

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Operational Reliability Data

Technical Rationale and Justification for
Reliability Standard TOP-003-5

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RELIABILITY | RESILIENCE | SECURITY



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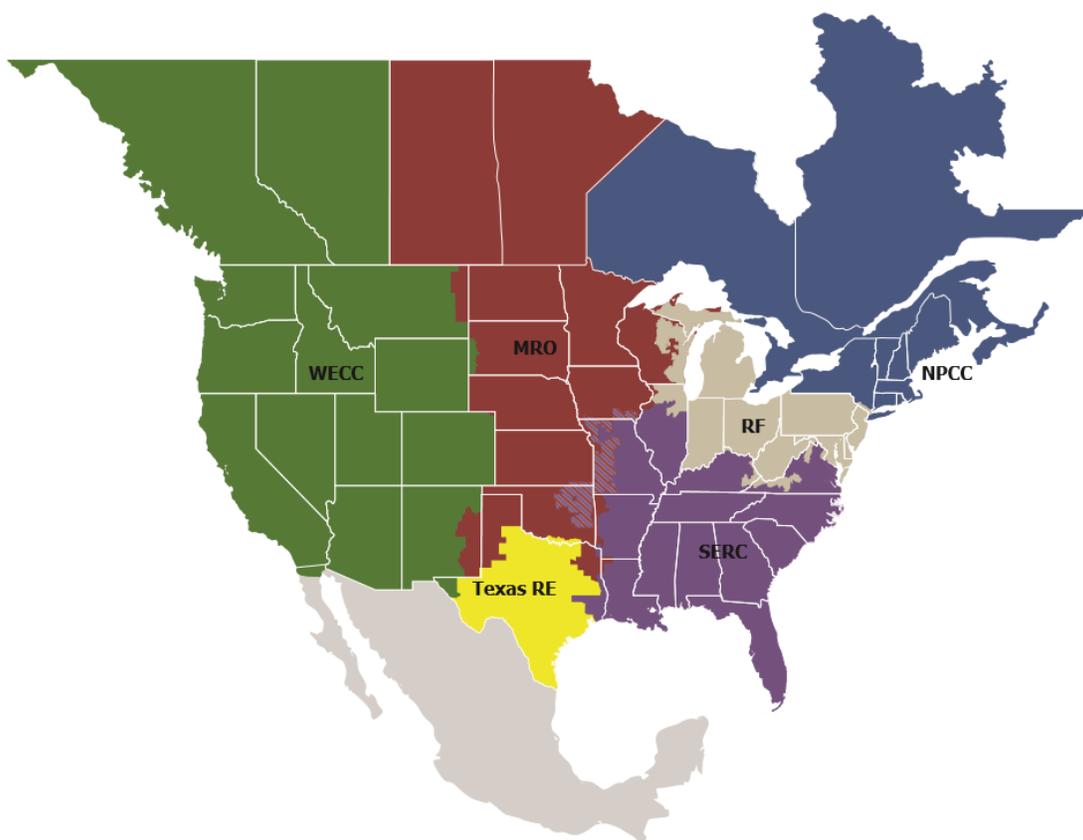
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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is divided into six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standard TOP-003-5. It provides stakeholders and the ERO Enterprise with an understanding of the Cold Weather requirements in the Reliability Standard. It also contains information on the intent of the Standard Drafting Team (SDT) in drafting the requirements. This Technical Rationale and Justification for TOP-003-5 is not a Reliability Standard, which is not mandatory and enforceable.

Requirement R1

Rationale for R1.3 and R2.3.

The Requirements contained in Requirements R1 Part 1.3 and Requirement R2 Part 2.3 are in response to the recommendations contained in the *2019 FERC and NERC Staff Report on The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018* (Report). The Report recommends reliability standards be implemented that require communication protocols for the Balancing Authorities to receive generating unit ambient temperature design temperatures, capabilities, and limitations associated with cold weather conditions for use in operational analysis and determination of contingency reserves. The SDT determined that both the Balancing Authority and Transmission Operator are appropriate entities to receive this information.

To implement the Report's recommendations, the SDT has included new data specifications for Transmission Operators and Balancing Authorities in Requirements R1 Part 1.3 and Requirement R2 Part 2.3, respectively. The data specifications are consistent with the data information the Generator Owner is required to collect regarding its generating unit(s) pursuant to EOP-011-2 Requirement R7 and the Balancing Authorities must include in its Operating Plans pursuant to EOP-011-2 Requirement R2 Part 2.2.3. IRO-010-3 has corresponding changes.

Appendix 1: Technical Rational for Reliability Standard TOP-003-5

Guidelines and Technical Basis

Rationale:

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for Definitions:

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

Rationale for R1:

Changes to proposed Requirement R1, Part 1.1 are in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Transmission Operator to fulfill its responsibilities. Proposed Requirement R1, Part 1.2 is in response to NOPR paragraph 78 on relay data. The language has been moved from approved PRC-001-1. Corresponding changes have been made to Requirement R2 for the Balancing Authority and to proposed IRO-010-2, Requirement R1 for the Reliability Coordinator.

Rationale for R5:

Proposed Requirement R5, Part 5.3 is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.