NERC

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Project 2023-06: CIP-014 Risk Assessment Refinement

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RELIABILITY | ACCOUNTABILITY




Project Overview

- Project 2023-06: Revise CIP-014-3 to CIP-014-4
- The drafting team for Project 2023-06 was formed in November 2023
  - SAR revisions were completed in late December
  - Drafting of the revised standard began in January 2024
- Posting for initial balloting is scheduled for May 20 to July 5
- The goal is for approval by the end of 2024
- Observers have made significant contributions to CIP-014-4

SAR Overview

- The scope of the SAR is limited to CIP-014-3 R1, with modifications as follows:
  - Clarify the risk assessment methods for studying instability, uncontrolled separation, and Cascading within an Interconnection. The methods should account for dynamic studies.
  - Clarify the case(s) used for the risk assessment to be tailored to the Requirement R1 in-service window and correct any discrepancies between the study period, frequency of study, and the base case(s) a Transmission Owner uses.
  - Assure the adequacy and consistent implementation of technically supported justification for study decisions. Clarity should include specificity regarding the documentation, and usage of criteria to identify instability, uncontrolled separation, or Cascading within an Interconnection occur as part of a risk assessment.
  - Clarify what study scenario(s) and other study assumptions are appropriate and reasonable considering the intent of CIP-014-3 and the potential range of issues during a physical attack. Simulations should incorporate the loss of station elements without the reliance on local system protection.
  - Clarify how to account for adjacent Transmission stations or Transmission substations of differing ownership as well as for those Transmission stations or Transmission substations within line-of-sight to each other.

Revised Standard

- The drafting team attempted to address each of the items in the SAR
  - Maintain a balance between a better definition of the requirements without being overly prescriptive
  - Acknowledgement of existing industry practices developed in response to the 2021 CMEP guidance and other sources such as NATF and TPL-001
  - R1 is being broken into additional requirements
    - R1: Applicability
      - The schedule will be every 36 months for everyone
    - R2: Proximity Criteria
      - Each TO must define how it handles proximity
    - R3: Methodology
      - Each TO must have a methodology
    - R4: Coordination of jointly owned facilities
    - R5: Conducting the risk assessment

New and Updated Requirements – R1

- R1: Applicability
  - The criteria for stations considered to be applicable is largely unchanged from CIP-014-3
    - The only significant change is for stations that are in proximity when none are individually applicable
      - In this case, the stations would be evaluated for applicability as if they were combined into a single substation
      - This situation is rare but it is known to occur
- M1: The list of applicable stations

New and Updated Requirements – R2

- R2: Proximity
  - Each TO shall have a documented criteria for identifying substations that are in proximity
  - At a minimum, the criteria shall include:
    - Line of site
    - Ease of access
    - Close enough proximity that a single event can impact multiple stations
- M2: The criteria and list of stations that meet the proximity criteria

New and Updated Requirements – R3

- R3: Risk Assessment Methodology
  - This is the most significant change because CIP-014-3 was largely silent
  - R3: Requires a documented risk assessment methodology
    - 3.1: Rationale for determining acceptable load loss, generation loss, and post-event response
      - 3.1.1: List of conditions to monitor
      - 3.1.2: Documented thresholds for load loss and acceptable generation loss
    - 3.2: Requirement for dynamic and steady state simulations for each applicable substation
      - There is an “off ramp” for stations that are determined to be critical by steady-state or dynamic simulations

New and Updated… R3 (continued)

- R3: Risk Assessment Methodology
  - 3.3: Fault simulations
    - 3.3.1: Bolted 3-phase fault at highest voltage level for single substations
    - 3.3.1: Single-phase faults at highest voltage levels for stations in proximity
  - 3.4: Loss of communications and system protection
    - 3.4.1: Delayed clearing unless otherwise justified
    - 3.4.2: Use of actual instead of generic clearing times unless otherwise justified
- M3: Documentation of risk assessment methodology

New and Updated Requirements – R4

- R4: Joint Ownership
  - TOs are required to coordinate with other owners of jointly owned stations to determine responsibilities for risk assessments
- M4: Documentation of coordination

New and Updated Requirements – R5

- R5: Performing the risk assessment
  - To be performed every 36 months
    - The 36 month period was chosen to align when study cases are released
    - The previous 30-month period made this difficult
- If a station is classified as critical, then no additional assessments need to be performed for as long as the station is classified as critical
- Previous requirement for identifying the primary control center for each critical substation is unchanged
- M5: Documentation of the risk assessment

Remaining Requirements R6 – R10

- The scope of the SAR was limited to CIP-014-3 Requirement R1
  - CIP-014-3 Requirements R2 through R6 have simply been renumbered

Summary and Implementation Plan

- The revised standard better defines the requirements for the risk assessments and how proximity determines how applicable stations are to be studied
  - Requirements for CIP-014-3 risk assessments were effectively determined by the 2021 CMEP guidance
  - CIP-014-4 eliminates the previous ambiguity about what is required in the assessments
- The draft implementation plan is for the effective date to be 24 calendar months after approval
  - A risk assessment that fulfills CIP-014-4 requirements should also be acceptable for CIP-014-3

Questions and Answers