

**Name (23 Responses)**  
**Organization (23 Responses)**  
**Group Name (14 Responses)**  
**Lead Contact (14 Responses)**  
**Contact Organization (14 Responses)**  
**IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (0 Responses)**  
**Comments (37 Responses)**  
**Question 1 (28 Responses)**  
**Question 1 Comments (33 Responses)**  
**Question 2 (28 Responses)**  
**Question 2 Comments (33 Responses)**  
**Question 3 (27 Responses)**  
**Question 3 Comments (33 Responses)**  
**Question 4 (0 Responses)**  
**Question 4 Comments (33 Responses)**

Individual
Tom Finch
CYPL
City of Palo Alto Utilities
Individual
Eric Scott
City of Palo Alto
Yes
Yes
No
These comments supercede the comments submitted earlier by Tom Finch by mistake. Attachment A "Criteria for a Performance-Based Protection System Maintenance Program" requires a minimum segment population of 60 Components in order to justify a PSMP. We feel the 60 component requirement is arbitrary and discriminates against small entities such as Palo Alto which do not have 60 components and may wish to implement a performance-based PSMP. We feel the decision on whether to use a time-based or performance-based PSMP should be made by the Entity and not NERC.
Individual
Cleyton Tewksbury
Bridgeport Energy
Yes
Yes
No
Individual
Joe O'Brien

NIPSCO
Comment: Test and maintenance data requirements need to be specific and not open to interpretation. Examples: 1. The number of data points required on an impedance circle graph for a relay calibration versus maximum torque angle only. 2. Verification of inputs into microprocessor relay records to include magnitude or is a check box sufficient.
Individual
Thad Ness
American Electric Power
Yes
Yes
We believe the text "Once an entity has designated PRC-005-2 as its maintenance program for specific Protection System components, they cannot revert to the original program for those components" does improve the clarity of the standard.
Yes
On page 82, the text "in accessible" should be correct as "inaccessible".
Group
Northeast Power Coordinating Council
Guy Zito
Northeast Power Coordinating Council
Yes
Yes
No
Individual
J. S. Stonecipher, PE
Beaches Energy Services
Yes
Yes
Applicability does not align with previously approved interpretation of "Transmission Protection System", Appendix 1 of the current V1 standard, that basically says that protection systems applicable to the standard are those that both "detect faults" and "trip" BES equipment. Applicability 4.2.1 says: "Protection Systems that are installed for the purpose of detecting Faults on BES Elements", which does not match "and" relationship of the interpretation. Eliminating this "and" relationship will cause distribution protection to be swept into the standards, such as reverse power relays designed to "detect" faults on the transmission system but "trip" distribution breakers.

Distribution is expressly excluded in Section 215 and these types of relays have no impact on BES reliability. Zero defect approach, should move to what CIP v5 is moving towards of internal controls rather than strict 100% compliance, or even better, a Total Quality Management approach. UFLS and UVLS testing – broaches on distribution which is expressly excluded from Section 215 jurisdiction – when discussing control circuit testing, instrument transformer testing, etc.. We believe the requirement should be relay-only testing. We also believe that the incremental benefit is not worth the increased costs, e.g., one UFLS relay not operating has insignificant impact on a UFLS event; whereas one relay not operating to clear a fault has significant impact.

Group

Southwest Power Pool Reliability Standards Development Team

Jonathan Hayes

Southwest Power Pool

Yes

Yes

Yes

On page 70 of the document we noticed that the word "reakers" was used and would suggest this was intended to be "breakers". Also on page 81 of the document under the section of "My VRLA batteries have multiple-cells within an individual battery jar (or unit); how am I expected to comply with the cell-to-cell ohmic measurement requirements on these units that I cannot get to?" We would suggest that the wording be changed on "in accessible" to remove the space to give you "Inaccessible".

We have a concern that the RE would have difficulty in implementation of the phased in approach. We would suggest extensive training for the auditors for this standard and others which have these multi phased approaches to implementation. With this training it would also be beneficial if NERC would hold a webinar to fill in the industry on the training provided to keep everyone on the same page. We would like to also suggest that NERC compliance staff work with the Drafting Team to develop the RSAWs for this standard.

Individual

Chris McVicker

Puget Sound Energy

Yes

Yes

No

Sealed Battery Maintenance: The requirement of impedance testing the batteries every 6 months seems excessive based on our experience. We have been successfully maintaining our sealed cells with impedance testing at 36 months. CT testing on Neutrals The requirement to verify operation is not possible on the Neutral CT as they don't normally carry current. There should be a clarification that verification of readings can only occur (and is only required) on phase CT's and the neutral CT is excluded. Dual Trip Coil Check In our experience the requirement to verify operation of both trip coils through a trip is overly burdensome and does not improve the reliability of the system. Testing to verify operation of the output relays, proper tripping of the breaker, and verification of trip coil continuity is sufficient to verify the protective system will operate appropriately. Breaker Failure Relay Testing In our experience testing of the breaker failure relay up to the relay outputs is sufficient to ensure proper operation. The tripping of the breakers through the coils is maintained through the individual relay maintenance. Requiring clearing of the main bus during maintenance is not practical and may negatively impact the reliability of the Bulk Electric System.

Individual

Nazra Gladu
Manitoba Hydro
Yes
Yes
<p>Table of Contents - The drawing should be removed from the Table of Contents. Introduction and Summary: [Page 1] - Should include "Canada". The sentence should read "The standards are mandatory and enforceable in the United States and Canada". Protection Systems Product Generations: [page 8] - We suggest changing "control Systems" to "control systems". [Page 28]: "Voltage &amp; Current Sensing Device ..." should be "Voltage and current sensing device ..." [Page 29] "Control Circuit" should not be capitalized. [Page 44] A space is missing: "performance formal-performing segments" should be "performance for mal-performing segments". [Page 45] "Other problems ..." ascribed to batteries may also apply to other Protection System Components, and therefore does not require special mention for batteries. This paragraph should be removed. [Page 67]: Normally-open contacts of relays 94 &amp; 86 should be treated the same as the current-carrying contacts if they are in use.</p>
<p>Manitoba Hydro is maintaining our negative vote based on our previously submitted comments (see comments submitted in the comment period ending on March 28th, 2012. Additionally, Standard PRC-005-2: R3: "minimum maintenance activities" is not specified in the Tables. We suggest removing the word "minimum". R5: It is not clearly stated that the Unresolved Maintenance issues must be identified. As written, only "identified Unresolved Maintenance Issues" are applicable in R5. Measure M1: "responsible entity(s)" is not defined in the standard. The format of examples is inconsistent with the other measures. We suggest replacing "... (such as ... drawings) ..." with "The evidence may include, but is not limited to, manufacturer's specifications or engineering drawings. ...". Evidence Retention: There is no statement in either the requirements or the measures regarding a "dated" PSMP. VSL: R3 - "minimum maintenance activities" is not specified in the Tables. We suggest removing the word "minimum". R5 - We suggest "identified Unresolved Maintenance Issues" to agree with the wording in R5. Table 1.1: The Maintenance Activities statement "For all unmonitored relays:" is redundant since it is specified in the Component Attributes. Table 3: Voltage and current sensing devices for UFLS or UVLS should be excluded from periodic maintenance if they are connected to microprocessors relays with AC measurements continuously verified with alarming, as provided for voltage and current sensing devices in Table 1-3. The wording "Protection System dc supply for tripping non-BES interrupting devices used only for a UFLS or UVLS system" is unclear. It is unclear if "used only for a UFLS or UVLS system" applies to the "Protection System dc supply" or to the "non-BES interrupting devices". Exclusions in Table 1-4(f) which pertain to verifying dc supply voltage should also apply to the dc supply in Table 3. Attachment A - To maintain the technical justification Item 5: for consistency with Item 4 and the VSL, we suggest changing the wording to "If the Components in a Protection System Segment maintained through a performance-based PSMP experience more than 4% Countable Events, develop, document, and implement an action plan to reduce the Countable Events to no more than 4% of the Segment population within 3 years." Technical Justification: "Other problems ..." [page 7] ascribed to batteries may also apply to other Components, and therefore does not require special mention for batteries. This paragraph should be removed. Pages 12 to 13 – The numbering should agree with the standard. Item 10 [page 13] - For consistency with the previous item and the VSL, we suggest changing the wording to "If the Components in a Protection System Segment maintained through a performance-based PSMP experience more than 4% Countable Events, develop, document, and implement an action plan to reduce the Countable Events to no more than 4% of the Segment population within 3 years." The bullet "All of the relevant communication system tests still apply" was added in examples 1 and 2 on pages 68 and 69 of the Supplementary Reference and FAQ – Draft PRC0005-2 Protection System Maintenance (JULY 2012) document (SRFAQ). This makes reference to Table 3 (page 26) of the Standard, but Table 3 does not identify communication systems as a Component Attribute. Table 1-2 (Communications Systems) on page 14 of the standard also excludes the UFLS and UVLS equipment on Table 3. Section 15.7, page 91, of the SRFAQ document also states "No maintenance activity is required for associated communication systems for distributed UFLS and distributed UVLS schemes".</p>

believe that since no communications systems has been identified in Table 3, this bullet cannot be added to the examples identified above in the SRFAQ document. Implementation Plan: Should entities be given a single compliance date for each of the maintenance intervals, and be allowed the flexibility to schedule and complete their maintenance as required while transitioning to the defined time intervals in PRC-002-2. For example, if a maximum maintenance interval is 6 calendar years, should the implementation plan only require that "The entity shall be 100% compliant on the first day of the first calendar quarter 84 months following applicable regulatory approval, or in those jurisdictions where no regulatory approval is required, on the first day of the first calendar quarter 96 months following Board of Trustees adoption."? The existing standard PRC-005-1 already requires protection systems to be maintained as part of a program. Prescribing how an entity must reach full compliance may provide a negligible improvement in reliability, while significantly increasing the compliance burden. PRC-005-2 affects a large number of assets, and proving compliance for prescribed percentages of assets during the transition period may create unnecessary overhead with little added value.

Individual

Keith Morisette

Tacoma Power

Yes

In Table 1-2, for unmonitored communications systems, under Maintenance Activities, 'communication system' is used, but in the next row, 'communications system' is used. These terms should be consistent.

Yes

Yes

On page 88, third bullet, change "auxiliary communications equipment" to "associated communications equipment" for consistency. In Figure A-1, what is meant by "Also verify wiring and test switches"? The emphasis of this question is on 'test switches'.

Individual

Steven Wallace

Seminole Electric Cooperative, Inc.

Florida Municipal Power Agency and the Illinois Municipal Power Agency, Duke Energy and WAPA

Group

Duke Energy

Greg Rowland

Duke Energy

Yes

Yes

No

Duke Energy votes "Negative" because we strongly object to the wording in the Applicability section 4.2.1 which expands the reach of the standard to relaying schemes that detect faults on the BES but which are not intended to provide protection for the BES. Duke Energy's standard protection scheme for dispersed generation at retail stations would become subject to the standard due to the changes in section 4.2.1. These protection schemes are designed to detect faults on the BES, but do not operate BES elements nor do they interrupt network current flow from the BES. The new wording in section 4.2.1 would add significant O&M costs and resource constraints due to the inclusion of protection system devices at retail stations without increasing the reliability of the BES. FERC's

September 26, 2011 Order in Docket No. RD11-5 approved NERC's interpretation of PRC-005-1 R1 and R2, stating: "The interpretation clarifies that the Requirements are "applicable to any Protection System that is installed for the purpose of detecting faults on transmission elements (lines, buses, transformers, etc.) identified as being included in the [BES] and trips an interrupting device that interrupts current supplied directly from the BES." This interpretation is consistent with the Commission's understanding that a "transmission Protection System" is installed for the purpose of detecting and isolating faults affecting the reliability of the bulk electric system through the use of current interrupting devices." Duke Energy proposes the following wording for Section 4.2.1: "Protection Systems that are installed for the purpose of protecting BES Elements (lines, buses, transformers, etc.)".

Individual

Kirit Shah

Ameren

Yes

Ameren supports these changes in the interest of BES reliability.

Yes

Ameren supports this practical reality.

No

Ameren supports PRC-005-2 in the interest of BES reliability. We also appreciate the SDT's overall high quality product and looks forward to its implementation; however, we still assert that 1) the zero tolerance approach, in this case involving significantly large number (thousands) of devices, is an impractical requirement, 2) the VRF for R3 should be Medium, and 3) maintenance records for replaced equipment should not be retained. We' have raised these concerns and justified our position repeatedly but yet not convinced the SDT to change their position.

Group

O&M Group

Joe Uchiyama

US Bureau of Reclamation

Yes

Yes

Yes

(1) We do not agree with no maintenance on the battery monitoring system (2) Also, we do not agree with replacing a battery capacity test by evaluating cell/unit measurements indicative of battery performance against station battery baseline.

None

Individual

Scott Bos

Muscatine Power and Water

Midwest Reliability Organization NERC Standards Review Forum (MRO NSRF)

Individual

test

test

Group

Dominion

Connie Lowe

Dominion
Yes
Yes
No
Page 11 of the PRC-005-2 redline standard, Version History; Previous versions (i.e. 0, 1, 1a, 1b) need to be included here.
Individual
Michelle R D'Antuono
Ingelside Cogeneration LP
Yes
Ingleside Cogeneration LP was prepared to support a six year maintenance interval – which was specified in all other drafts of PRC-005-2. We agree that the project team's modification is necessary to correct a mistake that crept into the last version.
Yes
Ingleside Cogeneration LP sees the modifications to the implementation plan as a clarification-only. We had anticipated that auditors will look for evidence that a legacy program remains in place until a specifically-identified transition date. In fact, the project team should consider adding an allowance for entities to adopt PRC-005-2 immediately upon FERC's approval. This may mean in rare cases that maintenance activities and intervals managed in accordance with PRC-005-1b will drop out of the program; but if the industry and regulatory bodies agree that the new program is superior, there is no reliability purpose served by waiting. Furthermore, the maintenance activities will continue anyways – they will just not be subject to auditor review. Unfortunately, NERC Compliance has taken the opposite position for the implementation of the CIP version 4 "bright-line criteria" – which we believe is counter-productive to our shared commitment to reliability. Just as with PRC-005-2, a thorough evaluation showed that the elimination of ambiguity reduces risk to the greater system. It is disingenuous to require outdated standards to remain in place simply to avoid a possibility that a borderline facility remain on the regulatory books.
No
Group
Southern Company
Antonio Grayson
Operations Compliance
No
Suggestion – Change the interval back to 12 years instead of 6 years. The 12 year interval is reasonable considering that un-monitored communications systems will be functionally tested every 4 months
No
The "General Consideration" sentence in question above is superfluous and therefore unnecessary. The instruction provided in the sentence is (repeated and) more clearly stated in the first sentence of the "Retirement of Existing Standards:" section.
Yes
We strongly suggest that the SDT modify the Applicability section to clarify that Sections 4.2.1 thru 4.2.4 apply to transmission and distribution facilities, and that Section 4.2.5 defines the generator

owner applicability by making changes similar to these proposed below. Without this distinctive change, there exists an ability to mis-interpret Section 4.2.1 such that auditors may apply this standard to a generation scope wider than is specified in the NERC Statement of Registry Criteria (Rev 5). We propose the following changes to 4.2.1 thru 4.2.4: 1) Replace the existing 4.2.1 with "Protection Systems for transmission and distribution Facilities, including:" 2) Move the existing 4.2.1 thru 4.2.4 to subparts of the new 4.2.1 as 4.2.1.1, 4.2.1.2, 4.2.1.3, 4.2.1.4.

Group

IEEE Stationary Battery Committee Task Force

Chris Searles

IEEE Stationary Battery Committee

Chris Searles

Yes

Yes

Yes

In Section 7.1-Frequently Asked Questions, pg 24 - add "or" before "other measurements" inadvertently left out. In Section 8.1.2.4 - 4th & 5th sentences. Consider changing the verbiage: "...The Protection System owner may want to follow the guidelines in the applicable IEEE recommended practices for battery maintenance and testing, especially if the battery in question is used for application requirements in addition to the strict protection and control demands covered under this standard." In section 15.4.1 - (pg 74) "What is the State of Charge..." In the first paragraph on page 74, the first complete sentence, I think the intent is to say "For these two types of batteries, and also for VRLA batteries," . . .

Group

Florida Municipal Power Agency

Frank Gaffney

Florida Municipal Power Agency

Yes

Yes

Applicability does not align with previously approved interpretation of "transmission Protection System", Appendix 1 of the current V1 standard, that basically says that protection systems applicable to the standard are those that both "detect faults" and "trip" BES equipment. Applicability 4.2.1 says: "Protection Systems that are installed for the purpose of detecting Faults on BES Elements", which does not match "and" relationship of the interpretation. Eliminating this "and" relationship will cause distribution protection to be swept into the standards, such as reverse power relays designed to "detect" faults on the transmission system but "trip" distribution breakers. Distribution is expressly excluded in Section 215 and these types of relays have no impact on BES reliability. Zero defect approach, should move to what CIP v5 is moving towards of internal controls rather than strict 100% compliance, or even better, a Total Quality Management approach. UFLS and UVLS testing – broaches on distribution which is expressly excluded from Section 215 jurisdiction – when discussing control circuit testing, instrument transformer testing, etc.. We believe the requirement should be relay-only testing. We also believe that the incremental benefit is not worth the increased costs, e.g., one UFLS relay not operating has insignificant impact on a UFLS event; whereas one relay not operating to clear a fault has significant impact.

Individual

Andrew Z. Pusztai

American Transmission Company



Yes
Yes
No
<p>ATC recommends that the SDT change the text of "Standard PRC-005-2 – Protection System Maintenance" Table 1-5 on page 24, Row 1, Column 3 to: "Verify that a trip coil is able to operate the circuit breaker, interrupting device, or mitigating device." Or alternately, "Electrically operate each interrupting device every 6 years" Basis for the change: Trip coils are designed to be energized no longer than the breaker opening time (3-5 cycles). They are robust devices that will successfully operate the breaker for 5,000-10,000 electrical operations. In addition, many utilities purchase breakers with dual redundant trip coils to mitigate the possibility of a failure. Interrupting devices with multiple trip coils operate the same mechanism. Therefore, by requiring testing of each trip coil in a redundant system you double the amount of times the system is out of its desired state without increasing the performance of the device. It is well recognized that the most likely source of trip coil failure is the breaker operating mechanism binding, thereby preventing the breaker auxiliary stack from opening and keeping the trip coil energized for too long of a time period. Therefore, trip coil failure is a function of the breaker mechanism failure. Exercising the breakers and circuit switchers is an excellent practice to mitigate the most prevalent cause of breaker failure. ATC would encourage language that would suggest this task be done every 2 years, not to exceed 3 years. Exercising the interrupting devices would help eliminate mechanism binding, reducing the chance that the trip coils are energized too long. The language, as currently written in Table 1-5 row 1, will also have the unintentional effect of changing an entities existing interrupting device maintenance interval (essentially driving interrupting device testing to a less than 6 year cycle). ATC continues to recommend a negative ballot since we believe that the testing of "each" trip coil will result in the increased amount of time the BES is in a less intact system configuration. ATC hopes that the SDT will consider these changes.</p>
Individual
Anthony Jablonski
ReliabitliyFirst
Yes
<p>ReliabilityFirst thanks the SDT for changing the maximum time for unmonitored systems within Table 1-2 back to six years. However, RFC continues to believe the language in Requirement R5 ("...shall demonstrate efforts to correct...") is subjective and will be hard to measure. RFC believes at a minimum, the applicable entity should be required to develop a Corrective Action Plan to address the Unresolved Maintenance Issue. Without the formality and burden of a full-fledged Corrective Action Plan, ReliabilityFirst is concerned the identified Unresolved Maintenance Issues may not get resolved or resolved in a timely manner. ReliabilityFirst offers the following modification for consideration: "Each Transmission Owner, Generator Owner, and Distribution Provider shall put in place a Corrective Action Plan to remedy all identified Unresolved Maintenance Issues."</p>
Individual
Yves Lavoie
Primax Technologies Inc.
In 15.4.1 Frequently Asked Questions, to the question: What did the PSMT SDT mean by "continuity"

of the dc supply? One of the proposed methods for ensuring continuity is the following: Specific gravity tests can infer continuity because, without continuity, there could be no charging occurring; and if there is no charging, then specific gravity will go down below acceptable levels. Comment: I agree that the the uncharged cell's specific gravity would drop but it would take weeks or months to show. Should power be needed from the battery during this period of time the battery would not be able to perform as it should. To me this an unacceptable risk

Individual

Bob Thomas

Illinois Municipal Electric Agency

Yes

Yes

Please see response to Question 4.

As indicated in previous comments, Illinois Municipal Electric Agency (IMEA) appreciates SDT efforts, and supports the overall refinements in PRC-005-2. However, IMEA respectfully disagrees with the SDT's decision to not resolve the inconsistency between 4.2.1 and the FERC-approved interpretation in PRC-005-1b. Whether the term "transmission Protection System" is used in PRC-005-2, as indicated in the SDT response to our comments, is not the point. The interpretation in PRC-005-1b provides clarity to smaller entities in particular regarding which protective devices need to be factored into compliance with PRC-005 (and other PRC standards). This inconsistency should have been more clearly vetted within the industry given the fact that this was a recently NERC- and FERC-approved Protection System interpretation which was being compromised by the proposed language in 4.2.1. Once again, we find ourselves aiming at a constantly moving compliance target. This issue has the potential to require more DPs to comply with PRC-005, and draw more small entities into registration, which of course would require increased resource expenditures associated with compliance. This issue does not appear to be consistent with NERC and FERC efforts to minimize the impact on smaller entities that have minimal or no potential to impact the BES. If the 4.2.1 language was carefully considered so as not to unnecessarily impact small entities, it would be appreciated that these provisions be more clearly addressed in the "Supplementary Reference and FAQ". Thank you for this opportunity to comment. This issue is significant enough that IMEA felt a Negative vote was unfortunately necessary on an otherwise significant improvement to PRC-005.

Group

Luminant

Brenda Hampton

Luminant Energy Company LLC

Yes

Yes

Yes

Group

Western Area Power Administration

Brandy A. Dunn

Western Area Power Administration (Corp. Services Office)

Yes

No
The logistics of these statements are confusing and need further clarification as to intent and implementation.
Yes
Yes. The standard itself should be more clearly written so that a 100+ page Supplementary Reference and FAQ Document is not needed. This document is also not enforceable, nor is it a standard, so verbiage which interprets the standard and forces requirements should be removed.
Western feels that our comments and concerns as provided on the previous comment form were not adequately addressed. Those comments are repeated below: Western Area Power Administration is appreciative of the hard work done by the SDT and NERC. We respectfully submit our professional opinion that the increased relay testing required by the PRC-005-2 will result in a net degradation to the reliability of the BES due to human hands disturbing working systems. We propose that auxiliary relays be tested at commissioning and anytime the circuits are rewired or redesigned. If there is evidence that the relay has functioned properly in its current configuration then the best practice for ensuring reliability is to leave it alone. The maintenance interval of 6 years for lock-out relay testing is not consistent with 12 year interval of auxiliary relay testing or control circuit testing. No justification is provided for this increased testing interval of lock-out relays versus other electro-mechanical devices. These inconsistent testing intervals, within the same protection control schemes and protective devices, will complicate the industry's Protection System Maintenance Program and cause an increase in maintenance costs. Condition Based Monitoring or Performance Based Monitoring are not allowed on trip coil circuits or lock-out relays. This is inconsistent with current or future technology. Deviation from the 6 year testing interval should be allowed, using CBM or PBM. The Standard should not present a barrier to technology advancements or industry initiatives. The continuous, frequent testing of these devices is detrimental to system reliability. Disagree with testing of the dc control portion of the sudden pressure device as defined by the FAQ. We feel that this device and its wiring were deemed out of scope previously. Do not use the FAQ to modify the standard. The FAQ should strictly be used for clarification only. A standard that relies on a lengthy FAQ and multiple CAN's needs to be re-written concisely and clearly.
Individual
Eric Salsbury
Consumers Energy
1. We agree with the purpose in section 3 of the Standard. However, section 4.2.1 expands the scope from "affecting the reliability of the Bulk Electric System" to "detecting Faults on BES Elements". In our opinion, the Applicability should be limited to the stated Purpose. Expanding the scope as is done in 4.2.1 greatly increases the number of Protection Systems covered without an increase in reliability of the BES. We prefer the applicability as expressed in Appendix 1 of PRC-005-1b. 2. We suggest changing "Component Type" in R1.2 to something similar to "Segment" as defined within the Standard. A "Component Type" limits to one of five categories, whereas a "Segment" must share similar attributes.
Individual
Jonathan Meyer
Idaho Power Company
Yes
Yes
No

None
Group
Nebraska Public Power District
Cole Brodine
Nebraska Public Power District
Yes
Yes
No
Keeping records after the end of the audit period does not increase the current reliability of the electric grid. Requiring records to be kept for longer time periods will increase the risk to utilities of making a mistake in their record keeping and receiving a fine due to the zero tolerance policy drafted in the standard. Records beyond the audit period, up to 24 years old, don't have any effect on the reliability of the current bulk electric system. A key concern is will the reliability of the bulk electric system be affected negatively due to increased risk from human element initiated events as a result of the more frequent functional trip checks that will be required. I suggest there be consideration that the interval for functional tests be moved to the minimum frequency of 12 years to minimize this unknown but present risk. We recommend removing requirement 5. This is adding the requirement for a corrective action program to the standard. Performance metrics should be utilized to measure if a registered entity is correcting maintenance deficiencies in a timely manner. Examples of performance metrics include: -A Countable event has already been defined in the definition of terms, which would cover the need to replace equipment. -The quantity and causes of Misoperations are a direct correlation to good or poor maintenance practices and corrective actions by a utility. -TADS records events which are initiated by failed protection system equipment and would identify utilities with poor corrective action processes.
Group
ACES Standards Collaborators
Jason Marshall
ACES Power
Yes
Yes
We thank the drafting team for this consideration that will allow early compliance with the new version of the standard. This plan should avoid many of the transitional issues that have occurred with other new versions of standards.
Yes
We suggest that the document should clarify Table 1-4(f). We understand from conversations with drafting team members that not all component attributes have to be met for the exclusion to apply. Rather each component attribute only has to be met individually for the exclusion to apply. We appreciate the drafting team including the localized definitions in the supplementary reference document. However, we believe there is still confusion with the use of component. Component is capitalized within the definition but it is not capitalized throughout the document. We believe the term should be capitalized throughout the document to be clear the localized definition applies. Capitalization of most instances of "system" has been correctly removed since the NERC definition was not consistent with the use. However, there are a few instances where it was removed and should not have been. One example occurs in the second paragraph on page 5 in the red-line document where "system collapse" should be "System Collapse". In the third paragraph on page 5 in the red-line document, "transmission" should be capitalized since the NERC definition would be

applicable.
The drafting team has done an outstanding job refining the standard. Because no standard will ever be perfect, we believe industry and reliability would be best served to move the standard to recirculation ballot at this point. Regarding Requirement R1 VSLs, we continue to believe that missing three component types should not jump to a Severe VSL when missing two is a Moderate VSL. Missing three should be a High VSL.
Group
Tennessee Valley Authority
Dennis Chastain
Tennessee Valley Authority
Yes
The intent of this modification is not clear. It could be interpreted as allowing an entity, for any given Protection System component identified in Table 1-1 through Table 1-5, to choose to maintain those components under an existing maintenance program that is compliant with the legacy standards until PRC-005-2 completely retires PRC-005-1b, PRC-008-0, PRC-011-0 and PRC-017-0 (first calendar quarter one hundred fifty-six (156) months following regulatory approval of PRC-005-2). For example, if an entity elects to maintain unmonitored communications system components described in Table 1-2 using its program that is compliant with the legacy standards, when would it have to meet the intervals defined in Table 1-2? The use of "or" under "General Considerations" indicates that compliance with the legacy standards is acceptable until such time that all of the legacy standards are retired.
No
TVA appreciates the work that the standard drafting team has done on PRC-005-2. As stated in our comments on Draft 3, TVA is concerned with the maximum maintenance interval of 4 calendar months specified for unmonitored communications systems in Table 1-2, and for that reason has voted negative. A longer implementation timeframe is needed for replacement of the unmonitored units.
Individual
Brad Harris
CenterPoint Energy
Yes
Yes
No
CenterPoint Energy recommends that PRC-005-2 include a built-in tolerance and move away from a zero-defect enforcement model. Achieving one-hundred percent schedule and documentation compliance is negatively impacting resources on an industry-wide basis for the sake of the "last one percent" and is not needed to provide an adequate level of BES reliability. Entities should be allowed the opportunity to correct minor deficiencies discovered in the program via customary mitigation activities as part of an internal controls policy and good utility practice instead of via the enforcement channel. One possible avenue for incorporating such a tolerance into the Standard is to establish a threshold for the Lower VSL. For example, the Lower VSL for requirement R3 could state: "For Protection System Components included within a time-based maintenance program, the responsible entity failed to maintain more than 1% but 5% or less of the total Components included within a specific Protection System Component type in accordance with the minimum maintenance activities and maximum maintenance intervals prescribed within Tables 1-1 through 1-5, Table 2, and Table 3."

Group
Bonneville Power Administration
Chris Higgins
Transmission Reliability Program
No
BPA believes that changing the language from "channels" to "communications systems" does not clarify the intent since "communications systems" is not defined in the standard. The term "communications systems" which is referenced in the Supplementary Reference and FAQ document remains ambiguous. BPA recommends one of these two definitions be included in the standard: 1) If the intent is to cover only the Communications Equipment and "channel" as defined above: "Communications System" – The Communications System as defined for the purposes of PRC-005-02 consists of a Component's signaling inputs and outputs and the communications channel that these signals traverse. The intervening carrier communications devices that transport this channel are explicitly excluded from the definition of Communications System. 2) If the intent is to cover the Communications Equipment, "channel" and the cloud functionally: "Communications System" – The Communications System as defined for the purposes of PRC-005-02 consists of a Component's signaling inputs and outputs and the communications channel that these signals traverse. The Communications System includes the simple end-to-end functionality of the intervening carrier communications devices that transport this channel but explicitly excludes intermediate switching, redundant paths, packet routing, digital cross-connections and other "cloud" carrier elements from the definition of Communications System.
Yes
No
BPA appreciates that the Standards Development Team does not believe that communications batteries are included in PRC-005-2 standard. While BPA believes the SDT did not intend to include communications batteries in the standard, this intention is neither captured by the language of the standard nor explicit in the Supplementary Reference and FAQ document. Ambiguity on regulation of communications batteries provides no benefit and comprises a concrete regulatory risk to BPA during an audit. BPA strongly believes that the standard should articulate exactly what types and applications of batteries it means to regulate and which batteries it does not.
Individual
Brett Holland
KCP&L/ KCPL-GMO
Yes
Yes
No
Individual
Edward Amato
Midtronics Inc
Yes
Yes

Yes

The paragraphs below are from page 83 of the document (page 89 of the pdf). The first paragraph below contains the words, "risen above" and "over" a baseline. For conductance trending would be going below a baseline. Since this is a technical standard I think there should be a comment noting the difference in trending of conductance as compared to resistance and impedance like it is in the next paragraph. For VRLA batteries, there are two drivers for internal ohmic readings. The first driver is for a means to trend battery life. Trending against the baseline of VRLA cells in a battery string is essential to determine the approximate state of health of the battery. Ohmic measurement testing may be used as the mechanism for measuring the battery cells. If all the cells in the string exhibit a consistent trend line and that trend line has not risen above a specific deviation (e.g. 30%) over baseline, then a judgment can be made that the battery is still in a reasonably good state of health and able to 'perform as manufactured.' It is essential that the specific deviation mentioned above is based on data (test or otherwise) that correlates the ohmic readings for a specific battery/tester combination to the health of the battery. This is the intent of the "perform as manufactured six-month test" at Row 4 on Table 1-4b. The second big driver is VRLA batteries tendency for thermal runaway. This is the intent of the "thermal runaway test" at Row 2 on Table 1-4b. In order to detect a cell in thermal runaway, you need not necessarily have a formal trending program. When a single cell/unit changes significantly or significantly varies from the other cells (e.g. a doubling of resistance/impedance or a 50% decrease in conductance), there is a high probability that the cell/unit/string needs to be replaced as soon as possible. In other words, if the battery is 10 years old and all the cells have approached a significant change in ohmic values over baseline, then you have a battery which is approaching end of life. You need to get ready to buy a new battery, but you do not have to worry about an impending catastrophic failure. On the other hand, if the battery is five years old and you have one cell that has a markedly different ohmic reading than all the other cells, then you need to be worried that this cell is in thermal runaway and catastrophic failure is imminent.