

Individual or group. (27 Responses)
Name (20 Responses)
Organization (20 Responses)
Group Name (7 Responses)
Lead Contact (7 Responses)
Question 1 (25 Responses)
Question 1 Comments (27 Responses)

Individual
James Stanton
SPS Consulting Group Inc.
No
The revised definition perpetuates the confusion over "communications systems" embedded or otherwise associated with Protection Systems. The term "communications components" is more accurate.
Individual
Martin Bauer
US Bureau of Reclamation
No
The term "protection functions" is ambiguous as it is not related to the protection function associated with the protective relays. There are other protection functions not associated with protective relays that respond to electrical quantities. The language for Communication systems should be changed to remove the ambiguity. The following change would be clear, "Communication system necessary for the correct operation of the protective relays" The input to the relays is from voltage and current sensing devices through their respective circuits. Since the definition for protective relays separates the term "control circuitry" associated with protective relays, it is clear that protective relays does not also include the "control circuitry". By the same token, voltage and current sensing devices do not include their related circuits. The definition for voltage and current sensing devices should be revised to include the term "circuits". The following language change would serve make it clear: "Voltage and current sensing devices and their respective circuits providing inputs protective relays,".
Individual
Karl Bryan
US Army Corps of Engineers
No
The use of the term "protection functions" is not a defined NERC term and either the term should be defined or it should not be used. At best the term is ambiguous and could lead to scope growth by auditors. Recommend that the following changes be made: "Communication system necessary for the correct operation of the protective relays." "Control circuitry associated with protective relays through the trip coil(s) of the circuit breaker or other interrupting device." See the next paragraph for the proposed correction to the DC Supply part of the definition. The input to the relay is from voltage and current sensing devices yet there is no mention of the associated circuits. The same can be said about the station DC supply circuits. The definition should apply to the circuits providing inputs or control power to the protective relays and from the output of the relays to the tripping coils of the circuit breaker. Recommend the following: "Voltage and current sensing devices and their respective circuits providing inputs to the protective relays." "Station DC supply associated with protective relays (including station batteries, battery charger, non-battery-based DC supply,circuitry to the protective relays and from the relay to the trip coil(s)of the circuit breaker), and"
Group
NERC Staff
Mallory Huggins
No
NERC staff does not support the phrase "voltage and current sensing devices providing input to protective relays." While no version of the definition has been all-inclusive with respect to this phrase.

we believe that the best phrase would be a combination of several drafts and should state the following: "voltage and current sensing devices and associated circuitry from the voltage and current sensing devices to the protective relay inputs." As currently written, the definition represents a step backward from the language in the previous definition ("voltage and current sensing inputs to protective relays and associated circuitry from the voltage and current sensing devices") and should be modified.

Individual

Kirit S. Shah

Ameren

Yes

Group

Arizona Public Service Company

Jana Van Ness, Director Regulatory Compliance

Yes

Group

Northeast Power Coordinating Council

Guy Zito

No

This project addresses the definition of a Protection System. However, an ongoing issue that needs to be addressed is clarification of when a Bulk Electric System transmission Protection System applies to a Distribution Provider. An example would be for a tee-tap off a Bulk Power System 345kV line to a step down transformer supplying distribution--would the relaying on the low side of the transformer be expected to comply with the requirements of PRC-005-2? Would the protection system configuration be considered a Protection System? Will this issue be addressed within the scope of Project 2007-17?

Individual

Greg Froehling

Green Country Energy

Yes

Individual

Dan Roethemeyer

Dynegy Inc.

No

The majority of the definition is good; however, the term "non-battery-based dc supply" is still somewhat vague. Can you please further define or provide some examples?

Individual

Paul Rocha

CenterPoint Energy

No

(a) CenterPoint Energy believes the proposed re-definition of "Protection System" is technically incorrect due to the inclusion of trip coils as part of the control circuitry. A protection system has correctly performed its function if it provides tripping voltage up to the terminals of trip coils. From that point, the circuit breaker can fail to timely interrupt fault current due to several factors, such as a binding mechanism, stuck mechanism, broken pull rod, bad insulating medium, or bad trip coils. Local breaker failure protection, or remote backup protection, is installed to address the various possible causes of circuit breaker failure. The proposed re-definition of "Protection System" should be revised to indicate control circuitry associated with protective functions UP TO THE TERMINALS OF the trip coil(s) of the circuit breakers or other interrupting devices. (b) On the surface, the proposed re-definition of "Protection System" appears mainly applicable to PRC-005 based upon the Standards

Announcement and proposed Implementation Plan. However, NERC standard PRC-004-1 Analysis and Mitigation of Transmission and Generation Protection System Misoperations also uses the capitalized term "Protection System". CenterPoint Energy believes it is inappropriate to require reporting of Misoperations of transmission Protection Systems and generator Protection Systems for bad trip coils within a circuit breaker. For application to PRC-004-1, CenterPoint Energy recommends revising the proposed re-definition to indicate control circuitry associated with protective functions UP TO THE TERMINALS OF the trip coil(s) of the circuit breakers or other interrupting devices.

Individual

Robert Ganley

LIPA

Yes

Station dc supply associated with protective functions (including station batteries, battery chargers, and non-battery-based dc supply), and Change to Station dc supply associated with protective functions, and....

Individual

Andrew Z. Pusztai

American Transmission Company

Yes

None.

Individual

Thad Ness

American Electric Power (AEP)

No

This change in definition needs to occur concurrently with other related projects (PRC-005-2). The SDT nor the SC should establish a practice of making changes to definitions outside the parameters of changes to standards. This will introduce opportunities to confuse and does not provide the appropriate signals to the Registered Entities to adjust their programs and make the appropriate changes. If this has to be done faster than the pace of the current PRC-005-2 project, we suggest it still be paired with that project, but a smaller scope be considered to allow for this to pass quickly as possible and then the remaining work can be accomplished in PRC-005-3. We suggest that the SDT consider the creation of sub-definitions opposed to crafting a single term for complex and diverse components that could make up the "Protection System." As it stands, AEP cannot support this as it still does not remove the degree of ambiguity that could result in interpretation challenges during later enforcement and monitoring activities. We understand the urgency to make progress; however, the deliverables of this team can have significant collateral impacts in the compliance process. The bullet for Protective relays should be further clarified with the addition of "applied on or designed to provide protection for the BES that respond to the electrical fault or disturbance conditions." Below are the comments that were provided in the second draft that were not adequately addressed in the consideration of the comments. The definition as drafted includes "Station dc supply." While this appears reasonable and innocuous, the term is unclear and could be construed by an auditor to include a lot of equipment and infrastructure not intended by the PSMT SDT. For example, station battery chargers are typically supplied by station auxiliary power transformers, which in turn are supplied by primary-voltage bus work, primary-voltage fuses, or primary-voltage circuit breakers. An auditor for either PRC-005 or any other Standard referencing "Protection System" could read that such primary-voltage equipment is part of the Protection System and therefore subject to certain requirements in either PRC-005 or any other Standard referencing Protection System. The definition as drafted includes "Communications systems necessary. . . ". Once again, this term appears innocuous, but it is actually unclear. For example, if a transfer-trip channel is carried on a microwave path, an auditor may decide that the entire microwave equipment, microwave building battery, and microwave building emergency generator are all part of the Protection System, and thus subject to requirements in either PRC-005 or other existing or future Standards that refer to Protection System. AEP recommends that the term be phrased "communications paths" opposed to "communications systems". Similar to the above two items, we are concerned about the inclusion of voltage and current-sensing "devices" in the Definition. As written, applicability can be inferred to the entire device and not merely its output quantities, not only for this Standard but any other that references a

Protection System. AEP recommends the phrase "circuitry from voltage and current-sensing devices providing inputs to protective relays" instead of "voltage and current-sensing devices providing inputs to protective relays."

Group

Bonneville Power Administration

Denise Koehn

Yes

Individual

Kasia Mihalchuk

Manitoba Hydro

Yes

Individual

Kathleen Goodman

ISO New England Inc.

Yes

Individual

Patti Metro

NRECA

My comment is related to the Implementation plan which will modify the PER-005. I am specifically concerned with changing in R3.1 "established operating guides or "protection systems" to mitigate IROL violations" to "established operating guides or "Protection Systems" to mitigate IROL violations". This modification changes the intent of requirement PER-005 R3.1. The requirement was developed by the drafting team to address an Order 693 directive to require the use of simulators by reliability coordinators, transmission operators and balancing authorities that have operational control over a significant portion of load and generation. The System Personnel Training SDT felt that the use of the phrase "established IROls or has established operating guides or protection systems to mitigate IROL violations" appropriately represents the impact of entities on the reliability of the BES. In the context of PER-005 R3.1, this specific language was used to broadly include anything that an entity utilizes to prevent an IROL which could be an "operating guide or a protection system" like a RAS in WECC or an SPS in the Eastern Interconnection. It was not intended to include all the items included in the term that is being defined in Project 2007-17.

Individual

RoLynda Shumpert

South Carolina Electric and Gas

Yes

Individual

Terry Harbour

MidAmerican Energy

No

The drafting team did not properly address previous comments to include BES references in each PRC-005 sub bullet definitions and left "DC system" wording in the definition with only a comment in parentheses. The Protection System definition affects multiple standards and must stand alone across those standards. Therefore: 1. BES references are still needed in each sub bullet definition to eliminate ambiguity and to create clearly auditable requirements, meeting a basic standards drafting principal being requested both by FERC and the industry. 2. "DC system" remains a wide open definition. Because regulators and auditors are auditing to "zero" defect requirements and imposing their own interpretations, only specific wording is acceptable. The term "DC system" needs to be replaced with explicit pieces of equipment such as "batteries, battery chargers, and AC / DC

converters". To be a credible audit process, both the auditor and audited entity must have a clear understanding of what is being audited. DC system can be interpreted in many ways by an entity or auditor and is not an acceptable term. Further, BES references are needed to create clear and auditable boundaries for this definition.
Group
WECC
Steve Rueckert
The definition is generally acceptable. However, we believe that better language for the third bullet is as follows: DC supply sources affecting the "Protection System" (including station batteries, battery chargers, and non-battery-based dc supply), and... A definition of non-battery-based dc supply should be included to avoid confusion and we offer the following: The inverter or rectifier in the circuit, dependent upon how the end use equipment is designed. Uninterruptible power supply (UPS) such as on-line, line-interactive or standby that some of the protection system could be on. The intent of the suggestion would consider that the entire protection system has to operate in order to maintain the reliability of the BES. An example would be if the protective relay and associated communications were on a UPS system and the intended device to operate were on station batteries, this would be the best case scenario as the Micro processors relays and the newer associated communications do not like the voltage drop when the station switches to the station batteries, hence the use of UPS options. Micro processors relays do have internal battery backup to keep them up and running, though a maintenance task would have to be included to be sure that they are properly maintained and tested, so the UPS option is easier and has been "kind of" an industry standard in the past. In the end the UPS would have to be on a maintenance schedule also.
Individual
Michael Lombardi
Northeast Utilities
Yes
Individual
Dan Rochester
Independent Electricity System Operator
No
While we agree with the definition itself, we do have a concern about its application. An ongoing issue that needs to be addressed is clarification of when a Bulk Electric System transmission Protection System applies to a Distribution Provider. This was addressed in part in the interpretation request regarding transmission Protection Systems, Project 2009-17. An example would be for a tee-tap off a Bulk Power System 345kV line to a step down transformer supplying distribution -- would the relaying on the low voltage side of the transformer be expected to comply with the requirements of PRC-005-2? Would the protection system configuration be considered a Protection System? Will this issue be addressed within the scope of Project 2007-17?
Individual
Jason L. Marshall
Midwest ISO
No
We have an issue with the implementation plan. The implementation plan proposes to capitalize the term "protection system" in NUC-001-2, PER-005-1, and PRC-001-1. We disagree with capitalizing the term because protection system was a defined term when these standards were written. Thus, if the drafting teams of those standards intended for the definition in the NERC glossary of terms to apply, they would have capitalized the term. Furthermore, capitalizing the term may fundamentally alter the meaning of the standard. For PER-005-1, we believe the standard is altered because protection system as used in this standard actually refers to special protection system or remedial action schemes.
Individual
Greg Rowland
Duke Energy

Yes
We agree with the revised definition. However the added language raises a question regarding how PRC-005-2 would be applied to DC supply situations where the battery is the backup to the "normal" source of DC power. Specifically, it's unclear to us that Uninterruptible Power Supplies (UPS), rectifiers and motor-generator sets that use batteries as a backup are included in the scope of Table 1.
Individual
Alice Murdock Ireland
Xcel Energy
Yes
The Implementation Plan indicates that the lower case "protection system" in 3 other standards would be replaced with the capitalized term "Protection System" to properly reflect its use in those standards. In PRC-001 the term "protective system" is also used, however the Implementation Plan does not indicate whether this term will also be replaced. If not, then it would seem to imply that the term "protective system" has different meaning than "protection system/Protection System". There is concern that the use of "Protection System" in PRC-001 will require entities to 'coordinate" changes to all elements of the Protection System, which could be of no value for elements such as batteries, battery chargers. It is not clear as to if the intent that ALL elements of the Protection System be coordinated when a new or changed Protection System occurs.
Group
IRC Standards Review Committee
Ben Li
Yes
Group
Kansas City Power & Light
Michael Gammon
No
The phrase, "non-battery-based dc supply" is ambiguous and not well defined. It is critical this definition be clear in its intent and not introduce confusion to allow maintenance programs to be effective. Recommend this phrase either needs additional definition or should be considered for removal.