Standards Development Reference Document

I. Standards Under Development – Currently Posted

For additional detail about standards under development, see Section III.

Project	Action	End Date
Standards Processes Manual Revisions	Additional Ballot and Comment Period	5/30/2023
2017-01 Modifications to BAL-003 Phase II	Additional Ballot and Comment Period	6/1/2023
2021-01 Modifications to MOD-025 and PRC-019	Additional Ballots and Comment Period	6/8/2023
2021-06 Modifications to IRO-010 and TOP-003	Additional Ballots and Comment Period	6/20/2023
2021-02 Modifications to VAR-002-4.1	Additional Ballot and Comment Period	6/23/2023

II. Recent/Relevant Comment Periods and Ballots

Project	Action	End Date
2023-03 Internal Network Security Monitoring (INSM)	SAR Comment Period	5/5/2023
2022-02 Modifications to TPL-001 and MOD-032	SAR Comment Period	5/12/2023
2023-04 Modifications to CIP-003	SAR Comment Period	5/15/2023

III. Standards Under Development - Additional Detail

This section includes those projects that are in the SAR Phase to NERC filing the petition with FERC. Once FERC issues a final rule, the project is removed from this table.

Project	Background	Dates/Actions

2016-02 Modifications to CIP Standards | Virtualization	The CIP standards are based primarily on concepts dating back to Version 1 and as technology has evolved, issues have begun to arise as entities attempt to take new concepts and fit them into some of the Version 1 paradigms. These issues revolve around topics such as: • Hypervisor – the virtualization component that manages the guest operating systems (OSs) on a host and controls the flow instructions between the guest OSs and the physical hardware. • Virtual machines – With virtualization technologies, a single physical Cyber Asset can be used as an execution platform for numerous virtualized operating systems, micro-service containerized applications, and virtual network functions of all classifications. A single physical Cyber Asset can appear to an external network as many complete Cyber Assets. Virtual switches and networks can be defined so these virtual machines can communicate with each other as if they are separate physical nodes on the network. Virtual machines and functions can also migrate around a physically clustered cyber system such that the singular physical Cyber Asset where an application resides can change at any moment. The virtualization of Cyber Assets provides advantages for the availability, resiliency, and reliability of applications and functions hosted in such an environment and the CIP standards must not stand in the way of these benefits as long as they are implemented in a secure manner. Virtualization affords enhanced security in some cases as the security controls themselves can be virtualized and placed within the virtual environment closer to the workloads they are protecting. However, there are also different security risks introduced by these environments. The management systems or consoles for these environments allow for the complete control of numerous components of the infrastructure. Virtual machines or networks can be added, modified, or deleted from one central management system. For example, rogue virtual components can starve legitimate workloads of the shared resources (processor, memory, etc.) they need to reliably perform their function. In summary, changes to the CIP Requirements may be needed to account for virtualization. • Virtual Networks – Electronic Security Perimeter (ESP) constructs within the current CIP standard are limited to defining security zones at Open Systems Interconnection (OSI) Layer 3 and do not support security zones defined at layers other than OSI Layer 3. With current, widely deployed technology, networks are no longer solely defined by the arrangement of physical hardware and cables *inside* or *outside* of a *perimeter*. Networks can exist as a mixture of physical and virtual segments or purely in a virtual state within one device. Virtual firewalls and other security tools are also available to help secure these environments. Typical hardware network switches can be configured with internal logical isolation to implement multiple virtual networks within them. Accordingly, the SDT is reviewing the CIP standards to validate that definitions, requirements, and guidance regarding ESPs and Electronic Access Points (EAPs) continue to provide for secure and reliable operations. • Virtual Storage – Historically, servers were limited to dedicated storage within the device. Typically, the operating system and the applications resided in the server on hard drives. Virtual storage technologies such as Storage Area Networks (SANs) present virtualized	10/7/2022 Additional Ballots CIP-002-7: 94.63% CIP-003-Y: 84.90% CIP-004-8: 84.60% CIP-005-8: 65.26% CIP-006-7: 92.60% CIP-007-7: 67.38% CIP-008-7: 95.67% CIP-009-7: 95.38% CIP-010-5: 46.35% CIP-011-4: 84.59% CIP-013-3: 82.88% 4/11/2022 Additional Ballots CIP-002-7: 79.90% CIP-003-Y: 73.43% CIP-004-8: 77.03% CIP-005-8: 60.83% CIP-006-7: 76.13% CIP-007-7: 61.45% CIP-008-7: 78.67%

	logical drive storage units to all attached servers. These types of environments then become a shared resource among many physical and virtual hosts.	CIP-009-7: 78.42% CIP-010-5: 56.81% CIP-011-4: 79.08% CIP-013-3: 78.67% 9/1/2021 Additional Ballots CIP-002-7: 36.22% CIP-003-9: 41.55% CIP-004-7: 38.09% CIP-005-8: 20.25% CIP-006-7: 42.19% CIP-007-7: 29.40% CIP-008-7: 49.48% CIP-009-7: 49.73% CIP-010-5: 33.22% CIP-011-3: 40.16% CIP-013-3: 41.43% 3/22/2021 Initial Ballots CIP-002-7: 38.87% CIP-003-9: 48.30% CIP-004-7: 51.17%

		CIP-005-8: 26.30% CIP-006-7: 42.81% CIP-007-7: 42.32% CIP-008-7: 52.87% CIP-009-7: 53.26% CIP-010-5: 32.43% CIP-011-3: 47.25% CIP-013-3: 51.23% 9/26/2019 CIP-005 Comment Period 6/28/2019 White Paper Informal Comment Period 12/18/2018 Informal Comment Period 11/2/2017 Informal Comment Period 4/11/2017 Informal Comment Period

2017-01 Modifications to BAL-003-1.1 (Phase II)	The second phase will address the Phase II recommendations in the SAR: Make the Interconnection Frequency Response Obligation (IFRO) calculations and associated allocations: 1) more reflective of current conditions; 2) consider all characteristics affecting Frequency Response (e.g., load response, mix and type of generation); 3) include all applicable entities; and 4) be as equitable as possible; and Frequency Response Measure (FRM): 1) ensure that over-performance by one entity does not negatively impact the evaluation of performance by another; 2) measure types/periods of response in addition to secondary Frequency Response, particularly primary Frequency Response; 3) include all applicable entities; and 4) make allocations as equitable as possible.	6/1/2023 Additional Ballot 9/7/2022 Initial Ballot BAL-003-3: 43.84% 4/27/2021 Informal White Paper Comments
2019-04 Modifications to PRC-005-6	The SAR proposes revisions to PRC-005-6 that provide clear, unambiguous guidance on the scope of applicability to AVR protective functions. Without clear applicability, the industry is struggling with how to implement PRC-005-6 and what testing is acceptable to meet the required maintenance activities prescribed by PRC-005-6. This topic is only applicable to a Generator Owner that owns a synchronous generating unit with an installed digital AVR. The SAR also proposes revising PRC-005-6 to add a new section under Facilities to clearly delineate the applicability of Protection Systems associated with AVR protective functions, limiting the scope of the AVR protective functions to those elements that open a breaker directly or via lockout or tripping auxiliary relays.	8/25/2021 SAR Comment Period 2/12/2021 SAR Comment Period 7/8/2020 SAR Comment Period 8/28/2019 SAR Comment Period
2020-02 Modifications to PRC-024 (Generator Ride-through)	The potential risk of increasing amounts of reactive power being supplied by nonsynchronous sources was identified in *NERC's 2017 Long-term Reliability Assessment*. In response to the concern, the Planning Committee (PC) assigned the System Analysis and Modeling Subcommittee (SAMS) to study the issue. The SAMS developed the *Applicability of Transmission-Connected Reactive Devices* white paper, which was approved by the PC at its December 2019 meeting. The PC Executive Committee reviewed the draft SAR from SAMS at its January meeting and subsequently approved the SAR by email vote ending on February 11, 2020. The SAR was later accepted by the Standards Committee at its March 2020 meeting. **Standards Affected**: MOD-025, MOD-026, MOD-027, PRC-019, and PRC-024	7/14/2022 SAR Comment Period 5/13/2020 SAR Comment Period

2020-04 Modifications to CIP-012	**Background** In Order No. 866, FERC stated that “maintaining the availability of communication networks and data should include provisions for incident recovery and continuity of operations in a responsible entity's compliance plan." FERC recognized that the redundancy of communication links cannot always be guaranteed, and acknowledged there should be plans for both recovery of compromised communication links and use of backup communication capability. The proposed scope of this project would entail modifications to CIP-012 – Communications between Control Centers. **Standard(s) Affected** – CIP-012 - Cyber Security – Communications between Control Centers	11/16/2022 Additional Ballot CIP-012-2: 57.87% 1/24/2022 Additional Ballot CIP-012-2: 34.64% 6/9/2021 Initial Ballot CIP-012-2: 37.31% 6/11/2020 SAR Comment Period

2020-06 Verification of Models and Data for Generators	**Background** The NERC Inverter-based Resource (IBR) Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in the "IRPTF Review of NERC Reliability Standards White Paper," which was approved in March 2020 by the Operating Committee and the Planning Committee (now part of the Reliability and Security Technical Committee (RSTC)). Among the findings noted in the white paper, the IRPTF identified issues with MOD-026-1 and MOD-027-1 that should be addressed. The RSTC endorsed the SAR on June 10, 2020. Consistent with the IRPTF recommendations, the scope of the proposed SAR includes revisions to NERC Reliability Standards MOD-026-1 and MOD-027-1. Standards MOD-026-1 and MOD-027- 1 require, among other things, Generator Owners to provide verified dynamic models to their Transmission Planner for the purposes of power system planning studies. Both standards contain language that is specific to synchronous generators that is not applicable to IBRs. The IRPTF recommended revisions to clarify the applicable requirements for synchronous generators and IBRs. As such, the SAR proposes revisions to MOD-026-1 and MOD-027-1 to clarify requirements related to IBRs and to require sufficient model verification to ensure accurate generator representation in dynamic simulations. The Standards Committee accepted the IRPTF SAR and authorized posting at its September 24, 2020 meeting. Project 2020-02 Transmission-connected Dynamic Reactive Resources SAR was posted from March 30 to May 13, 2020, and members of a SAR DT were solicited. However, Project 2020-02 was paused indefinitely, and a SAR DT was not appointed. Subsequently, a second SAR involving similar standards, namely MOD-026 and MOD-027, was being drafted by the IRPTF and approved for posting in September 2020 by the Standards Committee. The Project 2020-06 Verifications of Models and Data for Generators SAR will be posted for industry comment, and additional nominees with MOD-026/027 background will be sought. A single SAR DT will be charged with determining whether to combine the two projects and drafting a combined SAR.	1/18/2023 Additional Ballot MOD-026-2: 26.05% 7/6/2022 Initial Ballot MOD-026-2: 27.85% 1/14/2021 SAR Comment Period

2021-01 Modifications to MOD-025 and PRC-019	**Background** The PPMVTF developed this SAR to revise MOD-025-2 to address issues regarding verification and data reporting of generator active and reactive power capability. As stated in the SAR, implementation of the standard has rarely produced data that is suitable for planning models (i.e., the stated purpose of the standard). The current MOD-025-2 verification testing activities require significant time, expertise, and coordination; however, they do not result in data that should be used by planners for modeling purposes. The SAR aims to retain testing activities are useful and focus on more effective means of collecting useful data for planning models. The Reliability, Security, and Technology Committee (RSTC) endorsed the SAR on October 19, 2020. PRC-019-2 addresses the reliability issue of miscoordination between generator capability, control systems, and protection functions. However, PRC-019-2 was developed with a bias toward synchronous generation and does not sufficiently outline the requirements for all generation resource types. The proposed Standard Authorization Request (SAR) aims to address a number of issues identified by the SPCS and revise the standard to be inclusive of all types of generation resources. The SAR was endorsed by the NERC Planning Committee (PC) on March 4, 2020. The MOD-025-2 and PRC-019-2 SARs were accepted and authorized for informal posting at the January 20, 2021 SC meeting. The appointed SAR DT will also determine how to addresses the applicable scope of Project 2020-02 Transmission-connected Dynamic Reactive Resources, which also seeks to modify MOD-025-2 and PRC-019-2. See Project 2020-02 Transmission-connected Dynamic Reactive Resources for additional background.	6/8/2023 Additional Ballots 11/14/2022 Initial Ballots MOD-025-3: 26.65% PRC-019-3: 39.86% 4/2/2021 SAR Comment Period

2021-02 Modifications to VAR-002	**Background** Reliability Standard VAR-002-4.1 requires, among other things, Generator Operators (GOP) to ensure generators provide reactive support and voltage control, within generating Facility capabilities, in order to protect equipment and maintain reliable operation of the Interconnection. For dispersed power producing resources, it is not clear if a GOP is required to notify the Transmission Operator (TOP) for the status change of a voltage controlling device on an individual generating unit within a Facility comprised of numerous resources. NERC Project 2014-01 Standards Applicability for Dispersed Generation Resources revised VAR-002, Requirement R4, to clarify that it is not applicable to individual generating units of dispersed power producing resources. At the time, the IRPTF did not identify any reason why Requirement R3 (i.e., "status change") should be treated differently than Requirement R4. The NERC IRPTF undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper (see supporting documents) approved by the Operating Committee. Among the findings noted in the white paper, the IRPTF identified issues with VAR-002-4.1 that should be addressed through the standards development process. The SAR was endorsed by the Reliability, Security, and Technology Committee (RSTC) on June 10, 2020 and accepted by the SC on January 20, 2021.	6/23/2023 Additional Ballot 1/13/2023 Initial Ballot VAR-002-5: 51.87% 4/6/2022 SAR Comment Period 5/13/2021 SAR Comment Period

2021-03 CIP-002	**Background** The Standards Committee (SC) has tasked the Project 2021-03 standard drafting team (SDT) with three Standard Authorization Requests (SARs) and one Request for Interpretation (RFI): 1. Transmission Owner Control Centers (TOCCs) – The SC assigned a portion of the Project 2016-02 SAR that relates to TOCCs to the Project 2021-03 SDT. That SAR portion is to review CIP-002 and evaluate the categorization of TOCCs performing the functional obligations of a Transmission Operator, specifically those that meet medium impact criteria. In addition, this SDT is assisting NERC staff in meeting the directive from the NERC Board of Trustees to conduct further study of the need to readdress the applicability of the Critical Infrastructure Protection Reliability Standards to these Control Centers to support reliability. To help meet this directive and the scope of the SAR, the SDT initiated a field test. The SC approved the Project 2021-03 Field Test Plan on November 17, 2021. 2. CIP-002 and CIP-014 – This SAR provides revisions to CIP-002 and CIP-014 to clarify the responsibility of Reliability Coordinators, Planning Coordinators, and Transmission Planners in identifying Facilities that warrant consideration under these Reliability Standards. As it relates to the Transmission Planner and Planning Coordinator functions, the language “critical to the derivation of Interconnection Reliability Operating Limits (IROLs)" should be replaced/updated to appropriately identify Facilities that, if somehow compromised, could significantly impact the reliability of the Bulk Electric System (BES). Additionally, this SAR includes a review of the applicability of Facilities identified by the Reliability Coordinator as critical to the derivation of IROLs to CIP-002 and CIP-014. The SC accepted this SAR on July 21, 2021. 3. CIP-002 SAR for Requirement R1 Parts 1.1 – 1.3 – This Standard Authorization Request is to consider if such a protocol converter meets the definition of a BES Cyber Asset by having an adverse impact to one or more facilities and the reliable operation on the BES. This includes consideration to the threat of unavailability, degradation, or misuse to a connected BES Cyber System and the aggregation of serial system-to-system communications from substations to Control Center BES Cyber Systems. As such, this project supports reliability by clarifying how these protocol converters should be categorized and if they are to reside within a defined Electronic Security Perimeter. 4. CIP-002 – This SAR seeks to revise CIP-002 to include identification and categorization of certain Cyber Assets (Electronic Access Control or Monitoring Systems, Physical Access Control Systems, and Protected Cyber Assets) associated with high and medium impact BES Cyber Systems. The SC accepted this SAR on November 17, 2021. The Project 2021-03 SDT originally included nine members, but now the team is down to five SDT members. The three supplemental SDT members would assist project 2021-03 in completing the remaining three SARs assigned to this project.	3/31/2023 CIP-002-Communications Protocol Converters SAR Comment Period 12/21/2022 Modifications to CIP-002 SAR and CIP-014 SAR Comment Period

2021-04 Modifications to PRC-002-2	**Background** The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with PRC-002-2 that should be addressed.	3/10/2023 NERC Petition 12/16/2022 Final Ballot PRC-002-4: 96.43% 11/9/2022 Additional Ballot PRC-002-4: 96.36% 7/25/2022 Initial Ballot PRC-002-4: 66.9% 7/13/2021 SAR Comment Period
2021-05 Modifications to PRC-023	**Background** Requirement R2, in PRC-023-4, requires applicable functional entities to set their Out of Step Blocking[1] (OOSB) elements to allow tripping for faults during the loading conditions prescribed by Requirement R1. A requirement to allow tripping in a Standard whose intent is to block tripping, has led to some entities disabling their OOSB relays. Disabling of these relays could lead to tripping during stable power swings causing an increased reliability risk. OOSB relays provide increased security by preventing relays from tripping for stable power swings. Preventing the tripping of transmission lines during these types of disturbances increases the reliability of the BES. Requirement R2 should be removed because it has been interpreted to restrict the setting of OOSB elements making compliance with PRC-026 more difficult. Attachment A exclusion 2.3 should also be removed. This exclusion is no longer needed and that exclusion has contributed to the confusion surrounding R2. Attachment A exclusion 2.3 has been interpreted as being in conflict with R2. Both R2 and Attachment A exclusion 2.3 are not needed in the Standard.	3/2/2023: NERC Petition for Approval 1/19/2023 Final Ballot PRC-023-06: 98.27% 12/2/2022 Initial Ballot PRC-023-6: 98.37% 7/28/2021 SAR Comment Period

2021-06 Modifications to IRO-010 and TOP-003	**Background** The primary purpose of this project is to simplify administrative burdens identified by the SER Phase 2 Team associated with the current IR0-010-2 and TOP-003-3 standards and limit unnecessary data requirements that do not contribute to BES reliability and resiliency. As written the standards create a zero-defect expectation for each Registered Entity receiving a data specification to demonstrate perfect performance on every item in the data specification for an entire audit period. This can result in unnecessary administrative burdens for the Registered Entity to demonstrate compliance, including excessive data retention. If instead a risk-based approach was developed and performance was triggered upon an event or unresolved data conflicts between entities, then the purpose of the standards would be achieved in an effective and efficient manner. The secondary purpose of this project is to evaluate removing other data exchange requirements dispersed in other standards. The drafting team would need to evaluate those requirements after proposed changes to the IR0-010 and TOP-003 are developed to determine if they are within the scope of the four tasks and consequently within the scope of IRO-010 and TOP-003. This may require enhancing the standards to allow each Registered Entity with responsibilities to perform the tasks identified in IRO-010-2 and TOP-003-3 the ability to request and receive any information it needs from other Registered Entities to perform those tasks.	6/20/2023 Additional Ballots 12/15/2022 Initial Ballot IRO-010-5: 52.32% TOP-003-6: 51.26% 2/9/2022 Second SAR Comment Period 8/6/2021 SAR Comment Period
2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination | Phase 2	**Background** From February 8 - 20, 2021, extreme cold weather and precipitation affected the south central United States. Large numbers of generating units experienced outages, derates, or failures to start, resulting in energy and transmission emergencies (referred to as “the Event"). The total Event firm load shed was the largest controlled firm load shed event in U.S. history and was the third largest in quantity of outaged megawatts (MW) of load after the August 2003 northeast blackout and the August 1996 west coast blackout. **Standard(s) Affected**: BAL, EOP, IRO, TOP, or Other Standards as Identified in the SAR	4/13/2023 Initial Ballots

2021-08 Modifications to FAC-008	**Background** As currently written, the FAC-008 Reliability Standard and associated defined terms “Facility" and “Element" have been interpreted by some to mean that only electrical components may be considered when developing Generator Facility Ratings under R1. This could lead to planning and operational entities being provided Generator Facility Ratings that are higher than the actual output the plant is capable of, which could be detrimental to reliability during actual system emergencies. Explicitly allowing the inclusion of mechanical elements in the development of Facility Ratings will ensure Generators are rated to their most limiting element. Further, the FAC-008-3 non-formal use of the term “jointly owned" is ambiguous when compared with the industry legacy use of “jointly owned" as a purely financial and contractual obligation. This lack of clarity of intent of the standard could cause risk of facility rating gaps, misunderstanding of rating overlap requirements or gaps in facility rating coordination that could be resolved by clearly defining the technical expectations of the term “jointly owned". **Standard(s) Affected:** FAC-008-5	1/27/2022 SAR Comments
2022-01 Reporting ACE Definition and Associated Terms	**Background** The SAR states that the current definition of Reporting Area Control Error (ACE) presents a conflict with the Western Interconnection's Automatic Time Error Correction (ATEC) process and does not allow other Interconnections to pursue ATEC. Additionally, there is confusion in that the terms ACE and Reporting ACE are both used throughout the standards. A revised definition should provide improve long-term average frequency performance as well as give other Interconnections the ability to pursue automatic correction approaches. **Standard(s) Affected:** Multiple standards reference the Reporting ACE definition, including BAL.	3/16/2023 Initial Ballots Passed 3/10/2022 SAR Comment Period

2022-02 Modifications to TPL-001-5.1 and MOD-032-1	**Background** Many areas of the North American bulk power system (BPS) continue to experience an increase in BPS-connected inverter-based resources (e.g., wind, solar photovoltaic (PV), battery energy storage systems (BESS), and hybrid power plants). NERC Reliability Standard TPL-001-5.1 is a foundational standard used for "establishing transmission system performance requirements within the planning horizon to develop a bulk electric system (BES) that will operate reliably over a broad spectrum of system conditions and following a wide range of probable contingencies." Transmission Planners (TPs) and Planning Coordinators (PCs) develop and use models of the electrical grid to perform planning assessments (e.g., steady-state, dynamic, and short-circuit) to develop corrective action plans for future reliability issues identified. Ensuring that the TPL-001 standard is reflective of the evolving nature of the BPS and its resource mix is paramount to ensuring reliable operation and resilience of the BPS moving forward. The NERC Inverter-Based Resource Performance Task Force (IRPTF)[1] undertook a complete review of the NERC Reliability Standards in the context of increasing levels of BPS-connected inverter-based resources and published a white paper on the outcomes and recommendations of this review in March 2020.[2] Based on the outcome of the review, it was determined that the TPL-001-4/5[3] needed clarifications "to address terminology throughout the standard that is unclear with regards to inverter-based resources" the next time the standard is revised. Considering current trends, the NERC SPIDERWG undertook a review of the TPL-001 standard considering the potential impact of distributed energy resources (DERs). This review is captured in the following RSTC-approved white paper and serves as the technical justification for the revisions suggested in this SAR: • SPIDERWG: Assessment of DER impacts on NERC Reliability Standard TPL-001 (here) This SAR proposes to update TPL-001-5.1 to address some of the issues identified in the white paper. TPL-001-5.1 does not currently require Planning Coordinators and Transmission Planners to complete Planning Assessments with adequate representation of the dynamic behavior of DERs. As the penetration of DERs increases, and based on the DER data and models available, Planning Assessments should include DERs that can potentially impact Transmission System performance assessment. NERC's "Lesson Learned: Single Phase Fault Precipitates Loss of Generation and Load", evaluating a 2019 frequency event in Southern England exacerbated by the unexpected reduction of 725 MW of IBR output and the unexpected loss of 350 MW of DER, highlights the critical importance of accurate Transmission System Planning Assessments. In July 2020, a significant quantity of solar PV facilities across a large geographic area in Southern CA reduced about 1000 MW output due to a disturbance on the bulk power system. Subsequent event analysis revealed that it was the consequence of momentary cessation and slow recovery of power. Standards enhancement has been one of the recommendations after the event analysis to ensure reliable operation of the bulk power system. As the penetration of DERs continues to increase across the North American bulk power system (BPS), it is necessary to account for the potential impacts of DERs on reliability in the planning, operation, and design of the BES. The NERC System Planning Impacts of Distributed Energy Resources Working Group (SPIDERWG) has identified the need for improved modeling of aggregate DER for planning studies (including both utility-scale and retail-scale DER) conducted by Transmission Planners (TPs) and Planning Coordinators (PCs). MOD-032-1 addresses the gathering of modeling data to perform planning	5/12/2023 TPL-001-5.1 Footnote 13.d SAR Comment Period 3/2/022 SARs Comment Period

	assessments but the standard currently has no specific reference to DER data. This SAR proposes to update MOD-032-1 to: (1) include “data requirements and reporting procedures"[4] for DER that are necessary to support the development of accurate interconnection-wide models, (2) replace Load-Serving Entity (LSE) with Distribution Provider (DP) because of the removal of LSEs from the NERC registry criteria, and (3) enable the SDT to review any additional gaps in DER data collection with the de-registration of LSE. **Standard(s) Affected:** TPL-001-5.1 and MOD-032-1	
2022-03 Energy Assurance with Energy-Constrained Resources	**Background** Energy assurance is an increasingly important aspect of a reliable Bulk Electric System (BES), but has been inconsistently defined and measured without explicit standards. The project scope will address several energy assurance concerns related to the operations, operations planning, and mid- to long-term planning time horizons which was first identified in the NERC white paper entitled *Ensuring Energy Adequacy with Energy-Constrained Resources*[1]. Today, the transition from coal and nuclear generation to wind, solar, natural gas (with and without oil back up), distributed energy resources, and hybrid (renewables plus energy storage) resources is creating a more complex scenario and highlighting the need for energy assurance. Installed generating capacity analysis alone is not sufficient to ensure a reliable supply of energy for the BES. The proliferation of intermittent renewable generation in the resource mix increases the importance of having precisely controllable resources with sufficient fuel available, ready to respond when needed. The increasing prevalence of distribution-level resources and flexible load programs introduces added volatility into energy forecasts, further complicating operations energy reliability assessments. This project will address two SARs. **Standard(s) Affected:** TPL-001-5.1, EOP, and TOP	7/21/2022 SARs Comment Period
2022-04 EMT Modeling	**Background** The bulk power system (BPS) in North America is undergoing a rapid transformation towards high penetrations of inverter-based resources. Transmission Planners (TP) and Planning Coordinators (PC) are concerned about the lack of accurate modeling data and the need to perform electromagnetic transient (EMT) studies during the interconnection process and long-term planning horizon. The growth of inverter technology has pushed conventional planning tools to their limits in many ways, and TPs and PCs are now faced with the need to conduct more detailed studies using EMT models for issues related to inverter-based resource integration issues. This SAR proposes including EMT models and studies in planning-related NERC Standards to ensure reliable operation of the BPS moving forward. **Standard(s) Affected: FAC-002, MOD-032, and TPL-001**	9/13/2022 SAR Comment Period

2022-05 Modifications to CIP-008 Reporting Threshold	**Background** Reliability Standard CIP-008-6 became effective on January 1, 2021, in response to FERC Order No. 848[1] directing NERC to develop modifications to the Reliability Standards to require reporting of Cyber Security Incidents and attempt(s) to compromise a responsible entity's Electronic Security Perimeter (ESP) or associated Electronic Access Control or Monitoring Systems (EACMS). Since the effective date of CIP-008-6, there has not been a material change from CIP-008-5 in the number of Reportable Cyber Security Incidents or Cyber Security Incidents that were determined to be an attempt to compromise an applicable system. This project will address gaps in CIP-008-6 permitting a subjective determination of attempt(s) to compromise. The Standard Drafting Team (SDT) will modify the Reliability Standards and associated definitions as necessary to provide a minimum expectation for thresholds to support the definition of attempt to compromise.	12/5/2022 SAR Comment Period
2023-01 EOP-004 IBR Event Reporting	**Background** The SAR proposes enhancements to EOP-004-4 (EOP-004) focused on ensuring timely reporting by industry to the Electric Reliability Organization (ERO) Enterprise through reporting of events involving inverter-based resources (IBRs). Currently, the standard has relatively large generator loss size thresholds and uses language more suitable for synchronous generation. The SAR proposes to enhance the standard by adding clarity and lowering the generator loss threshold to encompass the lessons from widespread IBR loss events that have occurred. The NERC Inverter-based Resource Performance Subcommittee (IRPS) presented the SAR to the Reliability and Security Technical Committee (RSTC) for comment in September 2022. After responding to the RSTC comments, the IRPS resubmitted the SAR, and the RSTC endorsed the SAR on December 6, 2022. The Standards Committee accepted the SAR on January 25, 2023.	3/8/2023 SAR Comment Period
2023-02 Performance of IBRs | PRC-004	**Background** Multiple NERC disturbance reports,[1] including the Odessa disturbance report,[2] have identified the undesired performance of bulk power system (BPS)-connected inverter-based resources (IBRs) during grid faults, and have elaborated on the systemic and significant BPS reliability risks that this undesired performance can pose. IBRs may trip for many different reasons, may cease current injection due to inverter controls, or may have unwanted plant-level controller interactions. These types of issues have been extensively documented in the NERC reports. The resulting unexpected and unwarranted loss of generation poses a significant risk to BPS reliability.	3/23/2023 SAR Comment Period

2023-03 Internal Network Security Monitoring (INSM)	On January 19, 2023, the Federal Energy Regulatory Commission (FERC) issued Order No. 887[1] directing NERC to develop requirements within the Critical Infrastructure Protection (CIP) Reliability Standards for internal network security monitoring (INSM) of all high impact BES Cyber Systems and medium impact BES Cyber Systems with External Routable Connectivity (ERC). INSM permits entities to monitor traffic once it is within a trusted zone, such as the Electronic Security Perimeter, to detect intrusions or malicious activity. Specifically, Order No. 887 directs NERC to develop Reliability Standards requirements that are "forward-looking, objective-based"[2] and address three security objectives outlined in Order No. 887. FERC directed NERC to submit these revisions for approval by July 9, 2024. Order No. 887 also directed NERC to conduct a study on the risks of lack of INSM for medium impact BES Cyber Systems without ERC, all low impact BES Cyber Systems, and on the challenges and solutions for implementing INSM for those BES Cyber Systems. NERC is conducting the study, which is to be filed with FERC by January 18, 2024. **Standard(s) Affected: CIP-005-7, CIP-010-4, and CIP-013-2**	5/5/2023 SAR Comment Period
2023-04 Modifications to CIP-003	**Background** In light of cybersecurity events and the evolving threat landscape, the NERC Board took action at its February 4, 2021 meeting to direct NERC staff, working with stakeholders, to expeditiously complete its broader review and analysis on facilities that house low impact Bulk Electric System (BES) Cyber Assets. Specifically, the degrees of risk presented by various facilities that house the low impact BES Cyber Assets and report on whether the low impact criteria should be modified. To assist in this evaluation, NERC staff assembled a team of cybersecurity experts and compliance experts representative of a cross section of industry, called the Low Impact Criteria Review Team (LICRT). The LICRT's primary purpose was to discuss the potential threat and risk posed by a coordinated cyber attack on low impact BES Cyber Systems. In its report, the LICRT documented the results of the review and analysis of degrees of risk presented by various facilities that meet the criteria that define low impact cyber facilities and recommends actions to address those risks. The Board accepted the LICRT's report at its November 2022 meeting and asked that the recommendations in the report be initiated. The Standards Committee accepted the SAR at its March 22, 2023 meeting. **Standard Affected:** CIP-003-9	5/15/2023 SAR Comment Period
CIP Standards Efficiency Review	Using a risk-based approach, evaluate NERC CIP Reliability Standards in order to identify potential efficiencies through retirement or modification of Reliability Standard Requirements.	8/26/2019 CIP SER Matrix Comment Period

SER Phase II	**SER Phase 2 Scope and Approach** Evaluate NERC Reliability Standards (O&P and CIP), as informed by implementation experiences and compliance practices, to develop and recommend standards-based solutions intended to reduce inefficiencies and unnecessary regulatory burdens for the purpose of supporting continued safe, secure and reliable operations. The Phase 2 Team will focus on the following activities: • Identify areas of inefficiency in the current framework of Reliability Standards. • Collaborate and communicate with industry to ensure all areas of inefficiency and potential solutions are considered. • Potential solutions may include, but are not limited to: ○ SARs to remove inefficiencies in the Reliability Standards. ○ Policy recommendations to appropriate ERO staff or committee. • A sub-team, consisting of a few members from SER Phase 1 and Phase 2, are reviewing information from the SER Matrix input from the early stages of Phase 1, in order to identify efficiency opportunities not covered by Project 2018-03 SER Retirements or SER Phase 2. This sub-team is tasked with developing a SAR to summarize a consolidated list modification recommendations.	5/27/2020 Operational Data Exchange Simplification SAR Survey 9/23/2019 Evidence Retention Report Spreadsheet Comment Period

Technical Rationale for Reliability Standards	The current Reliability Standards template includes a Guidelines and Technical Basis (GTB) section to provide standard drafting teams a mechanism to: (i) explain the technical basis for the associated Reliability Standard (and Requirements therein); and (ii) provide technical guidance for the associated Reliability Standard (and Requirements therein). The ERO Enterprise recognizes that these sections help industry to understand the technology and technical elements in the Reliability Standard. The ERO continues to assess compliance based on the language of the Reliability Standard and the facts and circumstances presented. With the enactment of the Compliance Guidance Policy, it appears helpful to further clarify the distinction between Implementation Guidance and GTB (or Technical Rationale, as explained below). GTB should focus on technical rationale that assists technical understanding of a requirement and/or Reliability Standard. GTB should not include compliance examples or compliance language, as such information, if needed, should be developed as Implementation Guidance under the Compliance Guidance Policy.	4/20/2020 Non-binding Polls BAL-005-1 86.%47 EOP-008-2 87.77% NUC-001-3 87.12% TOP-002-4 85.48% TOP-003-3 85.71% TOP-010-1(i) 87.1% PRC-005-6 86.93% PRC-006-3 85.8% PRC-006-SERC-02 76.19% VAR-501-WECC-3.1 79.25% 12/18/2019 Non-binding Polls IRO-001-4: 84.91% IRO-002-6: 88.89% IRO-008-2: 86.57% IRO-009-2: 86.57% IRO-010-2: 86.79% IRO-014-3: 89.55% IRO-017-1: 88.75% IRO-018-1(i): 77.78%

		5/25/2018 Nomination Period
Standards Processes Manual Revisions to Address SPSEG Recommendations	NERC is proposing a series of revisions to Section 300 (Reliability Standards Development) and Appendix 3A (Standard Processes Manual) to its Rules of Procedure. The proposed revisions were developed by the Standards Process Stakeholder Engagement Group ("SPSEG") to improve the agility of NERC's standard development processes to address urgent reliability needs, while also maintaining reasonable notice and opportunity for public comment, due process, openness, and balance of interests. Rules of Procedure Section 300 Changes are also being proposed. See the ROP page for more information: Rules of Procedure (nerc.com)	5/30/2023 Additional Ballot 3/6/2023 Initial Ballot = 37.70%

IV. FERC Actions

On April 20, 2023, FERC issued a Notice of Denial of Rehearing by Operation of Law and Proving for Further Consideration regarding a request for rehearing on the Extreme Cold Weather Reliability Standards (EOP-011-3 and EOP-012-1) approved by FERC on February 16, 2023.

V. NERC Actions

On April 14, 2023, NERC submitted an Evaluation of the Physical Security Reliability Standard and Physical Security Attacks to the Bulk-Power System to FERC. This report was directed by FERC in December 2022.

On May 15, 2023, NERC submitted an unaudited report of NERC's budget-to-actual variance information for the first quarter 2023. This compliance filing is in accordance with FERC's January 16, 2013 Order, which approved a Settlement Agreement between the FERC Office of Enforcement and NERC, related to findings and recommendations arising out of its 2012 performance audit.

On May 15, 2023, NERC submitted a petition for approval of revisions to the Texas RE Regional Standards Development Process (RSDP).

VI. ERCOT Region Representatives on Standards Drafting Teams

Projects are removed from this list when FERC issues a Final Rule.

Project	ERCOT Region Representation
2016-02 Modifications to CIP Standards	**Member(s)**: Jake Brown – ERCOT, Heather Morgan – EDP Renewables **Observer(s)**: Don Hunt – CenterPoint, William Sanders – Texas RE

	PMOS Liaison: Kirk Rosener – CPS Energy
2017-01 Modifications to BAL-003-1.1	**Member(s):** James Fletcher - AEP **Observer(s):**
2019-04 Modifications to PRC-005-6	**Member(s):** Cesar Huerta - AEP **Observer(s):**
2019-05 Modifications to PER-003-2	**Member(s):** Dennis Sauriol - AEP **Observer(s):** Michael Cruz-Montes – CenterPoint **PMOS Liaison**: Kirk Rosener – CPS Energy
2020-02 Transmission-connected Resources	**Member(s):** **Observer(s):**
2020-03 Supply Chain Low Impact Revisions	**Member(s):** Jeffery Sweet – AEP, Ida Mauricio – CPS Energy **Observer(s):**
2020-04 Modifications to CIP-012	**Member(s):** **Observer(s):**
2020-05 Modifications to FAC-001-3 and FAC-002-2	**Member(s):** John Bernecker - ERCOT **Observer(s):**
2020-06 Verification of Models and Data for Generators	**Member(s):** Jonathan Rose - ERCOT **Observer(s):**
2021-01 Modifications to MOD-025 and PRC-019	**Member(s):** Sean McCormick – Cypress Creek Renewables **Observer(s):**
2021-02 Modifications to VAR-002	**Member(s):** David Daniels – AEP**,** Kristina Marriott – Miller Bros. Solar **Observer(s):**
2021-03 CIP-002 Transmission Owner Control Centers	**Member(s):** Megan Sauter - Oncor **Observer(s):**
2021-04 Modifications to PRC-002-2	**Member(s):** Bret Garner Burford - AEP **Observer(s):**
2021-05 Modifications to PRC-023	**Member(s):** **Observer(s):**
2021-06 Modifications to IRO-010 and TOP-003	**Member(s):** Dennis Sauriol – AEP, Stephen Solis - ERCOT **Observer(s):**
2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination	**Members:** Venona Greaff – Oxy, Keith Smith – Orsted Onshore North American, Collin Martin – Oncor, David Kezell - ERCOT **Observers:** **PMOS Liaison:** Kirk Rosener – CPS Energy
2021-08 Modifications to FAC-008	**Members** **Observers**

2022-01 Reporting ACE Definition and Associated Terms	**Members:** Nitika Mago - ERCOT **Observers:** **PMOS Liaison:**
2022-02 Modifications to TPL-001-5.1 and MOD-032	**Members:** John Schmall – ERCOT **Observers:** **PMOS Liaison:**
2022-03 Energy Assurance with Energy-Constrained Resources	**Members:** Julie Jin - ERCOT **Observers:** **PMOS Liaison:**
2022-04 EMT Modeling	**Members:** Ali Goharrizi - ERCOT **Observers:**
2022-05 Modifications to CIP-008 Reporting Threshold	**Members:** **Observers:**
2023-01 EOP-004 IBR Event Reporting	**Members:** **Observers:**
Standards Efficiency Review	**Long Term Planning:** Larisa Loyferman - CenterPoint **Operations Planning:** Shirley Mathew – Austin Energy **Real-time Operations**: Michael Cruz-Montes – CenterPoint
CIP Standards Efficiency Review	**Member(s):** Nicholas Morton – AEP, Lan Nguyen – CenterPoint Energy **Observer(s):**
Technical Rationale for Reliability Standards	**Member(s):** **Observer(s)**: Michael Cruz-Montes - CenterPoint Energy

VII. NERC and Texas RE Postings

- Violations: Visit NERC's Enforcement page at http://www.nerc.com/pa/comp/CE/Pages/Enforcement-and-Mitigation.aspx for information on the latest Public Violations (CIP and Non-CIP), Spreadsheet NOP filing and FFT informational spreadsheet
- Projected Postings: http://www.nerc.com/pa/Stand/Pages/Default.aspx. Click on "Projected Posting Schedule"
- NERC Standards - One Stop Shop: http://www.nerc.com/pa/Stand/Pages/Default.aspx. Click on "One-Stop-Shop (Status, Purpose, Implementation Plans, FERC Orders, RSAWs)"
- NERC filings at FERC: http://www.nerc.com/FilingsOrders/us/Pages/default.aspx.
- Texas RE's NERC standards links and summaries of newly approved standards: http://www.texasre.org/Pages/standards.aspx.

VIII. Upcoming Texas RE Event(s)

- Grid Transformation Workshop - July 20, 2023