



NERC Reliability Standards

Comprehensive Solutions to NERC PRC and CIP Compliance Evaluation

The NERC Reliability Standards are a set of mandatory regulations that define requirements for the planning and operation of the North American Bulk Electric System (BES). These standards typically involve extensive review of data and engineering aspects and require substantial consideration for workflow management and data processing, in addition to the technical engineering effort. Complying with the NERC Reliability Standards can pose significant challenges to utilities and other applicable entities, particularly in process and data management aspects.

Service Offerings

Quanta Technology provides comprehensive solutions to the challenges of compliance with NERC Protection and Control (PRC) and Critical Infrastructure Protection (CIP) Reliability Standards, offering an extensive package of capabilities to support compliance evaluation studies from start to finish. These capabilities may be employed as a complete solution to meeting PRC and CIP Standards requirements or taken in part to support existing compliance programs and/or evaluations of a more specific scope.

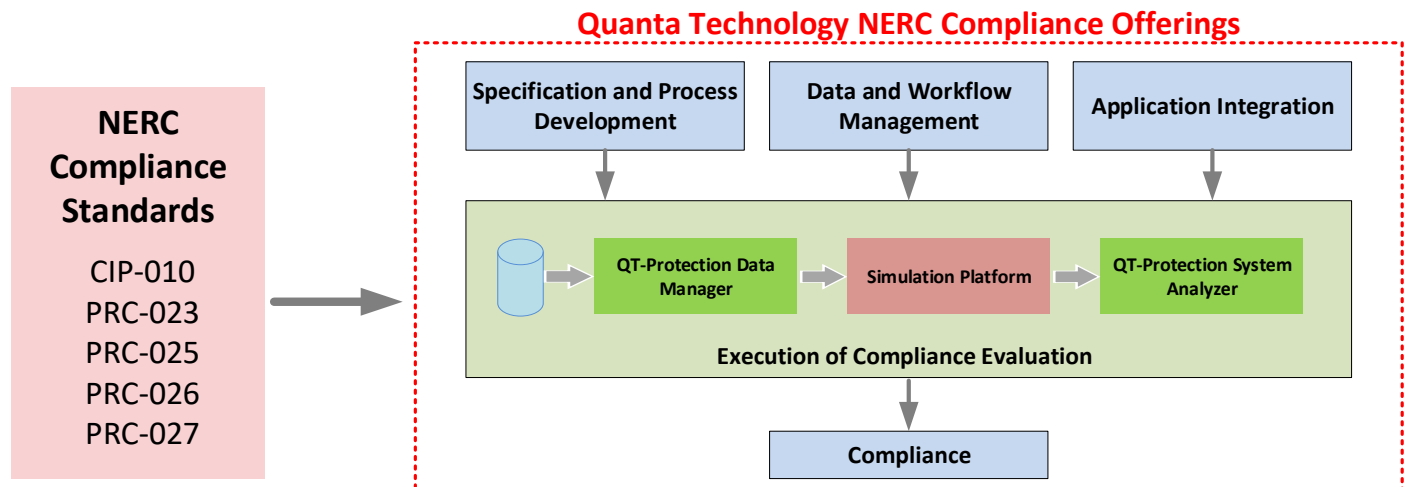
Quanta Technology offers solutions that leverage the benefits of software-based automation, enabling the compliance evaluation studies to be conducted in a reliable and standardized manner.

Quanta Technology's support includes:

- Specification of standard requirements and development of approach and process for evaluation
- Data and workflow management through defined procedures and software applications
- Integration of applications to facilitate data integration, compliance evaluation, results analysis, and report generation
- Execution of compliance studies using the above aspects

Why Quanta Technology

Quanta Technology has developed a suite of tools as an integrated solution to NERC PRC and CIP Reliability Standards compliance. These custom-developed applications support compliance evaluation from start to finish and offer a robust set of capabilities that can be used as part of an integrated evaluation process or as individual elements to support aspects of existing compliance procedures. Depending on the standard under study, these tools may interact with industry-standard power systems software and database platforms (e.g., ASPEN, CAPE, CYME, Powerbase) as part of the evaluation process, or may feature their own evaluation engine to determine compliance with





Quanta Technology provides solutions for the following major Reliability Standards:

➤ **PRC-027: Coordination of Protection Systems for Performance During Faults**

Establishment of procedures and execution of processes to enable the systematic coordination review of Protection Systems

➤ **PRC-023: Transmission Relay Loadability**

Evaluation of protective relay settings to ensure they do not limit transmission loadability

➤ **CIP-010: Configuration Change Management and Vulnerability Assessment**

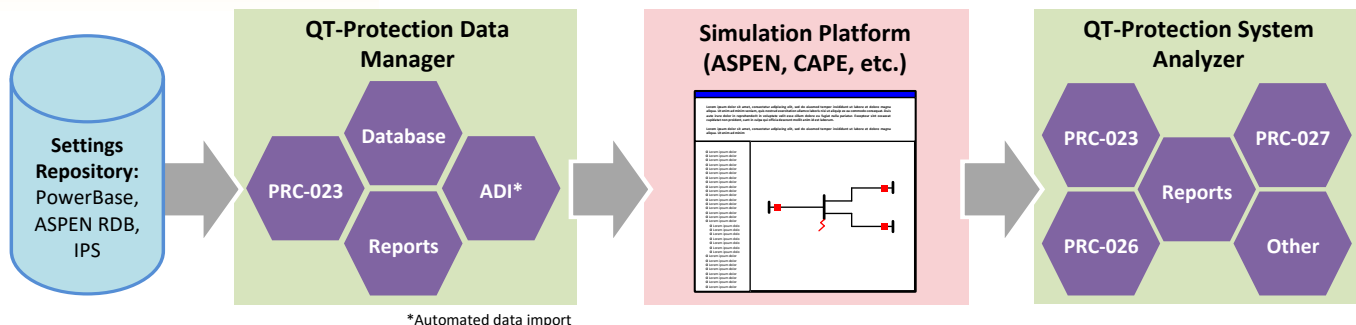
Evaluation of protective relay configurations against a defined baseline and approval processes for configuration changes

standards requirements. Each application may be customized to meet the needs and preferences of each individual client.

The **QT-Protection Data Manager (QT-PDM™)** is a data processing and management application utilized to obtain and prepare the data required by compliance evaluation studies. Data, such as relay settings, may be obtained through file import or through direct interface with settings repositories. It is then processed into the format required by the simulation platform (ASPEN/CAPE) for studies. The Automated Data Import (ADI) function greatly simplifies the transfer of settings. This tool supports standalone evaluation for certain NERC Reliability Standards or may be used in conjunction with industry-standard software platforms. In addition to the data processing functions, QT-PDM™ also features database and tracking capabilities to enable management of data and compliance studies. This application supports a number of NERC PRC and CIP Standards, including PRC-023, for standalone evaluation.

The **QT-Protection System Analyzer (QT-PSA™)** is a post-processing and reporting application utilized to organize the evaluation results generated by industry-standard power systems simulation platforms (CAPE, ASPEN, etc.). QT-PSA™ has the capability to perform analysis on the evaluations according to user-specified criteria and to present the results for an entire system in a user-friendly manner. To accommodate regulatory or internal documentation requirements, QT-PSA™ can generate working summaries of system compliance and audit-ready reports. This application supports a number of NERC PRC Standards, including PRC-027, and can be extended as the need arises.

Through the use of the QT-PDM™ and QT-PSA™ applications and industry-standard simulation platforms, Quanta Technology offers reliable and standardized automation-based solutions for NERC Reliability Standards compliance evaluation.



About Quanta Technology

Quanta Technology is an independent technology, consulting, and testing company providing business and technical expertise, along with advanced methodologies and processes, to utilities and others in the power and energy industries. Our mission is to provide unparalleled value to our clients in every engagement across the value chain by using advanced software and hardware, laboratories, and custom tools for a holistic approach to practical service and the most insightful thought leadership in the industry.

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Practical Results*

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