

Compliance Solutions

for NERC critical infrastructure protection standards

NERC CIP-014-1 – Physical security requirements support

At a glance

The goal of the North American Electric Reliability Corporation (NERC) Reliability Standards is to protect and maintain the reliability of the North American Bulk Electrical System (BES). Critical Infrastructure Protection (CIP) standards address the physical security and cybersecurity of the critical electricity infrastructure of North America.

The NERC Reliability Standard *CIP-014-1 – Physical Security* requires transmission owners and transmission operators to identify and protect transmission stations, transmission substations and their associated primary control centers that would be deemed critical if rendering such assets “inoperable or damaged as a result of a physical attack could result in widespread instability, uncontrolled separation, or cascading within an Interconnection.” Furthermore,

the standard reinforces that steps must be taken to address these threats and vulnerabilities that present the greatest risk to reliability if damaged or inoperable.

Requirements and measures

There are six notable requirements with this standard, with the results of Requirements R1 and R2 placing a heavy emphasis on the applicability of the remaining requirements.

- **Requirement R1** mandates the applicable transmission owners perform an initial risk assessment (and subsequent risk assessments) of its existing and planned transmission stations and transmission substations to identify critical facilities on their systems. Additionally, the transmission owner will be responsible for identifying the primary control center that operationally controls each

transmission station or transmission substation that is identified in the Requirement R1 risk assessment.

- **Requirement R2** calls for each applicable transmission owner to have an unaffiliated third party with appropriate experience to verify the risk assessment results performed under Requirement R1. Modifications that are consistent with the verifier’s recommendation should be implemented, or further technical basis for not doing so should be documented.
- **Requirements R3 through R6** highlight requirements for transmission owners and/or operators to conduct evaluations of potential threats and vulnerabilities of a physical attack to each of its respective transmission station(s), substation(s) and primary control center(s) as identified in Requirement R1 and verified in Requirement R2. Latter requirements mandate the development and implementation of a physical security plan that addresses potential threats and vulnerabilities, as well as a third-party verification of this plan.

Our solution

Regardless of a transmission owner's or a transmission operator's current progress in meeting the compliance requirements for the CIP-014-1 reliability standard, Siemens PTI's comprehensive expertise in power system planning allows us the ability to offer an "a la carte" solution tailored specifically to each customer's requirements. Whether the needs are particularly in the area of identification of critical facilities on a system and the risk assessments associated with Requirement R1, a need for an independent third-party verifier, or both, Siemens PTI can offer support to meet the compliance requirements. Our extensive knowledge, skills and experience with NERC MOD and TPL standards, combined with our technical insight into facility ratings and equipment attributes has enabled us to design the most effective and efficient study methodologies to provide an objective verification of study results.

In an effort to significantly reduce the time and cost associated with these study efforts, Siemens PTI has developed a unique, proprietary simulation solution of integrated automation software tools for CIP-014-1 compliance that is capable of completing the required analysis at a fraction of the time and cost of traditional simulation methods. The Power System Simulator for Engineering (PSS®E) analysis software accomplishes both automated dynamic stability execution and result assessment.

The experts at Siemens PTI are globally renowned for their in-depth knowledge built over decades of experience. By contributing actively to national and international committees and bodies, such as the NERC Reliability Standards Committee and IEEE Standards Working Groups, our consultants have an

active role in shaping the future of technical developments and standards. Having this deep understanding allows for Siemens PTI to provide recommendations and alternative methodologies that should be considered in CIP-014-1 study efforts.

North American transmission owners seeking a timely, cost-effective and proven solution can leverage Siemens PTI's vast industry expertise, from planning through operations, to comply with the CIP-014-1 reliability standard with a customized solution that fits their needs.

Did you know?

Siemens offers an end-to-end solution for compliance with the CIP-014-1 Physical Security reliability standard. With Siemens PTI conducting the initial risk assessments and/or the third-party verification set forth in Requirements R1 and R2, Siemens Building Technologies and their "best-in-class" partners provide security assessments, as well as the development and implementation of a physical security plan for compliance with Requirements R4 through R6.

How to get started

For further information, please contact Siemens PTI consulting sales at pti-consulting.ptd@siemens.com or +1 518 395 5000.

Siemens Industry, Inc.

Siemens Power Technologies International
400 State Street
P. O. Box 1058
Schenectady, NY 12301-1058

Subject to change without prior notice.

Order No: IC1000-E240-A189-X-4AUS

All rights reserved

Printed in the USA

©2018 Siemens Industry, Inc.

The technical data presented in this document is based on an actual case or on as-designed parameters, and therefore should not be relied upon for any specific application and does not constitute a performance guarantee for any projects. Actual results are dependent on variable conditions. Accordingly, Siemens does not make representations, warranties, or assurances as to the accuracy, currency or completeness of the content contained herein. If requested, we will provide specific technical data or specifications with respect to any customer's particular applications. Our company is constantly involved in engineering and development. For that reason, we reserve the right to modify, at any time, the technology and product specifications contained herein.