NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Project 2018-03 - Standards Efficiency Review Retirements

Technical Justifications

Background:
The North American Electric Reliability Corporation (NERC) Project 2018-03 – Standards Efficiency Review (SER) Retirements, was established for the Standard Drafting Team (SDT) to evaluate each recommendation for retirement identified in the Standard Authorization Request (SAR).

The Reliability Standards have their origins in the voluntary consensus Operating Guides and Planning Standards. These original documents were modified into what we currently know as the "Version 0" standards. The objective of the added granularity to the requirements was to support the reliable operation of the Bulk Electric System (BES). These requirements were prescriptive, and meant to provide an industry-wide approach to achieving the reliability objectives of the standards. In the last 10 years, the industry has matured and adopted compliance through the Reliability Standards, and the continuance of the added granularity of the requirements do not contribute to the efficiency and effectiveness of Reliability Standards.

In 2010, NERC determined that absolute, "do exactly as the standard dictates" requirements, in some cases, did not satisfy the reliability goal and required the entity to perform specific actions to be compliant, while not effectively adding to the overall reliability goal. NERC then embarked on a shift in the standards paradigm to what is now known as 'results-based standards,' wherein the standards specify what reliability results from the requirements, while affording entities flexibility in achieving those results. The development guidance, provided by NERC, can be found at the following link:

https://www.nerc.com/pa/Stand/Resources/Documents/Results-Based_Reliability_Standard_Development_Guidance.pdf

Many of the requirements that the Project 2018-03 SDT are proposing to retire in this project pre-date the maturity of the results-based standards paradigm. As a result, those requirements are overly prescriptive and often express the same obligation in several standards and requirements.

Purpose:
The purpose of the Technical Justification Document is to assist in the understanding of the technical rationale associated with each recommendation for retirement identified in the SAR.

Technical Justifications for Phase I of Project 2018-03 Standards Efficiency Review - Retirements

BAL-005-1, Requirements R4 and R6
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain

Rationale
The SDT determined these requirements should be retained for the following reasons:

Requirements R4 and R6 of BAL-005-1 are requirements specific to the calculation of the Area Control Error (ACE). TOP-010-1(i) Requirement R2 covers ACE with the wording of "…analysis functions and Real-time monitoring…" but does not cover specifics, such as: quality flags for missing or invalid data that is part of BAL-005-1, Requirement R4, or the accuracy of scan rates that is part of BAL-005-1, Requirement R6.

In TOP-010-1(i), Requirement R2 (revised from TOP-010-1) covers the calculation and monitoring of ACE; however, the language: "Each Balancing Authority (BA) shall implement an Operating Process or Operating Procedure to address the quality of the Real-time data necessary to perform its analysis functions and Real-time monitoring," is only addressing quality. In BAL-005-1 (revised from BAL-005-0.2b) Requirement R4 states: "The BA shall make available to the operator information associated with reporting ACE including, but not limited to, quality flags indicating missing or invalid data." Requirement R6 of BAL-005-1 states: "Each BA that is within a multiple BA Interconnection shall implement an Operating Process to identify and mitigate errors affecting the accuracy of scan rate data used in the calculation of the Reporting ACE for each BA area." Both of these requirements are specific to identifying missing or invalid data plus scan rates, not just the quality of the Real-time data.

The SER Phase I team will communicate with the SER Phase II team regarding Requirements R4 and R6 of BAL-005-1 to determine if there is opportunity for revisions to TOP-010-1(i), Requirement R2, that would satisfy the missing or invalid data plus scan rates. If the SER Phase II team takes an approach for such determinations, and then finds that there is that opportunity, then Requirements R4 and R6 of BAL-005-1 may be candidates for retirement within that project or a future project.

COM-002-4, Requirement R2
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

While training on communications protocols would fall into an entity's systematic approach to training, the requirements do not explicitly mandate training on communications protocols. It is essential for all operators to have a common level of understanding, and be trained in three-part communication. During development of COM-002-4, it was determined that because PER-005-2 would not meet the NERC Board of Trustees (BOT) November 7, 2013 Resolution to mandate training, that the SDT include a requirement

to conduct initial training in order to ensure that a baseline of training is complete before an individual is placed in a position to use the communications protocols. Requiring initial training is not overly burdensome to an entity, and any subsequent training can be covered in PER-005-2, or through the operator feedback loop as determined by the entity.

The SER Phase I team will communicate with the SER Phase II team regarding Requirement R2 of COM-002-4 to determine if there is opportunity for revisions to PER-005-2, Requirement R2 that would satisfy the training requirements specific to training on communications protocols. If the SER Phase II team takes an approach for such determinations, and then finds that there is that opportunity, then Requirement R2 of COM-002-4 may be a candidate for retirement within that project or a future project.

EOP-005-3, Requirement R8
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

The PER-005-2 standard entails training processes; however, it is does not specifically provide for System restoration training. In PER-005-2, the requirement to provide System restoration training no longer exists. In fact, the rationale to remove the minimum training requirement specific to System restoration from PER-005-1 was, in part, based on the existence of the former Requirement R10 in EOP-005-2 (Requirement R8 of EOP-005-3) and Requirement R9 in EOP-006-2 (Requirement R7 of EOP-006-3). If Requirement R8 in EOP-005-3 is removed, then there will not be any requirements to provide System restoration training to operating personnel in any of the Reliability Standards.

A specific requirement for System restoration training should be maintained because, while a System shutdown is a low probability, it could have a high impact if not done properly. The SER Phase I team will communicate with the SER Phase II team regarding Requirement R8 of EOP-005-3 to determine if there is opportunity for revisions to PER-005-2 that would satisfy the training requirements specific to System restoration training. If the SER Phase II team takes an approach for such determinations and then finds that there is that opportunity, then Requirement R8 of EOP-005-3 may be a candidate for retirement within that project or a future project.

EOP-006-3, Requirement R7
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

The PER-005-2 standard entails training processes; however, it is does not specifically provide for System restoration training. In PER-005-2, the requirement to provide System restoration training no longer exists. In fact, the rationale to remove the minimum training requirement specific to System restoration from PER-005-1 was, in part, based on the existence of former Requirement R9 in EOP-006-2

(Requirement R7 of EOP-006-3). If Requirement R7 in EOP-006-3 is removed, then there will not be any requirements to provide System restoration training to operating personnel in any of the Reliability Standards.

A specific requirement for System restoration training should be maintained because, while a System shutdown is a low probability, it could have a high impact if not done properly. The SER Phase I team will communicate with the SER Phase II team regarding Requirement R7 of EOP-006-3 to determine if there is opportunity for revisions to PER-005-2 that would satisfy the training requirements specific to System restoration training. If the SER Phase II team takes an approach for such determinations and then finds that there is that opportunity, then Requirement R7 of EOP-006-3 may be a candidate for retirement within that project or a future project.

FAC-008-3, Requirements R7 and R8
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined these requirements should be retired for the following reasons:

These requirements are duplicative of the data provision standards MOD-032-1, IRO-010-2, and TOP-003-3. In MOD-032-1, Requirement R1, the Planning Coordinator (PC) and Transmission Planners (TP) develop modeling data requirements and reporting according to Attachment 1. In MOD-032-1, Requirement R2, the Transmission Owner (TO) and Generator Owner (GO) provide power capabilities data in Item 3, and facility ratings data in Items 3(f), 4(c) and 6(g) in the steady-state column of Attachment 1, as requested by the TP or PC.

IRO-010-2, Requirement R1, and TOP-003-3, Requirement R1 require the Reliability Coordinator (RC) and the Transmission Operator (TOP) to list necessary data and information needed to perform its Operating Planning Analyses and Real-Time Assessments. This data includes facility ratings as inputs to System Operating Limits (SOL) monitoring. IRO-010-2, Requirement R3, and TOP-003-3, Requirement R5, require that the TO and the GO to respond to the RC's and the TOP's requests.

FAC-013-2 Requirements R1, R2, R4, R5 and R6 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined this standard should be retired for the following reasons:

The requirement for PCs to have a methodology for and to perform an annual assessment of Transfer Capability for a single year in the Near-Term Transmission Planning Horizon does not benefit System reliability beyond that provided by other Reliability Standards. This Reliability Standard is primarily administrative in nature and does not require specific performance metrics or coordination among functional entities. In general, FAC-013-2 fails to meet System reliability objectives in the following ways:

- Assessing transfer capability above the "known commitments for Firm Transmission Service and Interchange" required by TPL-001-4 (R1.1.5), serves a market function as opposed to securing System reliability.
- Individual PCs develop their own methodologies that may be disparate from each other.
- Impacted functional entities, such as the TP, do not have meaningful input into the methodology or analysis.
- The standard does not specify performance metrics or define what acceptable System performance is.
- Entities that receive the methodology or assessment results are not obligated to use or consider the information in their assessments.
- Requirement R4 only requires the assessment be performed for one year in the Near-Term Transmission Planning Horizon. The PC can arbitrarily choose this year, and the analysis does not guarantee transmission service that is necessary for System reliability.

Assessing transfer capability in the planning horizon is a method to test the robustness of the System. Robustness testing of a System is not an indicator of reliability because there is no metric for robustness. Additionally, the proposed retirement of FAC-013-2 does not preclude any entity from performing studies to assess transfer capability for their own purposes. The reliability benefit of doing such an assessment varies from entity to entity, with some entities not having a benefit for the assessment of it at all. The 2013 NERC Independent Experts Review Project (IERP) identified Requirements R2 and R3 as administrative and recommended them for retirement. Requirement R3 was approved for retirement by the Federal Energy Regulatory Commission (FERC) in 2014.

INT-004-3.1 Requirements R1, R2 and R3 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale

The SDT determined this standard should be retired for the following reasons:

INT-004-3.1 may be retired since it satisfies Paragraph 81 Criteria 'B6 – Commercial or Business Practice.' Interchange scheduling and congestion are elements that impact transmission costs, rather than actual reliable management of the BES. Furthermore, the applicable entity for Requirements R1 and R2, the Purchasing-Selling Entity (PSE), has been removed from the list of NERC Functional Entities, supporting the market-based observations herein. Requirement R3 specifically refers to "Pseudo-Ties that are included in the North American Energy Standards Board (NAESB) Electric Industry Registry," reinforcing the tie to the NAESB Wholesale Electric Quadrant (WEQ) Business Practice Standards.

INT-006-4, Requirements R3.1, R4, and R5
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined these requirements should be retired for the following reasons:

INT-006-4, Requirement R3 Part 3.1 can be retired under Paragraph 81, Criterion A. There is no substantive impact on reliability with requiring the RC to be notified when a Reliability Adjustment Arranged Interchange has been denied.

INT-006-4, Requirement R4 can be retired under Paragraph 81, Criteria A and B7. Covered in NAESB e-Tagging specifications, Section 1.6.3.1 and Section 1.3, Request State. This requirement outlines the conditions that must exist for an Arranged Interchange to transition to Confirmed Interchange. NAESB Electronic Tagging Specification Section 1.6.3.1 and Section 1.3, Request State, stipulate these exact requirements. INT-006-4, Requirement R4 is being recommended for retirement. The requirement is accomplished through a BA's e-Tag Authority Service and does not have an impact on reliability.

INT-006-4, Requirement R5 can be retired under Paragraph 81, Criteria A and B7. This is covered in NAESB e-Tagging specifications, Section 1.6.4. This requirement outlines who is notified when the transition to Confirmed Interchange occurs. NAESB Electronic Tagging Specification, Section 1.6.4, stipulate these exact requirements. INT-006-4, Requirement R5, is being recommended for retirement; the requirement is accomplished through a BA's e-Tag Authority Service and does not have an impact on reliability.

INT-009-2.1, Requirement R2
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined this requirement should be retired for the following reasons:

This requirement can be retired under Paragraph 81, Criterion B7. INT-009-2.1, Requirement R2, is redundant with the approved NERC Reliability Standard BAL-005-1, Requirement R7.

INT-010-2.1 Requirements R1, R2 and R3 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined this standard should be retired for the following reasons:

The opportunity exists to retire Reliability Standard INT-010-2.1 in its entirety.

INT-010-2.1, Requirement R1: (1) Retire under Paragraph 81, Criteria B6 and B7 and (2) the IERP also recommended INT-010-2.1 Requirement R1 for retirement. More stringent tagging requirements already

exist in NAESB WEQ-004-1. Therefore, this requirement is duplicative and does little, if anything, to benefit or protect the reliable operation of the BES.

INT-010-2.1, Requirement R2: (1) Retire under Paragraph 81, Criteria B6 and B7 and (2) the IERP also recommended INT-010-2.1 Requirement R2 for retirement. More stringent tagging requirements already exist in NAESB WEQ-004-8. Therefore, this requirement is duplicative and does little, if anything, to benefit or protect the reliable operation of the BES.

INT-010-2.1, Requirement R3: (1) Retire under Paragraph 81, Criteria B6 and B7 and (2) the IERP also recommended INT-010-2.1 Requirement R3 for retirement. More stringent tagging requirements already exist in NAESB WEQ-004-1. Therefore, this requirement is duplicative and does little, if anything, to benefit or protect the reliable operation of the BES.

IRO-002-5, Requirements R1, R4 and R6:
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire Requirement R1, Retain Requirements R4 and R6
Rationale
The SDT determined that Requirement R1 should be retired for the following reasons:

Requirement R1 of IRO-002-5 is redundant to other requirements in the Interconnection Reliability Operations and Coordination (IRO) family of standards. Requirement R1 and data exchange for the Operational Planning Assessment (OPA) is inherent to Requirement R2 that has a higher Violation Risk Factor (VRF) and is tied to the OPA in IRO-010-2, Requirement R3. The requirement is a control for aiding compliance with IRO-008-2, Requirement R1, related to the performance of an OPA, and it is duplicative to Requirement R3 in IRO-010-2. The purpose statement of IRO-010-2 is for the RC: "To prevent instability, uncontrolled separation, or Cascading outages the adversely impact reliability, by ensuring the Reliability Coordinator has the data it needs to monitor and assess the operation of its Reliability Coordinator Area." The Purpose statement of IRO-008-2 is for the RC to: "Perform the analysis to prevent instability, uncontrolled separation, or Cascading" and with the data collected per IRO-010-2. The data exchange capabilities are indicated in IRO-010-2, Requirement R3, which includes BA's and TOPs, and IRO-008-2, Requirement R1, requires the RC to perform the OPA, which makes IRO-002-5, Requirement R1, redundant with the aforementioned standards and requirements.

IRO-010-2 (R1) requires the RC to identify the data it needs to perform its OPA's, Real-time monitoring, and Real-time Assessments. Requirement R1 clearly states what is required, 1.1 A list of data and information needed by the RC to support its OPA, Real-time monitoring, and Real-time assessments including non-BES data and external network data, as deemed necessary by the RC, 1.2 Provisions for notification of current Protection System and Special Protection Systems status or degradation that impacts System Reliability, 1.3 A periodicity for providing data, 1.4 The deadline by which the respondent is to provide the indicated data. Requirement R2 clearly states, "The RC shall distribute its data specifications to entities that have data required by the RC's OPAs, Real-time monitoring, and Real-time Assessments. Requirement R3 gets to the core of the data exchange capabilities "Each RC, BA, GO, GOP, Load-Serving Entity (LSE), TOP, TO, and Distribution Provider (DP) receiving a data specification in

Requirement R2 shall satisfy the obligations of the documented specifications using 3.1 A mutually agreeable format, 3.2 A mutually agreeable process for resolving data conflicts, 3.3 A mutually agreeable security protocol. Additionally, to comply with IRO-008-2, Requirement R1, the RC must have received all of the data it needs to perform the OPA. Finally, Measure M1 for IRO-002-5, Requirement R1, states that an entity needs to have documentation describing its data exchange capabilities with other entities, which is administrative in nature. As such, the IRO-002-5, Requirement R1, is not needed to support reliability and can be retired.

The SDT determined that Requirements R4 and R6 should be retained for the following reasons:

IRO-002-5, Requirements R4 and R6 are necessary for the Real-time operators to be assured of having the tools necessary to monitor the BES; therefore, retirement of these requirements is not being sought during this phase of the project.

The requirements in IRO-010-2 shall satisfy the obligations of identifying the data required and means for delivering the data for the Operational Planning Analysis Real-time monitoring, and Real-time Assessments. This data exchange is accomplished via a redundant/secure communications, such as Inter Control Center Communication Protocol (ICCP), email, voltage schedules, outage scheduling that all RCs, BAs and TOPs use to exchange the required data.

IRO-008-2, Requirement R6
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

Although IRO-008-2, Requirement R6, appears to be administrative in nature, there are reliability benefits to knowing what actions were taken to prevent or mitigate the exceedance. Therefore, retirement of IRO-008-2, Requirement R6, is not being sought during this phase of the project.

IRO-014-3, Requirement R3
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

The reliability objective of “notification” is mandated as a part of the RC having and implementing Operating Procedures, Operating Processes, or Operating Plans that include criteria and processes for notifications (Requirement R1, Part 1.1); this ensures RC operations are coordinated to maintain reliability of the BES. As such, a separate requirement for ensuring notifications are made to impacted RCs is duplicative. However, the IRO-014-3, Requirement R1, time horizon would need to be revised to a time horizon of “Real-time” if Requirement R3 were to be retired. Revision of Requirement R1 is outside the

scope of the project, so retirement of IRO-014-3, Requirement R3, is not being sought during this phase of the project.

The SER Phase I team will communicate with the SER Phase II team regarding Requirement R3 of IRO-014-3 to determine if there is opportunity for revision to IRO-014-3, Requirement R1, that would satisfy the revision of the time horizon to "Real-time." If the SER Phase II team takes an approach for such determinations and then finds that there is that opportunity, then Requirements R3 of IRO-014-3 may be a candidate for retirement within that project or within a future project.

IRO-017-1, Requirement R3
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this requirement should be retained for the following reasons:

IRO-017-1 is not entirely duplicative of TPL-001-4, Requirement R8. The RC should be added as a named recipient to TPL-001-4 prior to considering IRO-017-1, Requirement R3, for retirement.

The SER Phase I team will communicate with the SER Phase II team regarding Requirement R3 of IRO-017-1 to determine if there is opportunity for revisions to TLP-001-4 that would satisfy the adding of the RC as a named recipient. If the SER Phase II team takes an approach for such determinations and then finds that there is that opportunity, then Requirement R3 of IRO-017-1 may be a candidate for retirement within that project or within a future project.

MOD-004-1, MOD-008-1, MOD-028-2, MOD-029-2a, MOD-030-3, MOD-001-1a and proposed MOD-001-2
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined these standards should be retired for the following reasons:

Available Transfer Capability (ATC)/Available Flowgate Capability (AFC), as well as e-Tags, are commercially-focused elements, facilitating interchange and balancing of interchange. The Real-time System operators are ambivalent of these commercial arrangements, as they must maintain reliability of the BES according to System Operating Limits (SOLs) and Interconnection Reliability Operating Limits (IROLs). If a scheduled interchange would violate SOLs or IROLs, the Real-time operators must disregard the scheduled interchange and operate the System to its actual reliability limits.

MOD-002-1: Entities are not required to determine Total Flowgate Capability (TFC), Total Transfer Capability (TTC), Available Flowgate Capability (AFC), Available Transfer Capability (ATC), Capacity Benefit Margin (CBM), or Transmission Reliability Margin (TRM), therefore; this is a conditional obligation, and there is no requirement that entities coordinate their methodologies. A reliability-based requirement

would establish obligations to ensure consistency between entities' methodologies. These requirements are administrative in nature and have no performance measure.

Additionally, TOPs and/or TSPs are not obligated in any fashion to determine TFC, TTC, AFC, ATC, CBM or TRM, nor are any criteria established for these quantities. Therefore, the requirements here require that entities that use an optional mechanism with no related criteria provide a methodology document and associated implementation documents, with no criteria as to what those documents must include, rather than just their "methodology." That reinforces that these are all administrative documents with little (if any) reliability benefit.

Further, Requirement R3 establishes that the TSP develops CBM for the benefit of the LSE, which has been removed from the list of NERC Functional Entities.

Finally, Requirements R5 and R6, through their clear and focused references to Open Access Same-Time Information System (OASIS), further emphasize the commercial elements of these subjects, and that this information, shared with other market participants, may easily be subject to FERC transparency rules commonly known as FERC Standards of Conduct under Rule 888. The definition of AFC also explicitly contains the term, "A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses." This seems to leave little question about the market focus of particularly Flowgate Capability.

MOD-020-0, Requirement R1 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined this standard should be retired for the following reasons:

MOD-031-2 and IRO-010-2 do not give the necessary entities the authority to request relevant information, nor does MOD-031-2 and IRO-010-2 require the associated entities to provide that information. Demand-Side Management (DSM) data may be related to the near-term operating time horizon and/or the planning time horizons, but not to the Real-time operating time horizon that the RC and TOP are operating in. According to TOP-001-4, Requirements R1 and R2, and IRO-001-4, Requirement R1, the RC, BA and TOP must operate the BES according to SOLs and IROLs, and do not generally have control over DSM. They do have the authority to issue Operating Instruction to other entities as needed to maintain BES reliability within SOLs and IROLs; the entities receiving Operating Instructions are obligated, per TOP-001-4, Requirement R3, to follow those instructions, subject to the exceptions noted within that requirement. Further, the Demand Response Availability Data System (DADS) collects and disseminates data regarding Demand Response programs according to Section 1600 of the NERC Rules of Procedure. All entities identified in MOD-020-0, Requirement R1, are sources of DADS data, have access to DADS data, or both.

DSM and Direct Control Load Management (DLCM) may be regarded as long-term planning and operations planning time horizon resources, but particularly with a "on request within 30 calendar days"

obligation in the requirement, is not a resource for the Real-time or day-ahead operating time horizon for RCs and TOPs, which must plan to operate, and actually operate, the BES within SOL's and IROL's, a subset of SOLs. In addition, the amount of interruptible demands and DLCM at the TP, Resource Planner (RP), and/or LSE (which has been removed from the compliance registry and is no longer obligated to comply with NERC standards) level is not of locational benefit to TOPs and RCs to assist them in operating within SOL's, as such information, were it to be provided within a usable time frame, would not be sufficiently granular to assist the TOP and RC. All meaningful information regarding interruptible demands and DLCM is available from DADS, which in the United States (US), is a mandatory reporting mechanism, regulated per Section 1600 of the NERC Rules of Procedure. DSM and DLCM are financially-enabled mechanisms whereupon RPs may encourage customers and customer groups to permit local control of their load in exchange for rate considerations, and this local control may or may not be sited in such a manner to provide any benefit to TOP's and RC's; which, again, are obligated by NERC Standards to operate the BES within SOL's.

PRC-004-5(i), Requirement R4
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire
Rationale
The SDT determined this requirement should be retired for the following reasons:

The standard's purpose is to identify and correct the causes of Misoperations of Protection Systems for BES Elements. The Reliability Standard's Guideline and Technical Basis for Requirement R4 considers due diligence that an entity must make in determining the cause of a Protection System Misoperation.

The compliance activities associated with this requirement fall into tracking of milestones and do not improve reliability. Requirement R4 acts as a control to support compliance with Requirements R1 and R3. It is in the best interest of the entity to continue to investigate and detect whether its Protection System components caused a Misoperation and develop a corrective plan for the identified Protection System component. This can be achieved through the entity's internal control policies and procedures engineered to maximize efficiency and reliability. Entities endeavor to determine the cause of a Misoperation, and doing so may take extended time if equipment outages are necessary. However, if an entity is unable to determine the cause, further investigation(s) using the same event data are unlikely to lead to identification of the cause. Proposed retirement of Requirement R4 does not preclude the entity's responsibility to continue the investigation to identify the cause of Misoperations; however, it does alleviate the need to keep tracking documents for showing investigative actions.

PRC-015-1 Requirements R1, R2, and R3 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this standard should be retained for the following reasons:

PRC-015-1 is scheduled to be retired on 12/31/2020 under the PRC-012-2 Implementation Plan (IP).

PRC-018-1 Requirements R1, R2, R3, R4, R5 and R6 (all)
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain
Rationale
The SDT determined this standard should be retained for the following reasons:

PRC-018-1 is superseded by PRC-002-2 in Year 2022. The PRC-002-2 IP states: "Standard PRC-018-1 shall remain effective throughout the phased implementation period of PRC-002-2…"

TOP-001-4 Requirements R16, R17, R19 and R22
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retain Requirements R16 and R17, Retire Requirements R19 and R22
Rationale
The SDT determined Requirements R16 and R17 should be retained for the following reasons:

Requirements R16 and R17 of TOP-001-4 need to be retained to make it clear that the System Operator (SO) has authority to postpone, cancel or recall planned outages of Energy Management System (EMS), IT or communications-related equipment. Although some RCs may include this type of equipment in their outage coordination process (IRO-017-1), the inclusion of EMS, IT or communications-related equipment is not explicitly required by IRO-017-1, Requirement R1. As such, a potential gap in the standards would exist if TOP-001-4, Requirements R16 and R17, were retired. Requirements R16 and R17 are necessary for the Real-time operators to be assured of having the tools necessary to monitor the BES. Therefore, retirement of TOP-001-4, Requirements R16 and R17, is not being sought during this phase of the project.

The purpose of TOP-003-3 is to ensure adequate data is collected by the BA and TOP to fulfill their operational and planning responsibilities. The purpose of TOP-002-4 is to ensure each BA and TOP have plans to operate within specified limits using the data provided in TOP-003-3. The data exchange capabilities that are indicated in TOP-001-4, Requirements R19 and R22, for the BA and TOP are redundant with TOP-003-3, Requirements R3, R4 and R5, and TOP-002-4, Requirement R1.

The SDT determined Requirements R19 and R22 should be retired for the following reasons:

TOP-001-4, Requirement R19, is redundant to other requirements in the Transmission Operations (TOP) family of standards. For TOPs, the existing TOP-003-3, Requirement R5, cannot be fulfilled by entities unless data exchange capabilities exist between the TOP and the supplying entities. Similarly, TOP-002-4, Requirement R1, cannot be fulfilled by the TOP unless the data needed to perform the OPA has been received from the supplying entities (i.e., data had to be exchanged). As such, Requirement R19 in TOP-001-4 is not needed to support reliability and can be retired.

TOP-001-4, Requirement R22, is redundant to other requirements in the TOP family of standards. For the

BA, the existing TOP-003-3, Requirement R5, cannot be fulfilled by entities unless data exchange capabilities exist between the BA and the supplying entities. Similarly, TOP-002-4, Requirement R4 cannot be fulfilled by the BA unless the data needed to develop its Operating Plan for next-day operations has been received from the supplying entities (i.e., data had to be exchanged). As such, Requirement R22 in TOP-001-4 is not needed to support reliability and can be retired.

VAR-001-5*, Requirements R2 and R3
SAR Recommendation: Retire
Project 2018-03 SDT Recommendation: Retire Requirement R2, Retain Requirement R3
Rationale
The SDT determined Requirement R2 should be retired for the following reasons:

VAR-001-5, Requirement R2 states, "Each Transmission Operator shall schedule sufficient reactive resources to regulate voltage levels under normal and Contingency conditions. Transmission Operators can provide sufficient reactive resources through various means including, but not limited to, reactive generation scheduling, transmission line and reactive resource switching, and using controllable load"

VAR-001-5, Requirement R2, contains two sentences, with the first sentence being a requirement and the second being a guidance statement. Each sentence is analyzed separately.

The first sentence requires the TOP to schedule sufficient reactive resources to regulate voltage levels under normal and contingency conditions. By using the OPA as described and required in TOP-002-4 and the criteria described in TOP-001-4, Requirement R10, the TOP must use a variety of tools to regulate voltage levels, including reactive control. Using Real-time Contingency Analysis (RTCA) tools allows the TOP to determine specific actions to regulate voltage during contingency conditions. Additionally, the TOP uses Real-time monitoring, allowing it to make real-time decisions on voltage during normal conditions. These allow the TOP to quantify the use of reactive resources and makes VAR-001-5, Requirement R2, unnecessary.

Further to this requirement that a TOP have sufficient reactive resources, the planning standard TPL-001-4 requires the PA and TP to conduct studies on their transmission Systems to ensure it operates reliably over a broad spectrum of System conditions and following a wide range of probable Contingencies. These studies include available reactive resource capabilities. The studies provide corrective action plans (CAPs) when the analysis indicates an inability of the System to meet performance requirements. CAPs include, as necessary, the amount of reactive resource capabilities needed. This ensures that the TOP has available an adequate number of reactive resources to operate under normal contingency conditions.

TOP-002-4, Requirement R1, requires an OPA to be completed to ensure no SOL is violated, and TOP-001-4, Requirement R10, provides the criteria that the TOP shall use for determining SOL exceedances, which includes monitoring voltages. If an SOL violation is identified, then the TOP shall have an Operating Plan to mitigate the violation. The requirements in TOP-001-4 and TOP-002-4 direct the TOP to maintain reliability of the BES and to mitigate SOL exceedances. If the TOP identifies no SOLs, voltage or otherwise, then the TOP has enough resources "scheduled" to maintain reliability of its BES. The remaining VAR-001-

5 requirements mandate that a TOP ensures voltage, reactive flows, and reactive resources are monitored, controlled, and maintained with limits. The Facilities Design, Connections and Maintenance (FAC) family of standards ensure the proper BES Facilities and/or Elements are built with applicable equipment and System ratings.

Specifically,

1. TOP-002-4 - Operations Planning with an effective date of April 1, 2017

   Requirement R1 of this standard requires the TOP to have an OPA that will allow it to assess whether its planned operations for the next day within its Transmission Operator Area will exceed any of its SOL's. Requirement R2 requires the TOP to have an Operating Plan(s) for next-day operations to address potential SOL exceedances identified as a result of its OPA as required in Requirement R1.

   An Operating Plan is defined by NERC as "*A document that identifies a group of activities that may be used to achieve some goal. An Operating Plan may contain Operating Procedures and Operating Processes. A company-specific System restoration plan that includes an Operating Procedure for black-starting units, Operating Processes for communicating restoration progress with other entities, etc., is an example of an Operating Plan.*"

   In order to mitigate SOL exceedances, or to address potential SOL exceedances, the TOP must have a variety of tools available to immediately address such condition; one such tool is reactive resources. The TOP must have an adequate number of reactive resources to mitigate any potential or actual SOL exceedance. The adequate or sufficient number is determined through analysis.

2. TOP-001-4 – Transmission Operations with an effective date of July 1, 2018

   Requirement R13 requires each TOP to ensure a Real-time Assessment is performed at least once every 30 minutes, and Requirement R14 requires the TOP to initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.

   This requirement, again, addresses that the TOP have an Operating Plan to mitigate SOL exceedances. The same requirement of TOP exists here as it did under TOP-002-4; the TOP must have an adequate number of reactive resources to mitigate SOL exceedances. The adequate or sufficient number is determined through analysis.

The second sentence of VAR-001-5 R2 states: "Transmission Operators can provide sufficient reactive resources through various means including, but not limited to, reactive generation scheduling, transmission line and reactive resource switching, and using controllable load." As noted by the VAR Enhanced Periodic Review group during its September 2016 meeting, and agreed to herein, this language is guidance or a measure and is unnecessary in the requirement. It was suggested then, as well as now, that perhaps this language be moved to a guidance section or document.

The SDT determined that Requirement R3 should be retained for the following reasons:
For reliability purposes, the TOP must ensure sufficient voltage support is provided in Real-time in order to operate within an SOL to prevent voltage-collapse events wherein the operation within SOLs/IROLs itself is not adequate to assure stable voltage operations in both steady-state and transient

conditions. The TOP family of standards does not provide sufficient granularity to assure that adequate voltage/reactive resources, both of magnitude and type, are operated to voltage and reactive flow as necessary.

* VAR-001-4.2 is an inactive standard. VAR-001-5 changed the Western Electricity Coordinating Council (WECC) variance, and not the continent-wide requirements. VAR-001-5 became effective January 1, 2019.