
Barb Kedrowski
Wisconsin Electric Power Co
Agree
NAGF
Individual
Chris Scanlon
Exelon

Yes
Yes
None at this time. We look forward to providing comments when the standard is posted.
Group
NERC Compliance Policy
Randi Heise
No
No
Dominion suggests use of a single term, Special Protection System, thus elimination of the term "Remedial Action Scheme" for consistency across the Regions.
Individual
Andrew Z. Pusztai
American Transmission Company, LLC
Yes
The scope of the SAR should establish a definition for "functional modification." Functional modifications require SPS owners to have Regional Entity (RE) review, but RE review teams are not given guidance on what constitutes a functional change. For instance, is a direct replacement of a failed SPS component failure (SEL-321 Relay for SEL-321 Relay) a functional change? How about upgrading a SEL-321 Relay with a SEL-421 Relay with the same logic? Based on the above, ATC recommends that the SDT consider adding a proposed definition of "functional modification" to the SAR as it relates to SPS.
No
Individual
John Seelke
Public Service Enterprise Group
Yes
Yes

Individual
Karen Webb
City of Tallahassee - Electric Utility
Yes
No
It would be beneficial to entities maintaining SPS systems to have a readily available resource on the NERC website that provides guidance to entities on identifying the largest Real Power Source for the interconnection. More description of “negatively damped oscillations” is necessary to determine the scope of what the proposed language includes.
Individual
Bill Fowler
City of Tallahassee
Yes
No
It would be beneficial to entities maintaining SPS systems to have a readily available resource on the NERC website that provides guidance to entities on identifying the largest Real Power Source for the interconnection. More description of “negatively damped oscillations” is necessary to determine the scope of what the proposed language includes.
N/A
Group
DTE Electric
Kathleen Black
Agree
Support NAGF members comments.
Group
ACES Standards Collaborators
Jason Marshall
No
(1) We support the need to modify the existing definition based on the explanation in the supporting document. We agree that the existing definition lacks specificity, which leads to inconsistent application among the various NERC regions. We also agree that systems such as voltage controls on capacitor banks could be inadvertently included as SPS based on the

existing definition. However, the proposed definition needs significant refinement as it introduces ambiguity and the purpose of the classification of SPS is not clear. (2) We suggest that the “system performance requirements identified in the NERC Reliability Standards” should be specified. This is overly broad and ambiguous and will only lead to inconsistent enforcement. Which system performance requirements in which standards? Would this apply to any standards or is it intended primarily to apply to TPL standards? Does this require the owner of the SPS to document for which standards the SPS is installed? For newly installed SPS, this might be easy but there could be disagreement over the purpose of the installation of existing SPS especially those that have been installed for a decade or more. Was it installed to meet NERC standards performance requirements or to address an operational issue or planning issue? We recommend identifying specific standards and requirements in the technical guideline section for clarity. (3) What is meant by the term “elements”? Element is a defined term in the NERC Glossary; however, it is not capitalized in the proposed SPS definition. This would imply something other than the meaning in the NERC glossary. Is it supposed to be capitalized? (4) Use of an “extreme event” is ambiguous and will lead to inconsistent compliance outcomes. Since the definition includes limiting impacts from the removal of two or more elements and Cascading, it is unclear what is meant by an extreme event. Cascading would certainly be an extreme event. However, three or more elements might not be an extreme event but one would think if two or more elements are included that three should be. In fact, three or more elements might not even be as severe as two or more elements. A three-terminal line could be considered three-elements. The bottom line is that this needs clarification. (5) Assuming that the proposed SPS definition intended to use the NERC glossary term Element, we suggest using the term Facility. Elements are a more fundamental component and can include circuit breakers. As the proposed definition is written, use of Element could be interpreted as including any scheme designed to respond to the clearing of a single facility. Because circuit breakers are considered Elements, any scheme designed to respond to the clearing of a line (i.e. removing two or more Elements or circuit breakers would fit the proposed definition and would clear the line) would be considered an SPS. We do not believe this was the intent given the use of limiting impacts for “extreme events” and “Cascading” as the other two reasons a scheme would be considered an SPS. (6) We suggest including a statement that makes it clear that the list of excluded schemes are not an exhaustive list. Otherwise, there may be disagreements over what is not an SPS which will lead to inconsistent applicability and compliance outcomes.

No

(1) Conceptually, we are not opposed to categorizing SPS into multiple tiers. However, the purpose of categorization is not clear and the proposed categories are ambiguous. What is the purpose of differentiating between an SPS that is designed to meet NERC reliability standards (planning) and one that is designed to limit the impacts of the loss of two or more elements, an extreme event or Cascading (extreme)? Limiting impacts on the BES are also related to multiple NERC reliability standards. Why are the extreme types of the definition called “extreme” when they include non-extreme events? Loss of two or more Elements could be the loss of a single transmission line or transformer since the definition of Element includes

circuit breakers. This is not extreme. (2) We support the description of significant as it is clear and unambiguous.

We have no additional comments and thank you for the opportunity to comment.

Group

SPP Standards Review Group

Robert Rhodes

No

We assume that generator AVRs and Power System Stabilizers (PSS) are not to be considered SPS. As such, AVRs and PSSs should be specifically excluded from the SPS definition by incorporation in the list of exclusions. Also Dynamic Voltage Regulators (DVRs) also fall into a similar category. Would the drafting team be willing to say that any protection schemes or devices used exclusively for the protection of a generator, and that only trip the generator in question, would not be considered an SPS?

No

Individual

Catherine Wesley

PJM Interconnection

No

For 'd' in the listing of schemes that do not constitute a SPS, the list of equipment is very discrete/specific. PJM recommends this list be more generic because if not revised, there is the possibility that emerging technologies would be left out, requiring future revision of the definition.

No

For the four types of SPSs identified, they should be static in their scope, not dynamic which would result in potentially continued reevaluation of the types. In other words, base the SPS types on the contingency mitigated, not the results of the contingency.

Group

MRO NERC Standards Review Forum

Joe DePoorter

No

The NRSF has concerns that the proposed SPS definition in the technical paper remains broad, lacks sufficient clarity and the specificity necessary for consistent identification and classification of SPS systems across all eight regions. While the SPCS effort is commendable, the definition remains overly broad and will continue to identify protection systems that don't affect the security of the BES. While having the SPS exclusions list provides some clarity and is

helpful, the presence of a long exclusions list shows the definition lacks the clarity and specificity necessary for the consistent identification and classification of SPS schemes. Since the drafting team cannot identify and exclude all possible protection schemes that respond to non-fault conditions, more protection systems will be identified by different regions in the future causing inconsistent application of the definition. The MRO NSRF suggests the drafting team consider enhancements including, definition adjustments, and the addition of a screening process to clearly communicate the SPS definition intentions while avoiding unduly identifying protection systems that should not be Special Protection Systems. The screening process is needed because an exhaustive list of exclusions cannot be developed. The NSRF suggests the drafting team consider a two-step screening and assessment process. Step 1: Screening process using an English definition designed to eliminate unnecessary analyses. Use the following definition to screen for inclusions and exclusions: Proposed definition additions and changes: Special Protection System (SPS) A scheme designed to detect predetermined system conditions and automatically take corrective actions on BES Facilities, other than the isolation of faulted elements, to meet BES system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading. Subject to the exclusions below, such schemes are designed to maintain BES system stability (not individual unit stability), acceptable BES system voltages, acceptable BES power flows, or to address other BES reliability concerns. They may execute actions that include but are not limited to: changes in MW and Mvar output, tripping of generators and other sources, load curtailment or tripping, or system reconfiguration. The following schemes do not constitute an SPS in and of themselves: a) Underfrequency or undervoltage load shedding b) Locally sensing devices applied on an element to protect it against equipment damage for non-fault conditions by tripping or modifying the operation of that element, such as, but not limited to, generator loss-of-field, transformer top-oil temperature, or power plant unbalance relays / controls. c) Autoreclosing schemes d) Locally sensed and locally operated series and shunt reactive devices, FACTS devices, phase-shifting transformers, variable frequency transformers, generation excitation systems, and tap-changing transformers e) Schemes that prevent high line voltage by automatically switching the affected line f) Schemes that automatically de-energize a line for non-fault operation when one end of the line is open g) Out-of-step relaying h) Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation, that may not be capable of maintaining acceptable frequency and voltage) i) Protection schemes that operate local breakers other than those on the faulted circuit to facilitate fault clearing, such as, but not limited to, opening a circuit breaker to remove infeed so protection at a remote terminal can detect a fault or to reduce fault duty j) Automatic sequences that proceed when manually initiated solely by an operator k) Sub-synchronous resonance (SSR) protection schemes l) Modulation of HVdc or SVC via supplementary controls such as angle damping or frequency damping applied to damp local or inter-area oscillations m) A Protection System that includes multiple elements within its zone of protection, or that isolates more than the faulted element because an interrupting device is not provided between the faulted element and one or more other elements n) Reverse power relays o) Synchronizing relays q) Relays or controls that prevent BES facilities to be backfed from a non-

BES system Step 2: Perform a security or stability analysis to verify that the SPS has a critical impact on BES system security. If the protection system meets the inclusions and is not excluded by the step 1 definition screen, perform a system security analysis. If the loss, misoperation, or non-operation of the protection system results in BES system instability, uncontrolled separation, and cascading, then the protection system is a SPS. If loss, misoperation, or non-operation of the protection system does not result in BES system instability, uncontrolled separation, and cascading, it is not a SPS. This equally effective or superior approach would concentrate on BES system security analysis (or stability verification), where security is defined as the ability to return to an acceptable equilibrium point within BES system emergency ratings while avoiding BES system instability, uncontrolled separation, and cascading. This is consistent with the RAI process of focusing on appropriate risk. BES protection systems designed to maintain BES system security appropriately separates Special Protections Systems (SPS's) as important enough to have their own NERC standard outside of the normal PRC protection system standards. BES security can be mathematically measured and quantified by existing power system stability programs. BES security refers to conditions where the BES system returns to an acceptable equilibrium point within BES system emergency ratings and where sufficient synchronizing and damping torques are available after identified TPL standard system disturbances to maintain acceptable BES system damping, avoid uncontrolled separation, and cascading. BES system damping can be further defined as an acceptable decreasing damped curve with an agreed upon damping ratio or a damped power system oscillation or sine wave whose amplitude approaches zero as time increases.

No

Comments: The four proposed types are unnecessary if a BES system security / stability analysis is added. An appropriate screening criteria coupled with a stability analysis is a superior way to identify BES system security impacts determining if a protection system should be subject to the standard. If a BES system security / stability analysis is added, the standard can be simplified to a binary approach without the four classifications. A protection system would be identified as either applicable or not applicable.

The proposed standard scope includes revising PRC-017-0. This standard is scheduled to be retired with the effective date of PRC-005-2, which is April 1, 2014. PRC-005-2 already includes in its scope the maintenance and testing requirements of the Protection System elements of a SPS. It is recommended that the maintenance and testing requirements of all of the elements of the SPS be in the same standard. Either include the "Protection System components" and "non-Protection System components" of a SPS in PRC-005 or in PRC-017, and not split the requirements for the testing of parts of the SPS into two standards. Since the specific requirements for the testing of the "Protection System components" of a SPS are already in PRC-005, it seems to make more sense to simply make PRC-005 apply to "all" components (parts) of a SPS rather than repeat the specific requirements for the testing in a second standard. It is not clear how a SPS can have "non-Protection System components". If a component is required in the composition of a SPS to achieve the desired operability, it seems implicit that it becomes a "Protection System component". Once the definition of a SPS is clearly determined (part of this project), the analysis of any operation (or lack of operation)

of the scheme does not need to be treated any differently than other Protection System analysis and correct-operation determination. It is recommended that the evaluation of proper/improper operation of a SPS be included in PRC-004 rather than in a second Misoperation standard, PRC-016. Once the definition of a SPS is well defined, it should be no more or less difficult to determine if it operated correctly than any other protection scheme. The time frames for review, possible involvement of multiple parties, and Corrective Action Plans aspects apply directly to SPSs just as they do to ordinary Protection System schemes.

Individual

Martyn Turner

LCRA Transmission Services Corp

No

The list of exclusions is helpful and is very thorough. However, there may be certain applications, actions, or schemes that exist today (or in the future) that could be incorrectly labeled as an SPS. We have some concern that certain schemes or actions not listed (e.g. single-pole tripping, phase shifter operation, etc) could erroneously or inadvertently be considered an SPS, so the list included in the definition should not be treated as an exhaustive list of exclusions. We recommend revising the definition language as follows: "Examples of The following schemes that do not constitute and SPS in and of themselves:"

Yes

na

Group

Puget Sound Energy

Dianne Gordon

No

For "Exclusions" in the textbox labeled "Special Protection System (SPS)", paragraph b), the definition of "element" needs to be clarified as to whether lines are included or not. For example, does a locally sensing thermal scheme applied to a line constitute an SPS?

No

Some clarifications need to be made as follows: 1. The process by which entity submitted RAS schemes are slotted for a specific category needs to be clarified. For example, does an entity submit a RAS scheme with a proposed category designation and WECC officially approves the designation? 2. Definitions for "Planning" vs. "Extreme" need to be spelled out similar to the way definitions for "Significant" and "Limited" are spelled out.

Group

PacifiCorp

Sandra Shaffer

No
The proposed SPS definition does not provide adequate clarity with respect to protection systems that isolate multiple elements for reasons other than fault clearing. Many common protection schemes that utilize breaker status contacts or lockout contacts to transfer trip multiple elements within a substation seem to meet the new SPS definition, despite limited potential impacts to the bulk electric system. For example, consider a scheme that utilizes a status contact on a line breaker to transfer trip a shunt capacitor within the substation in conjunction with line tripping. In this example, the scheme is hard-wired within the substation, and does not utilize any arming logic. The intent of the example scheme is to provide fast shunt device tripping and to provide additional redundancy for the shunt device voltage control. Under the draft definition, this scheme appears to meet the SPS criteria (and is not excluded under the list of schemes that do not constitute an SPS), as the shunt capacitor control is not based on locally-sensed voltage and system elements are tripped for a reason other than facilitation of fault clearing. Unless the drafting committee considers hard-wired transfer trip schemes local to a substation as SPS, the definition should be revised to exclude such schemes.
Yes
The proposed SPS types closely match the existing SPS classifications used in the WECC, with additional sub-classification of extreme event schemes provided under Type ES (extreme-significant) and EL (extreme-limited).
Group
Northeast Power Coordinating Council
Guy Zito
No
We do note that the SPS definition excludes what is traditionally considered to be “protection systems.” However, the existing NERC definition for Protection System does not exclude Special Protection Systems. This creates a problem for NERC. We recommend concurrently with this new SPS definition to modify the definition for Protection System to specifically exclude Special Protection Systems. Without doing so would create potential compliance conflicts.
The type classifications need to be clarified and and made consistent. For example, “two or more elements removed” can refer to TPL Planning Events P3, P4, P5, P6, and P7. By definition within the TPL Reliability Standard, these are NOT extreme events, but indeed are performance requirements. The proposed change makes the typing of a SPS clear and consistent with existing NERC Reliability Standards. To this end, suggest the following: For the PS and PL types, suggest changing “A scheme designed to meet system performance requirements identified in the NERC Reliability Standards,…” to “A scheme designed to meet system performance requirements identified in NERC Reliability Standard TPL-001-4 Table 1 –

Steady State & Stability Performance Planning Events,...” For the ES and EL types, suggest changing “A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading,...” to “A scheme designed to limit the impact of an extreme event(s) identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Extreme Events, or Cascading,...” Centrally controlled undervoltage load shedding schemes should be covered by the new SPS definition. These are consistent with the nature of SPS regarding the complexity of the control logic and the effect of a single component failure on their reliable performance.

Individual

Dale Fredrickson

Wisconsin Electric Power Company

No

We suggest there needs to be a clearer distinction between a normal Protection System and an SPS. The clause in the 1st paragraph...”other than the isolation of faulted elements” should be expanded to recognize both faults and abnormal operating conditions. We recommend revising this paragraph to read: “A scheme designed to detect predetermined system conditions and automatically take corrective actions, other than the isolation of elements for faults or abnormal operating conditions, to meet system performance requirements identified in the NERC Reliability Standards...”. We also suggest that other exclusions should be allowed for generator overfrequency/underfrequency and turbine overspeed protection. We recommend revising Exclusion d) to read: “Locally sensed and locally operated series and shunt reactive devices, FACTS devices, phase-shifting transformers, variable frequency transformers, generation excitation systems, generator over/under frequency protection, turbine overspeed protection, and tap-changing transformers.”

Yes

Individual

Michael Haff

Seminole Electric Cooperative, Inc.

No

The proposed definition for SPS includes a list of exclusions, “a” through “m”. Specifically, exclusion “b” states: “Locally sensing devices applied on an element to protect it against equipment damage for non-fault conditions by tripping or modifying the operation of that element, such as, but not limited to, generator loss-of-field or transformer top-oil temperature.” Seminole requests that the following revisions to exclusion “b” be made: (1) The addition of the word “overload/” before equipment; (2) The addition of the following: “or eliminating the overload so as not to exceed the facility’s SOL” after the word “element;” and (3) The addition of the following: “or overload protection schemes” after the word

temperature. Exception “b” would then read as such: “Locally sensing devices applied on an element to protect it against overload/equipment damage for non-fault conditions by tripping or modifying the operation of that element or eliminating the overload so as not to exceed the facility’s SOL, such as, but not limited to, generator loss-of-field, or transformer top-oil temperature, or overload protection schemes.” Seminole believes that this revised language will allow for certain schemes that are delineated within the second paragraph of the proposed definition that states: “...such schemes are designed to maintain system stability, acceptable system voltages, acceptable power flows, or to address other reliability concerns. They may “execute actions that include” but are not limited to: changes in MW and Mvar output, “tripping of generators” and other sources, load curtailment or tripping, or system reconfiguration.” (emphasis added) Seminole would like to propose the following example for the drafting team to include in any supporting documentation for the proposed definition that touches on the revised exclusion “b”: Example: An entity has 1000 MW of generation interconnected at a common collector bus with three (3) 115 kV transmission lines emanating from the collector bus, two of the three lines share a common structure for greater than one mile. Each line is able to carry 600 MW; however, for the common structure contingency event (i.e., 2 out of the 3 circuits are lost simultaneously) the one remaining line overloads beyond its SOL rating. The event does not create an IROL but it does in fact cause the non-faulted facility to go beyond its SOL. The respective entity installs an automatic overload protection scheme that trips generation in the event the contingency was to occur as to not exceed the facility’s SOL. The automatic overload protection scheme should fall under exclusion “b” of the SPS proposed definition.

Yes

No additional comments

Individual

Thomas Foltz

American Electric Power

Yes

The proposed SPS definition appears to sufficiently identify the types of protection system schemes that should be subject to the SPS-related standards. However, the definition does not clearly indicate the line between what physical equipment is or is not part of the SPS. Consider a scheme that detects a system condition and subsequently decreases MW output of a unit. It is unclear if the SPS is 1) only those components that detect the system condition i.e. Transmission protective relays, voltage and current sensing devices etc., 2) only those components that decrease the MW output of the unit i.e. the turbine control system, associated logic, steam valves, etc. or 3) both sets of components. AEP recognizes that the SDT may prefer to address this issue within the SPS standards instead of the definition. Regardless, due to regional differences, we urge the SDT to clearly provide guidance.

No

The categorization between “significant” and “limited” may become problematic where an SPS falls on or near the given load and generation loss boundaries. Varying system conditions may cause a given SPS to qualify at times and not qualify at others with respect to the load loss or the loss of synchronism or oscillation criteria. Some SPSs that might ordinarily qualify as limited may have far ranging consequences under stressed interconnected system conditions because of their location. The significant-limited distinction should be removed. Categorization between “planning” and “extreme” events should not have the same issue with SPSs falling on or near a classification boundary, so we believe this classification is acceptable and may be useful with respect to the need for redundancy. We would, nevertheless, recommend more specific wording identifying the specific NERC standards, and clarifying that SPSs intended for those TPL planning events that involve two elements removed are, in fact, planning SPSs and thus not also extreme SPSs at the same time. We believe the TPL standards are implied here because of the terms “planning” and “extreme” events. Are there others? We don’t believe so.

Individual

David Jendras

Ameren

Yes

Yes

We are generally in agreement with the categorization of SPSs into the 4 buckets.

Please realize that the term “system” is used in a myriad of ways in the NERC Glossary of Terms. Thus we request revising the first sentence of the proposed SPS definition from the SAMS-SPCS SPS Technical Reference to clarify “system”. We recommend the following: “A scheme designed to detect predetermined Bulk Electric System (system) conditions and automatically take corrective actions, other than the isolation of faulted elements, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading.”

Group

Iberdrola USA

John Allen

Yes

No

The type classifications are vague and inconsistent – for instance, “two or more elements removed” can refer to TPL Planning Events P3, P4, P5, P6, and P7. By definition within the TPL Reliability Standard, these are NOT extreme events, but indeed are performance

requirements. Proposed changes below make the typing of an SPS clear and consistent with existing NERC Reliability Standards. - For the PS and PL types, change “A scheme designed to meet system performance requirements identified in the NERC Reliability Standards,...” to “A scheme designed to meet system performance requirements identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Planning Events,...” - For the ES and EL types, change “A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading,...” to “A scheme designed to limit the impact of an extreme event(s) identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Extreme Events, or Cascading,...”

No other comments

Individual

Oliver Burke

Entergy Services, Inc.

Yes

Yes

Group

SERC Protection and Controls Subcommittee

David Greene

Yes

Yes

Please inform the SDT that the term ‘system’ is used in a myriad of ways in the NERC Glossary of Terms. Thus we suggest revising the first sentence of the proposed SPS definition from the SAMS-SPCS SPS Technical Reference to clarify ‘system’. We suggest: ‘A scheme designed to detect predetermined Bulk Electric System (system) conditions and automatically take corrective actions, other than the isolation of faulted elements, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading.’ The comments expressed herein represent a consensus of the views of the above-named members of the SERC EC Protection and Control Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board, or its officers.

Individual

Jonathan Meyer

Idaho Power Company

No
Idaho Power Power Production department: Yes Idaho Power System Protection: No While we do feel the proposed definition lays the framework for identification of SPS/RAS schemes, there is sufficient vague language in the exclusions to result in doubt about the efficacy of the definition. In our own review of the definition we spent most of our time examining specific scenarios present in our own system and attempting to apply the definition without a clear result. We would like more detail in the exclusions detailing why those schemes are not SPS/RAS to assist with the application of the definition
Yes
We like the categorizing SPS based on impact, but it is difficult to comment further until the Requirements associated with these categories are written. In the context of the definition, we do not think they add clarity and should be part of the Project Standards but not part of the definition. If they were modified to be part of an identification process, much of our concern in response 1 could be alleviated. Rather than identify an SPS/RAS then categorize it, could the categories be used as part of the identification process? These classifications could make the identification process impact/performance based and could increase reliability by eliminating interpretation errors with the definition and exclusions.
In addition, to the above comments, we also agree with some members of the DT the use of "Special Protection System", specifically the use of word protection, could create confusion among Entities when considered with other "Protection Systems". The definition of a SPS should clarify the difference, and in addition, we favor adopting the "Remedial Action Scheme" moniker for this project and its resulting documents to avoid confusion for those Standards specific to "Protection Systems".
Individual
Bob Steiger
Salt River Project
Yes
SRP has no concerns regarding the definition and the exclusions.
Yes
Individual
Nazra Gladu
Manitoba Hydro
No
1.Should the term "NERC Reliability Standards" in this proposed SPS definition be replaced by "NERC TPL Reliability Standards" or simply "NERC TPL-001-4 Standard"? 2.For clarity, consider replacing the following sentence "The following schemes do not constitute an SPS in and of

themselves” with “The following schemes do not constitute an SPS”. 3.The wording of “to limit the impact of: two or more elements removed, an extreme event, or Cascading” is unclear. Does this imply that any scheme that removes two or more elements should be included as SPS? 4.In exclusion category b), consider adding the text “element overload protection that removes the element itself from service only” in the sentence so it reads “such as, but not limited to, element overload protection that removes the element itself from service only, generator loss-of-field or transformer top-oil temperature”. 5.In exclusion category f), consider replacing the words “non-fault operation” with “non-fault condition”. 6.In exclusion category i), consider replacing the words “fault duty” with “fault current”.

Yes

Individual

John Miller

Georgia Transmission Corporation

No

The new definition appears to be based on "what is not". Please supply clarification for item L). If a Static Var Compensator was applied to avoid a FIDVR condition in the BES but not angle damping or frequency damping, is it then considered a SPS?

Yes

GTC is in support of the comments from SERC-PCS

Group

Dominion

Mike Garton

Yes

Yes

Dominion agrees that there is benefit to having different categories or classes of SPS. However, the proposed classifications need additional clarity. The document states “The planning classification applies to schemes designed to meet system performance requirements identified in the NERC Reliability Standards”. It would be beneficial if the specific standards or class of standards (TPL?) were identified in this sentence. We also propose that extreme limited either be renamed or a 5th category be created. Our reason for this is that limited indicates ‘no significant impact’ whereas extreme seems to indicate something that is definitely not insignificant. We also propose that “aggregate resource loss (tripping or runback of generation or HVdc) greater than the largest Real Power resource

within the interconnection” be replaced with a bright line value such as is used in CIPsv5 or EOP-004.

1. Suggest spelling out FACTS 2. EOP-004-1 as mentioned in the document, needs to be updated as EOP-004-2

Group

Duke Energy

Michael Lowman

Yes

Duke Energy agrees that the proposed definition properly identifies the types of protection schemes that should be subject to the SPS-related standards. We ask that the SDT verify that centrally-controlled undervoltage-based load shedding is included in the definition of a Special Protection System. This was mentioned in the rationale of Project 2008-02 Undervoltage Load Shedding.

Yes

Duke Energy agrees with categorizing SPSs into four proposed types.

Individual

Anthony Jablonski

ReliabilityFirst

No

ReliabilityFirst submits the following comments for consideration: 1. ReliabilityFirst submitted a redline version of the proposed definition to the SDT coordinator (Al McMeekin) under a separate cover. 2. ReliabilityFirst has noticed that within the Project 2008-02 (Undervoltage Load Shedding) rationale for the definition of UVLS, the SDT indicated " Centrally-controlled undervoltage-based load shedding is excluded, because the load shedding logic may utilize 1) voltage inputs from multiple locations; and/or 2) inputs other than voltages, such as generator reactive reserves, facility loadings, and equipment statuses. As such, its reliable performance could be affected by a single component failure, which is consistent with the nature of Special Protection Systems. Therefore, the drafting team has recommended that Project 2010-05.2 Protection System (Special Protection Systems) include centrally-controlled undervoltage-based load shedding in the definition of a Special Protection System." Based on this rational, ReliabilityFirst requests clarification whether the SDT considered including centrally-controlled undervoltage-based load shedding in the definition of a Special Protection System? Without centrally-controlled undervoltage-based load shedding included in the proposed SPS definition, there could be a gap in coverage. 3. The term "fault" is used throughout the definition though it is not capitalized. ReliabilityFirst recommends capitalizing the term "fault" so it is consistent with the NERC Glossary of Terms definition of "Fault". 4. For item "e", ReliabilityFirst does not understand how schemes that prevent high line voltage by automatically switching the affected line are not considered an SPS. Such schemes are

designed to maintain acceptable voltages by reconfiguring the system (i.e., automatically switching the affected line). ReliabilityFirst requests the rationale for excluding this as an SPS. 5. For item “j”, the term “operator” is used. ReliabilityFirst requests clarification on the meaning of this term and believes the definition should identify the “operators” in which the definition is referencing. For example, is the definition meant to address transmission operators, substation operators, etc.? ReliabilityFirst believes the intent is transmission system operators and recommends the following for consideration: “Automatic schemes manually armed solely by a transmission system operator.”

No

ReliabilityFirst submits the following comments for consideration. 1. ReliabilityFirst does not understand why the categorization of SPS (i.e., the four distinct types), are included with the SPS definition. ReliabilityFirst believes the definition should simply state what is and what is not considered a SPS and the specific categorization is more appropriate to be placed within the individual standards themselves. Furthermore, without seeing the content of the actual requirements, it is hard to comment on whether the categorizations make sense. ReliabilityFirst suggests removing the categorization of SPS’s from the definition and referencing them in the forthcoming standard(s). 2. If the categorization of SPS section remains within the definition, under the “Aggregate resource loss (tripping or runback of generation or HVdc) greater than the largest Real Power resource within the interconnection”, ReliabilityFirst recommends referencing “nameplate” Real Power resource consistent with the BES definition language.

Individual

Andrew Z. Pusztai

American Transmission Company, LLC

No

The proposed definition has an exclusion of locally sensed and locally operated series and shunt reactive power devices and also includes FACTS devices. ATC has a back-to-back HVDC facility with a locally sensed and locally operated control system for the series real and reactive power device that could quickly change real and/or reactive power flow. However, all auditors may not consider ATC’s HVDC device to be a FACTS device and it is a series device that also controls real power flow. ATC recommends that the SDT consider revising the (d) exclusion text as follows: “Locally sensed and locally operated series and/or shunt devices that control real and/or reactive power, FACTS devices .

Yes

Group

Florida Municipal Power Agency

Frank Gaffney

No

FMPA appreciates the efforts of the team and believes the definition is a significant improvement over the former definition. There are only a few comments we are making in response to this and the next two questions First is that we are of the opinion that Special Protection Systems are indeed Protection Systems as defined in the NERC Glossary, and as applicable to PRC-005-2 recently approved by FERC. The Applicability Section of PRC-005-2 at 4.2.4 reads: "Protection Systems installed as a Special Protection System (SPS) for BES reliability." If an SPS is not a Protection System, then what is the scope of testing required in PRC-005-2 for an SPS? If an SPS is not a Protection System, should the scope of the SAR be changed to include modifications to PRC-005-2? The SDT seems to depend on: "... SPS are not limited to detecting faults or abnormal conditions and tripping affected equipment" in expressing its opinion that SPSs are not Protection Systems; however, those terms are not used in the Glossary definition of Protection Systems. There is nothing in the definition of Protection System that would eliminate SPSs from being a subset of Protection Systems. In addition, under the section "Voltage Threshold" of the paper that includes the proposed definition, the paper states: "(a)ll elements, at any voltage level, of an SPS intended to remediate performance issues on the bulk electric system (BES), or of an SPS that acts upon BES elements, should be subject to the NERC requirements." If the SPS is not a Protection System that includes: (i) relays; (ii) communication systems; (iii) voltage and current sensing devices; (iv) dc supply; and (v) control circuits as elements of the Protection System, then to what does "all elements" refer?

No

The definition should not include brightlines. Brightlines already exist in at least two standards that would just cause confusion over what brightline to use. The CIP-002-5 standard has a Medium Risk brightline criteria 2.9 of Attachment 1 to CIP-002-5 which states: "2.9. Each Special Protection System (SPS), Remedial Action Scheme (RAS), or automated switching System that operates BES Elements, that, if destroyed, degraded, misused or otherwise rendered unavailable, would cause one or more Interconnection Reliability Operating Limits (IROLs) violations for failure to operate as designed or cause a reduction in one or more IROLs if destroyed, degraded, misused, or otherwise rendered unavailable." IRO-005, R9 uses a criteria of: "... a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) ..." Adding another set of brightlines (for no apparent purpose contained within the standards but presumably for the convenience of three of the Regions) that conflict with these brightlines already within the standards will only bring confusion. Brightlines for SPSs should be within each standard, not within the definition. If the SDT does not agree, then, at minimum, the SAR should be changed to modify CIP-002-5 and IRO-005 to align with the newly proposed brightlines. The definition is exceptionally long. By removing the categories and brightlines from the definition, it cuts the definition roughly in half.

The definition does not address automatic actions taken by an EMS, SCADA or DCS and whether that would be considered an SPS. For instance, an EMS can be programmed to perform automated switching (without human intervention) to relieve an overloaded Facility

in a similar manner to an SPS designed with relays or a programmable logic controller. Would such automation cause the EMS to be an SPS and subject to PRC-005-2 requirements for testing?

Individual

John Pearson

ISO New England

No

The first paragraph reads as follows: A scheme designed to detect predetermined system conditions and automatically take corrective actions, other than the isolation of faulted elements, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading. Comment: "Cascading" is the result of either the loss of two or more elements or an extreme event, rather than the cause. Therefore, we think the word "cascading" should be deleted from the first paragraph. Also, as currently written, the definition seems to imply that an SPS cannot be used to address the loss of a single element. To avoid this, we think that the definition should be revised to reference NERC Reliability Standards. For instance, the definition could state that an SPS is a scheme designed . . . "to meet system performance requirements identified in NERC Reliability Standards or to limit the impact of an extreme event." The second paragraph reads as follows: Subject to the exclusions below, such schemes are designed to maintain system stability, acceptable system voltages, acceptable power flows, or to address other reliability concerns. They may execute actions that include but are not limited to: changes in MW and Mvar output, tripping of generators and other sources, load curtailment or tripping, or system reconfiguration. Comment: We think that the first sentence in the second paragraph could be simplified to read "SPS schemes are designed to address reliability concerns such as maintaining acceptable voltages, power flows and system stability." Comments on Exclusions from Definition of SPS: Comments are listed below following the description of schemes that do not constitute an SPS: b) Locally sensing devices applied on an element to protect it against equipment damage for non-fault conditions by tripping or modifying the operation of that element, such as, but not limited to, generator loss-of-field or transformer top-oil temperature Comment: We think that exclusion b) is too broad. There are instances where an overcurrent device that opens a line is an SPS. As written currently, these schemes would fall under exclusion b) and would no longer be considered SPSs. In addition, the word "locally" should be changed to "local". Moreover, what is "local" has not been defined and, with technologies such as SmartWire emerging, it is unclear whether or not the controls for such a system would be considered "local." Similarly, some devices like SVCs, STATCOMs, or HVDC terminals also control capacitors at the same station and at surrounding substations. It is unclear whether the definition would classify any of these schemes as an SPS. d) Locally sensed and locally operated series and shunt reactive devices, FACTS devices, phase-shifting transformers, variable frequency transformers, generation excitation systems, and tap-changing transformers Comment: We think that generator governors and AGC control should be added to exclusion d). The comment above in exclusion

b) regarding the use of the word “local” instead of “locally” and defining what “local” means also applies to exclusion d). e) Schemes that prevent high line voltage by automatically switching the affected line Comment: While we agree with exclusion f), we think that the Drafting Team should delete exclusion e) as those schemes should be considered an SPS. Additional Exclusion: Comment: Another exclusion “n)” should be added to exclude load throwover schemes from being considered an SPS.

No

The standard reads as follows: SPS are categorized into four distinct types. These types may be subject to different requirements within the NERC Reliability Standards. • Type PS (planning-significant): A scheme designed to meet system performance requirements identified in the NERC Reliability Standards, where failure or inadvertent operation of the scheme can have a significant impact on the BES. • Type PL (planning-limited): A scheme designed to meet system performance requirements identified in the NERC Reliability Standards, where failure or inadvertent operation of the scheme can have only a limited impact on the BES. • Type ES (extreme-significant): A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading, where failure or inadvertent operation of the scheme can have a significant impact on the BES. • Type EL (extreme-limited): A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading, where failure or inadvertent operation of the scheme can have only a limited impact on the BES. Comments: The proposed types should match the contingency categories under the TPL standards (current and new). a. For the PS and PL types, change “A scheme designed to meet system performance requirements identified in the NERC Reliability Standards,...” to “A scheme designed to meet system performance requirements identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Planning Events,...” b. Type ES and EL: Referencing the loss of two or more elements seems to mix what are currently Category C events with Category D events. We think this is inappropriate. Instead, for the ES and EL types, change “A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading,...” to “A scheme designed to limit the impact of an extreme event(s) identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Extreme Events, or Cascading,...”. In addition, “Cascading” is the result of either the loss of two or more elements or an extreme event, rather than the cause. Therefore, we think “cascading” should be deleted.

The significant impact language in the standard reads as follows: An SPS is classified as having a significant impact on the BES if failure or inadvertent operation of the scheme results in any of the following: • Non-Consequential Load Loss \geq 300 MW • Aggregate resource loss (tripping or runback of generation or HVdc) > the largest Real Power resource within the interconnection⁴ • Loss of synchronism between two or more portions of the system each including more than one generating plant • Negatively damped oscillations If none of these criteria are met, the SPS is classified as having a limited impact on the BES. ⁴ I.e., Eastern, Western, ERCOT, or Quebec Interconnection. Comments: a. The term “largest Real Power resource” has not been defined and could lead to confusion. The term could be interpreted to mean the single largest generator or the total of all generators at a site. It is also unclear

whether the term would include an HVDC terminal from another interconnection. There may be a risk that retirement of the largest resource could result in a reclassification of numerous schemes as SPS across the interconnection. Furthermore, the loss of a resource of this size may be manageable in one area, but extremely severe in another, due to differing system characteristics within the same interconnection. The largest power resource should be defined by the area Balancing Authority instead of a continent-wide standard. b. Loss of synchronism between two or more portions of the system each including one or more generating plant: this language is unclear. It could be read to mean that losing a 50 MW load with two 20 MW generators is significant, when in reality it is not. c. Negatively damped oscillations: as written, this could mean a single 20 MW generator, which would not have an impact on the Eastern Interconnection. We think the language should be clarified to reference oscillations that impact a Reliability Coordinator area or a Balancing Authority area.

Individual

Cheryl Moseley

Electric Reliability Council of Texas, Inc.

No

Load side rollover schemes for distribution systems are not clearly identified as exclusions.

No

The distinction between “planning-limited” and “extreme-limited” is not clearly defined in either the definition itself or supporting documentation. NERC Reliability TPL standards include performance requirements to identify “the impact of two or more elements removed, an extreme event, or Cascading.” It could be better to categorize SPSs as “extreme-” or “planning-” on the basis the scheme is mitigating a specific system conditions identified in the TPL standards (i.e. Category B, Category C or Category D) as part of the new SPS definition or as part of supporting documentation. Incorporating this information would ensure continuity with existing standards.

In the definition it is not clearly defined whether series reactor insertion to change system flow should be determined as a special protection system.

Individual

Amy Casuscelli

Xcel Energy Inc.

No

The reliability drivers for SPS may potentially be more than “meet system performance requirements” and “limit the impact of an extreme event” that are acknowledged in the proposed definition. One significant reliability driver that must be included in the definition is prevention of equipment damage – note that SPS may be conceived and installed to prevent equipment damage caused not only by thermal overload, but also due to undesirable phenomenon such as sub-synchronous resonance, loss of effectively grounding in a station, etc.

No

The four proposed types appear to derive from the four possible combinations that can result based on the contingency event classification in the new TPL-001-4 standard (Planning vs Extreme Events) plus the Limited vs Significant Impact criteria provided in the proposed definition. The type PS and type PL generally correspond to the existing classification of Wide-area RAS and Local-area RAS within WECC, and type ES generally corresponds to the existing “safety-net” RAS classification in WECC. These three types also align with the existing SPS classification in NPCC and ERCOT. Although types PS, PL and ES fulfill a reasonable need for differentiation, the technical rationale for needing type EL is not clear. It appears that type EL is simply an extraneous by-product of the classification paradigm used, and can be eliminated due to the following reasons: (i) Does not correspond to any of the existing 3 types in WECC, NPCC or ERCOT, and none of these regions have found their existing classification to be inadequate; (ii) Extreme-Limited is an oxymoron – if an extreme contingency event produces a limited impact, then why should it be characterized as an extreme event? In fact, this awkwardness is already reflected in the Type EL definition – if the “failure or inadvertent operation of the scheme can have only a limited impact on the BES” then why should “a scheme designed to limit the impact” be needed at all?

Suggest revisiting the criteria for significant impact in the proposed definition – the 300 MW load loss threshold may correspond to limited impact in a major load center, and an aggregate resource loss marginally greater than the largest generating unit in the interconnection may not be significant enough if it does not produce any Adverse Reliability Impact in the BES. Perhaps these two criteria also need a better rationale to explain why the proposed thresholds would result in significant *adverse* impact on BES reliability.

Group

Colorado Springs Utilities

Kaleb Brimhall

No

Thank you teammates for your work on this definition! Developing a comprehensive list of exclusions is not a reasonable expectation and will lead to problems in the future as more potential exclusions are identified or technological advances are made that are not included in the list. The definition needs to clearly identify what an SPS is without a long list of exclusions. This also creates the problem of including everything that is not excluded. Below is an attempt to try and start down that road, but does not compensate for all the proposed exceptions. A scheme, other than those specifically controlled by other NERC standards, designed to detect predetermined system conditions and automatically take corrective actions, other than the isolation of fault within a single protection zone or for the protection of elements for other than fault conditions, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading.

No

Please further explain why we are categorizing SPS, as we believe that this will lead to further confusion and requests for clarification.

None

Individual

Christina Conway

Oncor Electric Delivery Company LLC

Yes

Oncor agrees with the proposed SPS definition and encourages the SDT to keep the following in the exclusions; Static Var Compensators (SVCs), Series/Shunt Capacitors, and Series/Shunt Reactors. Oncor believes these devices, as used today, are part of “standard” business practice.

Yes

As stated on page 5 of the proposed SPS definition, “SPS are categorized into four distinct types. These types may be subject to different requirements within the NERC Reliability Standards”. Oncor encourages that the different types/categories of SPS be subject to applicable requirements.

Individual

Keith Morisette

Tacoma Power

No

Tacoma Power suggests additional clarification seems necessary for (b): “Locally sensing devices applied on an element to protect it against equipment damage for non-fault conditions by tripping or modifying the operation of that element, such as, but not limited to, generator loss-of-field or transformer top-oil temperature.” Perhaps there could be another category for backing-up operator response and re-dispatch: “Locally sensing devices intended to mitigate thermal damage, within expected system re-dispatch response times, such as 10 minutes or greater. Examples are cooling fans, oil pumps, or thermal protection systems.”

Yes

In the proposed definition, it seems that ‘interconnection’ should be capitalized.

Group

Southern Company: Southern Company Service, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing

Wayne Johnson

No

Combining (1) the statement "Use of protection system (lower case) within the SPS definition identifies that SPS are not Protection Systems. " (from page 1 of the SPS Definition document) with (2) "Special Protection System (SPS): A scheme designed to detect predetermined system conditions and automatically take corrective actions, other than the isolation of faulted elements, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of: two or more elements removed, an extreme event, or Cascading. Subject to the exclusions below, such schemes are designed to maintain system stability, acceptable system voltages, acceptable power flows, or to address other reliability concerns. They may execute actions that include, but are not limited to: changes in MW and Mvar output, tripping of generators and other sources, load curtailment or tripping, or system reconfiguration." (which is the proposed SPS definition from page 4 of the SPS Definition document), ... the schemes being described are more appropriately termed control systems rather than protection systems. If they are not Protection Systems, they should not be called protection systems. We question if there should even be a defined Special Protection Scheme if it is only used through controls to keep the system stable. A definition requiring two pages of notes and clarifications is not an effective definition.

No

What benefit is this categorization to the analysis of the correct operation of these types of protection systems? It is not clear that this distinction is needed for the evaluation of and minimization of recurrence of misoperations of these systems. The classification is unnecessary with respect to the reliability goal. The classification of the type of SPS should only be included in the definition if it is needed for establishing different requirements based on classification - otherwise, it is unneeded.

No other comments

Individual

Scott Langston

City of Tallahassee

Yes

No

It would be beneficial to entities maintaining SPS systems to have a readily available resource on the NERC website that provides guidance to entities on identifying the largest Real Power Source for the interconnection. More description of "negatively damped oscillations" is necessary to determine the scope of what the proposed language includes.

Individual

Ayesha Sabouba

Hydro One

Yes

We do note that the SPS definition excludes what is traditionally considered to be “protection systems.” However, the existing NERC definition for Protection System does not exclude Special Protection Systems. This creates a problem for NERC. We recommend concurrently with this new SPS definition to modify the definition for Protection System to specifically exclude Special Protection Systems. Without doing so would create potential compliance conflicts.

The type classifications need to be clarified and made consistent. For example, “two or more elements removed” can refer to TPL Planning Events P3, P4, P5, P6, and P7. By definition within the TPL Reliability Standard, these are NOT extreme events, but indeed are performance requirements. The proposed change makes the typing of a SPS clear and consistent with existing NERC Reliability Standards. To this end, suggest the following: For the PS and PL types, suggest changing “A scheme designed to meet system performance requirements identified in the NERC Reliability Standards,...” to “A scheme designed to meet system performance requirements identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Planning Events,...” For the ES and EL types, suggest changing “A scheme designed to limit the impact of two or more elements removed, an extreme event, or Cascading,...” to “A scheme designed to limit the impact of an extreme event(s) identified in NERC Reliability Standard TPL-001-4 Table 1 – Steady State & Stability Performance Extreme Events, or Cascading,...”

Individual

Brett Holland

Kansas City Power & Light

Yes

Yes

Throughout the proposed definition, the term used is scheme. I agree that the use of the term scheme is correct for the types of actions to which the definition applies. I think that the Western Interconnect has the right description with Remedial Action Scheme. The use of the description Special Protection System has the potential to confuse.

Group

Bonneville Power Administration

Andrea Jessup

No

BPA feels the proposed definition appears to clarify what a Special Protection System “is not.” The list of exclusions is extensive. To be more effective, BPA feels the definition should define and clarify what a Special Protection System “is.” To avoid confusion with other protection systems, BPA suggests that the drafting team consider revising the term “Special Protection

System” to “Remedial Action Scheme.” Since an SPS takes specific action in response to either a contingency or specific system response, an SPS is more appropriately defined as a scheme (a systematic plan of action), rather than a system (a functionally related group of elements). The first sentence of the definition states, “A scheme designed to detect predetermined system conditions and automatically take corrective actions, other than the isolation of faulted elements, to meet system performance requirements identified in the NERC Reliability Standards, or to limit the impact of two or more elements removed, and extreme event, or Cascading.” When two or more elements are removed, extreme events, and Cascading are addressed in the NERC Reliability Standards. Therefore, the second part of the sentence “or to limit the impact of two or more elements removed, and extreme event, or Cascading” becomes redundant and should be removed.

No

BPA does not agree with categorizing SPS into the four proposed types. With regard to category types “PS” and “PL,” BPA feels that the terms “wide” or “local” rather than “significant” or “limited” are more descriptive of the geographical impact to the transmission system. In addition, BPA feels the term “planning” suggests there is a distinction between planning and operations use of schemes and suggests not using this type of descriptor. With regard to category types “ES” and “EL”, BPA suggests these be combined and renamed (e.g., safety net) to better reflect their purpose. Since the purpose of these two categories is minimizing the impact of extreme events and not to meet required performance for NERC Category A, B, and C contingencies, BPA feels there isn’t a need to distinguish two levels for ES and EL in a Standard.

The terms “misoperation” and “failure to operate” are both included under the definition for Misoperation in the report “SPS and RAS: Assessment of Definition, Regional Practices, and Application of Related Standards.” BPA feels these terms are two distinct terms and that they are used interchangeably in SPCS/SAMS revised definition. For example, when a scheme “fails to operate,” the result of this has more significant consequences of not meeting system performance for the contingency which requires the scheme to operate. When a scheme “misoperates,” BPA feels this would have a much less significant impact on reliability of the transmission system since the impact is only due to the specific actions taken by the scheme and does not include the contingency. As such, BPA feels these terms need to be separate.

Individual

Richard Vine

California ISO

Yes

No

NERC proposes to categorize SPS (aka RAS) into four major groups, and then apply additional qualifying criteria (e.g. amount of gen or load dropped, etc). This can lead to considerable confusion and inconsistency by various entities on the application of this criteria. A simpler approach should be adopted.

The location of generation in the west (WECC) is often far removed from load sources (which is not nearly as prominent as in the east) and because of this, amounts of generation dropped or curtailed and/or load dropped really has different impacts in the WECC compared to the eastern interconnection. The ISO suggests that a definition for SPS/RAS be added to the "WECC Regional Definitions" section of the NERC Glossary of Terms recognizing the existing WECC classification for SPS/RAS, which is WAPS, LAPS and Safety Net. This will result in three simple categories (as opposed to four) without additional qualifying criteria.

Group

Tucson Electric Power

Bill Darmitzel

No

See comments to questions 2 and 3.

No

Proposed change to definition: Replace "Non-Consequential Load Loss \geq 300 MW" with "Non-Consequential Load Loss \geq the lesser of load loss equivalent to the largest Real Power resource within the interconnection or the loss of 1000 MW". The 300 MW non-consequential load loss seems arbitrary and does not include technical justification. In keeping with the concept of balancing load and resources, it seems more appropriate to specify non-consequential load loss equivalent to the largest real power resource within the interconnection as was used for the loss of generation. The clauses to define "significant" seem to relate closely to the WECC Peak RC definition of an IROL. On that basis extending the non-consequential load loss to 1000MW is consistent with the IROL definition and is an amount of load that seems appropriate for the interconnected system. Planning Limited and Extreme Limited schemes should meet the IEEE definition of redundancy and not the more severe single component failure requirement appropriate for Planning Significant schemes. Expansion (contingency additions) to a Limited (PL or EL) Special Protection Scheme should trigger a review scheme classification (PL/PS/EL/ES). They should not require a review and approval of the entire Special Protection Scheme. These additions do not change the function of the schematic model and rely on existing design principles in implementation.

Special Protection Schemes currently classified as a Local Area Protection Scheme or Safety Net should be excluded from the proposed Special Protection Scheme definition. These schemes are a local area risk and not a risk to the BES. As such, the requirements for these schemes should be less stringent.

Additional Comments:

IESO

Tina Teng

1. YES

Comments:

We generally agree with the proposed definition, but the phrase “two or more elements removed” in the first paragraph may be confusing since some of the contingencies for meeting performance requirements identified in the NERC Reliability Standards (e.g. the TPL standards) can result in the loss of two elements (e.g. two circuits on the same tower, two elements loss due to breaker failing to operate to clear initial faults, etc.)

We suggest to either remove this phrase (since it’s already covered by the planning assessment or SOL determination requirements or by extreme contingencies), or add a footnote to indicate the exception (i.e., other than those that can be lost due to the contingencies stipulated in the TPL standard).

2. NO