Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	CIP-002-x Attachment 1 – Criterion 2.6		
Date Submitted:	April 18, 2025		
SAR Requester			
Name:	Gerry Adamski		
Organization:	Cogentrix Energy Power Management		
Telephone:	609-439-8529	Email:	gerryadamski@cogentrix.com
SAR Type (Check as many as apply)			
☐ New Standard ☒ Revision to Existing Standard ☐ Add, Modify or Retire a Glossary Term ☐ Withdraw/retire an Existing Standard		☐ Imminent Action/ Confidential Issue (SPM Section 10) ☐ Variance development or revision ☐ Other (Please specify)	
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
☐ Regulatory Initiation ☐ Emerging Risk (Reliability Issues Steering Committee) Identified ☐ Reliability Standard Development Plan		☐ NERC Standing Committee Identified ☐ Enhanced Periodic Review Initiated ☒ Industry Stakeholder Identified	
What is the risk to the Bulk Electric System (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
The current language in CIP-002-5.1a, Attachment 1, Criterion 2.6 requires an "all or nothing" approach to the implementation of CIP Medium Impact controls for registered Generator Owners and Generator Operators that are impacted by its Reliability Coordinator (RC), Planning Coordinator (PC), or Transmission Planner (TP) invocation of said criterion. This discussion is relevant when Criterion 2.6 is the only criterion that elevates the Registered Entity to the CIP Medium Impact controls. This approach results in suboptimal efficiency as it requires an inequitable allocation of resources to achieve the intended reliability objective that could otherwise be equally achieved through a more streamlined, and therefore, more efficient approach. In addition, this approach: • Is contrary to the language in other criteria in Attachment 1 as well as in the Applicability Section of the Standard itself that permits the segmentation or parsing of BES Cyber Systems to limit CIP exposure;			

Requested information

- Contradicts the intent of the standard drafting team to permit entities to appropriately identify BES Cyber Systems (or groupings thereof) that should be subject to the standard's requirement;
- Contradicts the NERC's "Acceptance Criteria of a Reliability Standard – Quality Objectives" in terms of achieving the reliability benefit without regard to the costs and benefits of implementing the proposal; and,
- Counters many years of actual field experience in successfully protecting certain BES Cyber Systems that were previously identified by the RC, PC, or TP as impactful to system reliability.

As a result of the inefficiencies promulgated by the current language, Registered Entities are subject to significant expense in adding systems, tools, and resources to satisfy the CIP requirements across the entire facility and in hiring, training, and maintaining staff to successfully implement the ongoing CIP Medium Impact program than would otherwise be required if segmentation of systems were permissible in the language of Attachment 1, Criterion 2.6. These added costs, albeit subject to potential cost recovery mechanisms for the Registered Entity in certain market regions, result in higher costs to be borne by those purchasing power in those market footprints than would otherwise be required if segmentation were allowed. Furthermore, the implementation of the CIP Medium Impact program across the entire facility could serve as a potential distraction to the facility staff and divert its attention from providing safe and reliable power to the grid.

Allowance for BES Cyber System Segmentation

Several requirements and criteria in CIP-002-5.1a (current enforceable version) contain language that provides the Registered Entity the ability to segment or parse BES Cyber Systems to apply the identified CIP controls at the appropriate CIP impact level. The language in these criteria result in a more focused set of systems in lieu of the entire plant enabling a targeted allocation of resources and, therefore, a more efficient approach to meeting the reliability obligations contained therein. Attachment 1, Criteria 2.1, 2.2, 2.9, and 2.10 provide such examples:

Attachment 1, Criterion 2.1

Commissioned generation, by each group of generating units at a single plant location, with an aggregate highest rated net Real Power capability of the preceding 12 calendar months equal to or exceeding 1500 MW in a single Interconnection. *For each group of generating units, the only BES Cyber Systems that meet this criterion are those shared BES Cyber Systems that could, within 15 minutes, adversely impact the reliable operation of any combination of units that in aggregate equal or exceed 1500 MW in a single Interconnection.*

Attachment 1, Criterion 2.2

Each BES reactive resource or group of resources at a single location (excluding generation Facilities) with an aggregate maximum Reactive Power nameplate rating of 1000 MVAR or greater (excluding those at generation Facilities). *The only BES Cyber Systems that meet this criterion are those shared BES*

Requested information
Cyber Systems that could, within 15 minutes, adversely impact the reliable operation of any combination of resources that in aggregate equal or exceed 1000 MVAR. *Attachment 1, Criterion 2.9* *Each Special Protection System (SPS), Remedial Action Scheme (RAS), or automated switching System that operates BES Elements,* that, if destroyed, degraded, misused or otherwise rendered unavailable, would cause one or more Interconnection Reliability Operating Limits (IROLs) violations for failure to operate as designed or cause a reduction in one or more IROLs if destroyed, degraded, misused, or otherwise rendered unavailable. *Attachment 1, Criterion 2.10*. *Each system or group of Elements that performs automatic Load shedding under a common control system,* without human operator initiation, of 300 MW or more implementing undervoltage load shedding (UVLS) or underfrequency load shedding (UFLS) under a load shedding program that is subject to one or more requirements in a NERC or regional reliability standard. The language in each of these criteria allows the application of requirements for the CIP Medium Impact rating by permitting the segmentation of systems or by specifying the systems that are the focus of the criterion at a single generating facility. In contrast, Criterion 2.6 does not permit the opportunity for segmentation and requires the application of the full suite of CIP Medium Impact controls for the entire generating facility, irrespective of whether certain target systems can be segmented from the remainder of the facility. This disparity in approach results in a suboptimal and inefficient approach for applicable entities. *Attachment 1, Criterion 2.6.* *Generation at a single plant location* or Transmission Facilities at a single station or substation location that are identified by its Reliability Coordinator (RC), Planning Coordinator (PC), or Transmission Planner (TP) as critical to the derivation of Interconnection Reliability Operating Limits (IROLs) and their associated contingencies. The language in Criterion 2.6 provides no opportunity for the Registered Entity to implement CIP Medium Impact controls on specific BES Cyber Systems at the plant, even if only those systems were identified by the RC, PC, or TP as impactful to deriving IROLs or their associated contingencies. For example, an RC has previously invoked Criterion 2.6 on certain Generator Owners/Generator Operators with respect to only the generating facility's automatic voltage regulation and power system stabilizer status signal. Under the current language in Attachment 1, Criterion 2.6, the registered GO/GOP would have to implement the suite of CIP Medium Impact controls on BES Cyber Systems for the *entire* generating facility in lieu of protecting only the automatic voltage regulation signal and dependent systems that were specifically identified as critical by the RC. Thus, the Registered Entity would

Requested information

therefore incur significant and unnecessary expense in adding systems and tools to satisfy the CIP requirements and in hiring, training, and maintaining staff to successfully implement the CIP Medium Impact program across its entire facility. Furthermore, the implementation of the CIP Medium Impact program across the entire facility significantly increases the Registered Entity's compliance risk and could potentially serve as a distraction to the facility staff, diverting its attention from providing safe and reliable power to the grid. The current language therefore results in a suboptimal allocation of resources and an inefficient approach to meeting the intended reliability objective of protecting those systems crucial to deriving IROLs and its associated contingencies.

Contradicts the Intent of the Standard Drafting Team

The standard drafting team for CIP-002-5 specified its intent in the *Guidelines and Technical Basis* that accompanies the standard regarding the discretion entities have in applying the controls to their systems, Facilities, and equipment.

On Page 23 of 37 of the CIP-002-5.1a standard, Attachment 1 - Overall Application, the first bullet states that, *"Responsible Entities have flexibility in how they group Facilities, systems, and equipment at a location."* The application of Criterion 2.6 runs contrary to the drafting team's intention in that it prohibits the application of the intended flexibility in applying the controls to systems that could be grouped or segmented from others at the facility. This undermines the efficient approach intended by the drafting team.

In the standard language of CIP-002-5.1a, there is no reference or obligation to group BES Cyber Systems, however, entities are to apply their judgment in determining that the approach appropriate for their circumstances. This is supported by Section 6. Background, BES Cyber Systems, Pages 3-5 of 37, that states:

"This standard provides "bright-line" criteria for applicable Responsible Entities to categorize their BES Cyber Systems based on the impact of their associated Facilities, systems, and equipment, which, if destroyed, degraded, misused, or otherwise rendered unavailable, would affect the reliable operation of the Bulk Electric System."

"[i]t is left up to the Responsible Entity to determine the level of granularity at which to identify a BES Cyber System within the qualifications in the definition of BES Cyber System. For example, the Responsible Entity might choose to view an entire plant control system as a single BES Cyber System, or it might choose to view certain components of the plant control system as distinct BES Cyber Systems. The Responsible Entity should take into consideration the operational environment and scope of management when defining the BES Cyber System boundary in order to ***maximize efficiency*** *[emphasis added] in secure operations. Defining the boundary too tightly may result in redundant paperwork and authorizations, while defining the boundary too broadly could make the secure operation of the BES Cyber System difficult to monitor and assess."*

Furthermore, Section 6, Background, Reliable Operation of the BES, Page 5 of 37, states:

Requested information

"The scope of the CIP Cyber Security Standards is restricted to BES Cyber Systems that would impact the reliable operation of the BES. In order to identify BES Cyber Systems, Responsible Entities determine whether the BES Cyber Systems perform or support any BES reliability function according to those reliability tasks identified for their reliability function and the corresponding functional entity's responsibilities as defined in its relationships with other functional entities in the NERC Functional Model."

The standard drafting team clearly intended for the applicable entities to have the flexibility to determine its BES Cyber System at whatever level of granularity it deemed appropriate. The plain language of the CIP-002-5.1a standard does not require each BES Cyber System to have the same impact level and associated controls applied to it. Rather, the standard clearly delineates that certain systems can be identified and supported at a higher impact rating whereas others remain at a lower impact rating. In this regard, the standard treats Attachment 1, Criterion 2.6 differently, and removes the intended entity judgment that is available in other Attachment 1 criteria. Said differently, an applicable entity should be given the opportunity to segment its BES Cyber Systems that are triggering a higher impact classification, while retaining the lower impact classification for the remaining BES Cyber Systems, consistent with the segmentation allowed by other Attachment 1 criteria. To amplify this point using the example provided earlier, if an RC identifies the automatic voltage regulation signal and dependent systems as that which is important to its IROL derivation, then the Generator Owner and Generator Operator should have the opportunity provided in the language of the standard to focus CIP Medium Impact requirements on only those systems. This is consistent with the stated Purpose of the standard as well: *"To identify and categorize BES Cyber Systems and their associated BES Cyber Assets for the application of cyber security requirements commensurate with the adverse impact that loss, compromise, or misuse of those BES Cyber Systems could have on the reliable operation of the BES."*

Contradicts the "Acceptance Criteria of a Reliability Standard – Quality Objectives"

The current language of Attachment 1, Criterion 2.6 and resultant approach contradicts the NERC's "Acceptance Criteria of a Reliability Standard – Quality Objectives," Item 3, that states: *"Each requirement should establish an objective that is reasonably determined to be the best approach for Bulk-Power System reliability, taking account of the costs and benefits of implement the proposal."* Referencing FERC Order No. 672 language in the same NERC document:

- P324 states the standard "should be based on actual data learned from past operating incidents"
- P328 states that the standard "does not necessarily have to reflect the optimal method, or best practice….without regard to implementation cost."

Collectively, the language of Attachment 1, Criterion 2.6 unnecessarily requires the application of the CIP Medium Impact controls to the entire plant whereas practical experience over the past eight years supports that the intended reliability objective could be similarly attained through the segmentation of systems at the generating facility. This efficiency and resource allocation improvement would permit the implementation of the CIP medium impact controls for certain of the BES Cyber Systems and

Requested information

ultimately, result in a much more cost-responsible approach while achieving the same reliability objective.

In Item 5, NERC states that the standard "should be based upon sound engineering and operating judgment and the collective experience of the Drafting Team members." The previous section discusses how the drafting team's intent for flexibility in determining BES Cyber Systems is compromised by the current language in Attachment 1, Criterion 2.6.

Counters Many Years of Field Experience

As early as 2015, a Reliability Coordinator in the NPCC footprint sent letters notifying certain Generator Owners and Generator Operators that its automatic voltage regulator [AVR] and/or Power System Stabilizer [PSS] (if required to be in service) status signals were critical to the RC deriving IROLs. Registered Entities unsuccessfully attempted to gain clarity from NERC on the application of the appropriate CIP controls for these designated systems. In the absence of NERC guidance, NPCC provided guidance that the entity *"must determine which Cyber Assets support your AVR & PSS systems and protect those assets in accordance with any applicable CIP standards."* NPCC further guided *that "if you can group the assets into a BES Cyber System that is isolated from other functions, then the entire plant probably would not be considered a Medium Impact asset."*

As a result, certain applicable entities applied this approach and segmented their AVR & PSS-related systems and associated indication. However, recent updated guidance from NPCC indicates this approach is no longer recommended. Nonetheless, the previous practice based on NPCC's reasoned guidance had been successfully implemented over the past eight years without detriment to reliability and supports Item 5 in NERC's "Acceptance Criteria of a Reliability Standard – Quality Objectives." This opportunity for a targeted, more efficient application of the CIP Medium Impact controls needs to be spelled out specifically in the language of the standard.

Summary

Amending the current language in CIP-002-5.1a, Attachment 1, Criterion 2.6 to eliminate the "all or nothing" approach to the implementation of CIP Medium Impact controls for registered Generator Owners and Generator Operators will:

- Result in a more efficient application of the standard through a more targeted allocation of resources.
- Ensure Attachment 1, Criterion 2.6 is consistent with other criteria in permitting the segmentation or parsing of BES Cyber Systems to limit CIP exposure;
- Support the intent of the standard drafting team to permit entities to appropriately identify BES Cyber Systems (or groupings thereof) that should be subject to the standard's requirement;
- Align the criterion with NERC's "Acceptance Criteria of a Reliability Standard – Quality Objectives" in terms of achieving the reliability benefit with regard to the costs and benefits of implementing the proposal; and,

Requested information
• Be based on the many years of actual field experience in successfully protecting certain BES Cyber Systems that were previously identified by the RC, PC, or TP as impactful to system reliability. In addition, this project includes accompanying changes to FAC-014-3 – Establish and Communicate System Operating Limits to require the Reliability Coordinator, Planning Coordinator, and/or Transmission Planner to specify the systems/Elements at a single plant location that are critical to deriving IROLs and its associated contingencies, if not the entire single plant location.
Purpose or Goal (What are the reliability gap(s) or risk(s) to the Bulk Electric System being addressed, and how does this proposed project provide the reliability-related benefit described above?):
Generator Owners and Generator Operators are required to implement unnecessary NERC CIP Medium Impact requirements due to the overly broad language in Attachment 1, Criterion 2.6 that does not permit the segmentation of systems available in other criteria. This language results in an unnecessary cost burden for the load serving entities that purchase power in the organized markets where Criterion 2.6 has been invoked and creates potential distraction for the operating staff at the affected facilities that are subject to CIP standard obligations across their entire facility, versus the systems that are the true target in defining IROLs. Overall, the Attachment 1, Criterion 2.6 language results in an inefficient approach and an inequitable allocation of resources not commensurate with the reliability objective intended to be met. The goal is to modify CIP-002, Attachment 1, Criterion 2.6 to add the ability for Generator Owners and Generator Operators to segment systems at its facilities, in a manner consistent with other criteria in Attachment 1, to meet its compliance obligations when specific systems are identified by the RC/PC/TP in its notification. The modification should also ensure any sub-systems upon which the specified systems depend are included in the scope of this criterion. In addition, this project also requires amendment to the language contained in FAC-014 to require the Reliability Coordinator, Planning Coordinator, and/or Transmission Planner to specify the systems/Elements at a single plant location that are critical to deriving IROLs and its associated contingencies, if their IROL derivation does not require the entire single plant location to be included.
Project Scope (Define the parameters of the proposed project):
The project scope modifies the following NERC Standards in order to improve the ability of applicable entities to comply with the requirements and create enhanced implementation efficiencies by better allocating resources to achieve the standards' objectives: 1) Include the opportunity in CIP-002, Attachment 1, Criterion 2.6 for Generator Owners and Generator Operators to be able to segment certain systems as appropriate within the generating facility as specified by the requesting Reliability Coordinator in its IROL designation notice for purposes of implementing Medium Impact CIP requirements.

Requested information
a. To the extent the segmented systems are dependent on other subsystems to operate properly, the standard language should ensure that those supporting systems are also included in the scope of Medium Impact CIP requirements. 2) Within FAC-014, provide Reliability Coordinators the ability to describe in detail the specific systems or subsystems that are important at a generating facility to deriving IROLs and including that information in the notice to the GO/GOPs when invoking the CIP-002, Attachment 1, Criterion 2.6.
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] of developing a new or revised Reliability Standard or definition, which includes a discussion of the risk and impact to reliability-of the BES, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
Add the following language to current, enforceable version of NERC CIP-002-Attachment 1 Criterion 2.6: <u>Existing Language</u> Generation at a single plant location or Transmission Facilities at a single station or substation location that are identified by its Reliability Coordinator (RC), Planning Coordinator (PC), or Transmission Planner (TP) as critical to the derivation of Interconnection Reliability Operating Limits (IROLs) and their associated contingencies. <u>Recommended Language</u> Generation at a single plant location or Transmission Facilities at a single station or substation location that are identified by its Reliability Coordinator (RC), Planning Coordinator (PC), or Transmission Planner (TP) as critical to the derivation of Interconnection Reliability Operating Limits (IROLs) and their associated contingencies. ***For each generating plant location, the only BES Cyber Systems that meet this criterion are those associated with the specific reliability functions that are identified as critical to deriving IROLs and their associated contingencies, if so specified.*** Add the following language to current enforceable version of NERC FAC-014 – Establish and Communicate System Operating Limits <u>Existing Language</u> R5. Each Reliability Coordinator shall provide: 5.6 Each impacted Generator Owner or Transmission Owner, within its Reliability Coordinator Area, with a list of their Facilities that have been identified as critical to the derivation of an IROL and its associated critical contingencies at least once every twelve calendar months.

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
R8. Each Planning Coordinator and each Transmission Planner shall annually communicate to each impacted Transmission Owner and Generation Owner a list of their Facilities that comprise the planning event Contingency(ies) that would cause instability, Cascading or uncontrolled separation that adversely impacts the reliability of the BES as identified in its Planning Assessment of the Near-Term Transmission Planning Horizon. Recommended Language 5.6 Each impacted Generator Owner or Transmission Owner, within its Reliability Coordinator Area, with a list of their Facilities ***or, as appropriate, specified systems within their Facilities***, that have been identified as critical to the derivation of an IROL and its associated critical contingencies at least once every twelve calendar months. R8. Each Planning Coordinator and each Transmission Planner shall annually communicate to each impacted Transmission Owner and Generation Owner a list of their Facilities ***or, as appropriate, specified systems within their Facilities***, that comprise the planning event Contingency(ies) that would cause instability, Cascading or uncontrolled separation that adversely impacts the reliability of the BES as identified in its Planning Assessment of the Near-Term Transmission Planning Horizon.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
Actual operating experience implementing a CIP Medium Impact program for the entire generating facility in lieu of only the targeted systems will result in at least a five-fold (5x) increase in the annual operating cost, from several hundreds of thousands dollars to over one million dollars annually.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
Generating Facilities for which targeted systems could be segmented from the remainder of the facility and be treated uniquely as requiring CIP Medium Impact controls.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the NERC Rules of Procedure Appendix 5A:
Generator Owners, Generator Operators, Reliability Coordinators/Planning Coordinators, of which several should be from the ISO-New England footprint in which this issue originated.
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
None
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
No.

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Requested information
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives with the benefits of using them.
No

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☐	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☐	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☒	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☒	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☒	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
e.g., NPCC	

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☒ Draft SAR reviewed by NERC Staff	☐ Final SAR endorsed by the SC
☐ Draft SAR presented to SC for acceptance	☐ SAR assigned a Standards Project by NERC
☐ DRAFT SAR approved for posting by the SC	☐ SAR denied or proposed as Guidance document
Risk Tracking.	
☐ Grid Transformation	☐ Energy Policy
☐ Resilience/Extreme Events	☐ Critical Infrastructure Interdependencies
☐ Security Risks	

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer
5	August 14, 2023	Standards Development Staff	Updated template as part of Standards Process Stakeholder Engagement Group
6	June 4, 2023	Standards Information Staff	Updated link to the NERC Reliability Principles