

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Project 2019-04

Modifications to PRC-005

Brian Kasmarzik (Ameren Services Company), SAR Drafting Team Chair
Industry Webinar
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RELIABILITY | RESILIENCE | SECURITY



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- Notice of Open Meeting
 - Participants are reminded that this webinar is public. The access number was widely distributed. Speakers on the call should keep in mind that the listening audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

- Welcome and Introductions – **Laura Anderson**, NERC Standards Developer
- Standard Authorization Request (SAR) drafting team responsibilities – **Brian Kasmarzik**, Ameren Services Company
- Background – **Brian Kasmarzik**
- Overview – **Brian Kasmarzik** and **Giuseppe Giannuzzi**, Hydro-Quebec
- Next Steps – **Laura Anderson**
- Questions & Answers – **Project 2019-04 SAR drafting team**

- Drafting Team Fundamentals
 - SAR drafting team responsibilities:
 - Identify the reliability concerns that require the creation, modification, or retirement of a standard.
 - Provide the scope of work for the future standard drafting team (SDT).
 - The SAR drafting team may provide factors for the SDT to consider, but ultimately the responsibility for modifying, creating, or retiring the standard rests upon the SDT.
 - If the SAR is approved by the Standards Committee, the SDT will be appointed to modify the standard.
 - Participation as an active member or observer is highly encouraged.

- Background

- Original SAR was submitted by the North American Generator Forum
 - Asking for clarity within PRC-005 specifically regarding protective functions inside Automatic Voltage Regulators (AVRs).
 - Drafting Team and Industry Comments:
 - Based on industry feedback, the SAR drafting team determined that the original scope of the SAR only addressed a specific technology (synchronous generators).
 - The root cause of confusion is the lack of clarity around protective functions and the applicability of functions historically provided by relays into control systems, including excitation control systems.
 - An additional SAR was presented that had been submitted by Hydro-Quebec in regard to battery maintenance for non-traditional battery technologies.
 - The team was asked to include the Federal Energy Regulatory Commission-approved changes to registration as part of the Risk Based Registration (RBR) initiative by specifying Underfrequency Load Shedding (UFLS)-only Distribution Providers (DPs) in the Applicability Section.

- Second SAR Posting
 - Included the following modifications:
 - Addressed protective functions within analog/digital AVRs, excitation systems, and other control systems.
 - Addressed protective functions that act to cease injecting current or trip BES elements either directly or via lockout or auxiliary tripping relays.
 - Included SAR drafting team consideration of the NERC Glossary of Terms and the definition of Protection System and protective function (not currently defined) as opposed to the clarifications being made within the PRC-005 standard itself.
 - Applicable to all BES elements, including distributed generation at point of aggregation.
 - Consolidated the SAR from Hydro-Quebec to include modifications to the standard to specify maintenance activities for emerging battery technologies.
 - Included the addition of UFLS-only DPs in accordance with the RBR Initiative.

- Concerns over “cease injecting current”
 - Does this impact the existing exclusion for individual generating resources at dispersed power producing resources?
 - Momentary cessation occurs at the individual turbines.
- Confusion around control systems:
 - All control systems? Only control systems with protective functions? Only control systems with BES protective functions.
 - Which protective functions? Are “mechanical” protective functions included (i.e. turbine overspeed, winding temperature, etc.)?
- Concerns with the addition of battery maintenance for “emerging technology”
 - Is this already covered by Table 1-4(d)?
 - Is this in addition to the existing maintenance tables?
 - What is “emerging technology”?

Latest PRC-005 SAR Posting

- Comment Period
 - Extended to February 26th, 2021
- Notable Changes
 - Clarifications to Protective Functions and Control Systems
 - BES protective functions enabled within excitation systems (including analog/digital AVR).
 - BES protective functions enabled within other control systems.
 - Respond to electrical quantities and trip BES elements either directly or via lockout or auxiliary tripping relays.
 - The clarity that is needed is regarding protective functions inside excitation systems and control systems which are not stand-alone relays, but otherwise perform as part of a BES Protection System.
 - If it receives the same AC quantities as a protective relay and responds in the same way as a protective relay, then it should be treated as part of a BES Protection System.
 - “Cease to inject current” has been removed.

- Emerging Technology changed to Alternative Technology
 - Meant to capture technologies such as Lithium-Ion and flow batteries, which do not currently have specified maintenance in PRC-005-6.
 - Table 1-4(d) covers non-battery based alternative technologies, but not battery-based.
 - Any additional tables or modifications to tables would be applicable only to DC Supply technologies that are not covered under existing tables (in place of, not in addition to, the existing defined activities).

- Current SAR version posted for formal comment period January 14 through February 26, 2021.
- The SAR drafting team will review comments received from industry and determine next steps.
- Industry Webinar slides and recording will be available on the NERC website.
- Contact Laura Anderson with any questions: laura.anderson@nerc.net or 404-446-9671.



Questions and Answers