

A. Introduction

1. **Title:** Cyber Security — Critical Cyber Asset Identification
2. **Number:** CIP-002-3a
3. **Purpose:** NERC Standards CIP-002-3 through CIP-009-3 provide a cyber security framework for the identification and protection of Critical Cyber Assets to support reliable operation of the Bulk Electric System.

These standards recognize the differing roles of each entity in the operation of the Bulk Electric System, the criticality and vulnerability of the assets needed to manage Bulk Electric System reliability, and the risks to which they are exposed.

Business and operational demands for managing and maintaining a reliable Bulk Electric System increasingly rely on Cyber Assets supporting critical reliability functions and processes to communicate with each other, across functions and organizations, for services and data. This results in increased risks to these Cyber Assets.

Standard CIP-002-3 requires the identification and documentation of the Critical Cyber Assets associated with the Critical Assets that support the reliable operation of the Bulk Electric System. These Critical Assets are to be identified through the application of a risk-based assessment.

4. **Applicability:**
 - 4.1. Within the text of Standard CIP-002-3, “Responsible Entity” shall mean:
 - 4.1.1 Reliability Coordinator.
 - 4.1.2 Balancing Authority.
 - 4.1.3 Interchange Authority.
 - 4.1.4 Transmission Service Provider.
 - 4.1.5 Transmission Owner.
 - 4.1.6 Transmission Operator.
 - 4.1.7 Generator Owner.
 - 4.1.8 Generator Operator.
 - 4.1.9 Load Serving Entity.
 - 4.1.10 NERC.
 - 4.1.11 Regional Entity.
 - 4.2. The following are exempt from Standard CIP-002-3:
 - 4.2.1 Facilities regulated by the U.S. Nuclear Regulatory Commission or the Canadian Nuclear Safety Commission.
 - 4.2.2 Cyber Assets associated with communication networks and data communication links between discrete Electronic Security Perimeters.
5. **Effective Date:** The first day of the third calendar quarter after applicable regulatory approvals have been received (or the Reliability Standard otherwise becomes effective the first day of the third calendar quarter after BOT adoption in those jurisdictions where regulatory approval is not required)

B. Requirements

- R1.** Critical Asset Identification Method — The Responsible Entity shall identify and document a risk-based assessment methodology to use to identify its Critical Assets.
- R1.1.** The Responsible Entity shall maintain documentation describing its risk-based assessment methodology that includes procedures and evaluation criteria.
- R1.2.** The risk-based assessment shall consider the following assets:
- R1.2.1.** Control centers and backup control centers performing the functions of the entities listed in the Applicability section of this standard.
- R1.2.2.** Transmission substations that support the reliable operation of the Bulk Electric System.
- R1.2.3.** Generation resources that support the reliable operation of the Bulk Electric System.
- R1.2.4.** Systems and facilities critical to system restoration, including blackstart generators and substations in the electrical path of transmission lines used for initial system restoration.
- R1.2.5.** Systems and facilities critical to automatic load shedding under a common control system capable of shedding 300 MW or more.
- R1.2.6.** Special Protection Systems that support the reliable operation of the Bulk Electric System.
- R1.2.7.** Any additional assets that support the reliable operation of the Bulk Electric System that the Responsible Entity deems appropriate to include in its assessment.
- R2.** Critical Asset Identification — The Responsible Entity shall develop a list of its identified Critical Assets determined through an annual application of the risk-based assessment methodology required in R1. The Responsible Entity shall review this list at least annually, and update it as necessary.
- R3.** Critical Cyber Asset Identification — Using the list of Critical Assets developed pursuant to Requirement R2, the Responsible Entity shall develop a list of associated Critical Cyber Assets essential to the operation of the Critical Asset. Examples at control centers and backup control centers include systems and facilities at master and remote sites that provide monitoring and control, automatic generation control, real-time power system modeling, and real-time inter-utility data exchange. The Responsible Entity shall review this list at least annually, and update it as necessary. For the purpose of Standard CIP-002-3, Critical Cyber Assets are further qualified to be those having at least one of the following characteristics:
- R3.1.** The Cyber Asset uses a routable protocol to communicate outside the Electronic Security Perimeter; or,
- R3.2.** The Cyber Asset uses a routable protocol within a control center; or,
- R3.3.** The Cyber Asset is dial-up accessible.
- R4.** Annual Approval — The senior manager or delegate(s) shall approve annually the risk-based assessment methodology, the list of Critical Assets and the list of Critical Cyber Assets. Based on Requirements R1, R2, and R3 the Responsible Entity may determine that it has no Critical Assets or Critical Cyber Assets. The Responsible Entity shall keep a signed and dated record of

the senior manager or delegate(s)'s approval of the risk-based assessment methodology, the list of Critical Assets and the list of Critical Cyber Assets (even if such lists are null.)

C. Measures

- M1.** The Responsible Entity shall make available its current risk-based assessment methodology documentation as specified in Requirement R1.
- M2.** The Responsible Entity shall make available its list of Critical Assets as specified in Requirement R2.
- M3.** The Responsible Entity shall make available its list of Critical Cyber Assets as specified in Requirement R3.
- M4.** The Responsible Entity shall make available its approval records of annual approvals as specified in Requirement R4.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

- 1.1.1** Regional Entity for Responsible Entities that do not perform delegated tasks for their Regional Entity.
- 1.1.2** ERO for Regional Entity.
- 1.1.3** Third-party monitor without vested interest in the outcome for NERC.

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable.

1.3. Compliance Monitoring and Enforcement Processes

- Compliance Audits
- Self-Certifications
- Spot Checking
- Compliance Violation Investigations
- Self-Reporting
- Complaints

1.4. Data Retention

- 1.4.1** The Responsible Entity shall keep documentation required by Standard CIP-002-3 from the previous full calendar year unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- 1.4.2** The Compliance Enforcement Authority in conjunction with the Registered Entity shall keep the last audit records and all requested and submitted subsequent audit records.

1.5. Additional Compliance Information

- 1.5.1** None.

2. Violation Severity Levels (To be developed later.)

E. Regional Variances

None identified.

Version History

Version	Date	Action	Change Tracking
1	January 16, 2006	R3.2 — Change “Control Center” to “control center”	Errata
2		<p>Modifications to clarify the requirements and to bring the compliance elements into conformance with the latest guidelines for developing compliance elements of standards.</p> <p>Removal of reasonable business judgment.</p> <p>Replaced the RRO with the RE as a responsible entity.</p> <p>Rewording of Effective Date.</p> <p>Changed compliance monitor to Compliance Enforcement Authority.</p>	
3		Updated version number from -2 to -3	
3	December 16, 2009	Approved by the NERC Board of Trustees	Update
3a	May 9, 2012	Adopted by the NERC Board of Trustees	
3a	March 21, 2013	FERC Order Issued remanding the interpretation of R3.	

Appendix 1

Requirement Number and Text of Requirement
<p>R3. Critical Cyber Asset Identification — Using the list of Critical Assets developed pursuant to Requirement R2, the Responsible Entity shall develop a list of associated Critical Cyber Assets essential to the operation of the Critical Asset. Examples at control centers and backup control centers include systems and facilities at master and remote sites that provide monitoring and control, automatic generation control, real-time power system modeling, and real-time inter-utility data exchange. The Responsible Entity shall review this list at least annually, and update it as necessary. For the purpose of Standard CIP-002, Critical Cyber Assets are further qualified to be those having at least one of the following characteristics:</p> <p>R3.1. The Cyber Asset uses a routable protocol to communicate outside the Electronic Security Perimeter; or,</p> <p>R3.2. The Cyber Asset uses a routable protocol within a control center; or,</p> <p>R3.3. The Cyber Asset is dial-up accessible.</p>
Question 1
<p>Is the phrase “Examples at control centers and backup control centers include systems and facilities at master and remote sites that provide monitoring and control, automatic generation control, real-time power system modeling, and real-time inter-utility data exchange” meant to be prescriptive, i.e., that any and all systems and facilities utilized in monitoring and control, automatic generation control, real-time power system modeling, and real-time inter-utility data exchange, must be classified as Critical Cyber Assets, or is this phrase simply meant to provide examples of the types of systems that should be assessed for inclusion in the list of Critical Cyber Assets using an entity’s critical cyber asset methodology?</p>
Response to Question 1
<p>The phrase “Examples at control centers and backup control centers include systems and facilities at master and remote sites that provide monitoring and control, automatic generation control, real-time power system modeling, and real-time inter-utility data exchange” is illustrative, not prescriptive. It simply provides examples of the types of Cyber Assets that should be considered. It does not imply that the items listed must be classified as Critical Cyber Assets, nor is it intended to be an exhaustive list of Critical Cyber Asset types.</p>
Question 2
<p>What does the phrase, "essential to the operation of the Critical Asset" mean? If an entity has an asset that "may" be used to operate a Critical Asset, but is not "required" for operation of that Critical Asset, is the asset considered "essential to the operation of the Critical Asset"? Remote access to the systems is valuable to operations (see Material Impact Statement below), but operation of the Critical Asset is not literally dependent on these laptops.</p>
Response to Question 2

The word “essential” is not defined in the *Glossary of Terms used in NERC Reliability Standards*, but the well-understood meaning and ordinary usage of the word “essential” implies “inherent to” or “necessary.” The phrase “essential to the operation of the Critical Asset” means inherent to or necessary for the operation of the Critical Asset.

A Cyber Asset that “may” be used, but is not “required” (i.e., a Critical Asset cannot function as intended without the Cyber Asset), for the operation of a Critical Asset is not “essential to the operation of the Critical Asset” for purposes of Requirement R3. Similarly, a Cyber Asset that is merely “valuable to” the operation of a Critical Asset, but is not necessary for or inherent to the operation of that Critical Asset, is not “essential to the operation” of the Critical Asset.