ENERGY COMPLIANCE, INC. | *Field Reference for NERC Compliance Foundations*

FOUNDATIONS SERIES · EC-WP-102

Registered Entity Functions and Reliability Responsibilities

How NERC organizes reliability around what entities do, not what they own

NERC assigns reliability responsibilities by function, not by asset ownership. This reference walks each Registered Entity Function and the responsibilities that come with it.

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Foreword

This professional reference is one of a series Energy Compliance, Inc. publishes for registered entities and the people who run their compliance programs.

I've spent more than thirty years on every side of the bulk electric system. I've operated control centers as a Reliability Coordinator, Transmission Operator, and Power System Operator. I've audited grid facilities and signed off on findings as a senior compliance auditor. I've worked enforcement matters from inside the regulator's process. For the last several years I've advised registered entities directly through the firm I founded.

The entities that do reliability well share a common habit. They take the standards seriously without confusing them with reliability itself. They know that a NERC Reliability Standard is a floor, not a ceiling. They know that compliance is something an auditor evaluates, but reliability is something a system either delivers or doesn't. They prepare for audits by building programs that survive real questions, not binders that look thick.

That's the perspective these references try to share. Each one focuses on a single topic: a standard family, an operational function, a regulatory framework, or an emerging industry challenge. Each one walks through how the topic actually works.

These references are written for the compliance manager who wants to understand the system, not just memorize requirements. For the legal counsel who has to brief a board honestly. For the senior operator who's been told that compliance and reliability are the

same thing and suspects they aren't. And for the new compliance hire who got handed a binder and told good luck.

These references aren't marketing material disguised as content. They're the result of three decades of doing this work and watching it succeed and fail. I've written them in the same voice I use in a control room or in front of a Regional Entity audit team: direct, evidence-grounded, and honest about what the standards do and do not require.

Energy Compliance exists because much of the consulting offered to registered entities today is structured for billable hours rather than for outcomes. Every engagement is overseen by a senior practitioner. We don't bring five people to a meeting that needs one. We automate the work that should be automated. We apply senior judgment to the work that requires it. If that approach matches what you're looking for in a compliance partner, the back of this reference has our contact information.

If not, the reference still belongs to you. Take what's useful. Apply it well. And remember the only test that ultimately matters: when the system needs to perform, does it?

Rob Smith

Founder and Principal, Energy Compliance, Inc.

Executive Summary

NERC organizes reliability around what entities do, not what they own. A company that owns a substation isn't necessarily a Transmission Operator in the regulatory sense. A company that owns a generating plant isn't necessarily its Generator Operator. Reliability obligations attach to functions, and an entity registers for the functions it actually performs. Get the function wrong and you've registered for the wrong obligations.

This reference walks each registered function in turn: the Reliability Coordinator, Balancing Authority, Transmission Operator, Transmission Owner, Generator Owner and Generator Operator, and Planning Coordinator, then the supporting functions such as Distribution Provider, Transmission Planner, Resource Planner and Transmission Service Provider. For each it covers what the function is accountable for, which standards carry that accountability, and where it hands off to the others. The last three chapters look at coordination across functions, how the functions are changing with inverter-based resources and large computational loads, and what the functional design means for accountability.

Six points carry through every chapter:

- If you do the work of a Transmission Operator, you are a candidate for Transmission Operator registration, and once registered you carry its obligations. The deed to the asset doesn't settle the question.
- In my view, functional misregistration is the most expensive registration mistake. The cost shows up at audit, not at registration.
- The Reliability Coordinator sits at the top of the operating hierarchy. Transmission Operators and Balancing Authorities also issue binding Operating Instructions. Refusing any of them outside the listed exceptions (IRO-001-4 R2, TOP-001-6 R3 and R5) is a violation, not a discussion.
- Function overlap is normal. Coordination across the overlap is where trouble spreads.
- Outsourcing the operation does not outsource the registration. The contractor performs; the registered entity stays accountable, unless the responsibility has been formally transferred to another registered entity.
- When operations change, registration has to change. The Rules of Procedure require registered entities to report changes, and failing to report them relieves no one of anything.

The chapters cite the NERC Rules of Procedure, the Statement of Compliance Registry Criteria, the NERC Glossary of Terms and the standards themselves. Where a statement is my judgment rather than a rule, the text says so.

1 The Functional Basis of Reliability Responsibility

1.1 Function, Not Ownership

The North American bulk power system stays reliable through the coordinated work of many organizations performing distinct but interrelated functions. The NERC Reliability Standards do not assign responsibility by ownership alone, by what technology a component uses, or by what role its owner plays in the energy market. They assign responsibility by function.

That choice sits at the core of the framework. It decides who answers for what, and which functions have to coordinate. Section 215 of the Federal Power Act requires all users, owners and operators of the bulk-power system to comply with approved reliability standards. The functional design decides which standards each of them has to meet.

1.2 Where the Functions Are Defined

Three documents do the defining, and they carry different weight.

- **The NERC Glossary of Terms** defines each functional entity, such as Reliability Coordinator, Balancing Authority and Generator Owner. Those definitions are part of the enforceable standards.
- **The Statement of Compliance Registry Criteria** (Appendix 5B to the NERC Rules of Procedure, Revision 8, effective June 27, 2024) lists the function types an organization can be registered for and the thresholds for some of them.
- **The NERC Reliability Functional Model** describes reliability tasks and the entities that perform them. NERC's Version 5.1 says plainly that the Model "is not a Standard and does not have compliance requirements," that it is a guideline for developing standards and their applicability, and that registration criteria are found in the registration manual and the Registry Criteria.

The practical rule: the Functional Model explains the logic, but the Registry Criteria and each standard's applicability section decide what an organization actually owes.

1.3 What This Reference Covers

The reader who finishes this reference will understand:

- Why NERC organizes reliability around functions rather than assets, ownership or market role
- The core responsibilities of the Reliability Coordinator, Balancing Authority, Transmission Operator, Transmission Owner, Generator Owner, Generator Operator and Planning Coordinator
- How distribution, planning and other supporting functions fit into the framework

- Where functions overlap, where they hand off, and where coordination is essential
- How the functional design supports, and sometimes constrains, accountability under NERC enforcement

End-of-Chapter Summary

The NERC Reliability Standards identify who carries reliability responsibility by function, not by asset ownership or technology. The Glossary defines the functions, the Registry Criteria decide who is registered for them, and each standard's applicability section decides what applies. Understanding the functional approach is the first step to understanding what a registered entity owes.

> **From the Field**
>
> The function is what registers. The asset is evidence of the function, nothing more.

2 Overview of Registered Entity Functional Categories

2.1 The Registered Functions Today

Section II of the Registry Criteria compares the functions an organization normally performs against a list of function type definitions. An organization may be registered for one function or several. The current list:

Function	Acronym	What it does (per Appendix 5B)
Reliability Coordinator	RC	Highest operating authority, with the Wide Area view
Balancing Authority	BA	Maintains load-interchange-generation balance; supports frequency
Transmission Operator	TOP	Operates or directs operation of its local transmission system
Transmission Owner	TO	Owns and maintains transmission Facilities
Generator Owner	GO	Owns and maintains generating Facilities (Category 1 or 2)
Generator Operator	GOP	Operates generating Facilities (Category 1 or 2)
Planning Authority / Coordinator	PA/PC	Integrates transmission, resource and protection plans
Transmission Planner	TP	Long-term transmission reliability plan for its area
Resource Planner	RP	Long-term resource adequacy plan for specific Loads
Transmission Service Provider	TSP	Administers the tariff; provides Transmission Service
Distribution Provider	DP	Operates the wires between transmission and end users
Reserve, Regulation and Frequency Response Sharing Groups	RSG, RRSG, FRSG	Two or more BAs jointly supplying reserves or response

Appendix 5B also defines the UFLS-Only Distribution Provider, a Distribution Provider whose only registrable assets are underfrequency load shedding Protection Systems. Chapter 9 covers it.

2.2 Functions No Longer Registered

Older references list the Load-Serving Entity, Interchange Authority and Purchasing-Selling Entity as registered functions. They are not on the current list in Appendix 5B. FERC approved

removing the Purchasing-Selling Entity and Interchange Authority as registration categories on March 19, 2015, as part of NERC's risk-based registration initiative (Docket No. RR15-4-000), and the Load-Serving Entity no longer appears in the Registry Criteria either. The Glossary still defines those terms, and a few older standards still name the Load-Serving Entity in their applicability sections, but no organization is registered for those functions today.

2.3 Registration Is Not Applicability

Registration and applicability are separate questions. Registration puts an organization on the NERC Compliance Registry for one or more functions. Applicability is set standard by standard: each standard's applicability section names the functional entities and, often, the Facilities it reaches. A registered Generator Owner is not subject to every standard that mentions Generator Owners. It is subject to the ones whose applicability sections reach its Facilities.

The Registry Criteria build the same idea in from the other direction. An entity that falls below the criteria may still be registered if it has a material impact on the reliability of the bulk power system, and an entity that meets them may be excluded if it shows it does not. Those decisions belong to the NERC-led Registration Review Panel, which applies a non-exclusive set of materiality factors.

2.4 Four Broad Kinds of Work

It helps to group the functions by the kind of work they do. This grouping is mine, not NERC's:

- **Operating** functions act in real time and the hours around it: the RC, BA, TOP and GOP.
- **Owning** functions are responsible for the condition, ratings, protection and data of physical Facilities: the TO and GO.
- **Planning** functions look a year and more ahead: the PC, TP and RP.
- **Supporting and distribution** functions sit at the edges: the DP, UFLS-Only DP, TSP and the sharing groups.

Each function is defined broadly. The detailed obligations live in the standards. Understanding the scope of each function, and how responsibility divides among them, explains why so many requirements are written as one entity providing something to another.

End-of-Chapter Summary

Appendix 5B defines the functions an organization can be registered for. The list changed in 2015, when FERC approved NERC's risk-based registration initiative. Registration places an organization on the Compliance Registry for a function; each standard's applicability section then decides which requirements reach it.

> **From the Field**
>
> Registration decides which functions you answer for. The applicability sections decide which standards. Register for a function and you accept every applicable obligation that comes with it, including the ones you didn't read.

3 Reliability Coordinator Responsibilities and Authority

3.1 The Highest Level of Authority

The NERC Glossary defines the Reliability Coordinator as "the entity that is the highest level of authority who is responsible for the Reliable Operation of the Bulk Electric System," with the Wide Area view and the tools, processes and procedures, "including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations." The definition adds that the RC's purview is broad enough to calculate Interconnection Reliability Operating Limits, which may depend on transmission systems beyond any single Transmission Operator's vision.

The Rules of Procedure make that structure concrete. Section 501 requires the registration process to ensure that every area is under the oversight of one and only one Reliability Coordinator, and that every Balancing Authority and Transmission Operator is under the responsibility of one and only one RC. Under Appendix 5A to the Rules of Procedure, new RCs, like new BAs and TOPs, must be certified before they operate.

3.2 The Wide-Area View

The RC watches what individual operators can't. IRO-002-7 requires each RC to monitor Facilities, Remedial Action Scheme status and identified non-BES facilities within its own area and neighboring RC Areas to identify System Operating Limit exceedances. IRO-008-3 Requirement R4 requires the RC to ensure that a Real-time Assessment is performed at least once every 30 minutes.

That visibility matters because reliability problems don't respect company boundaries. Flows from one system load another. A developing problem two areas away may not show on a local operator's displays until it arrives.

3.3 Operating Instructions and the Duty to Comply

IRO-001-4 sets out the RC's authority and the obligation that follows from it. Requirement R1 requires each RC to "act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions." Requirement R2 requires each Transmission Operator, Balancing Authority, Generator Operator and Distribution Provider to comply with its RC's Operating Instructions unless the instruction cannot be physically implemented or would violate safety, equipment, regulatory or statutory requirements. Requirement R3 requires those entities to tell the RC when they can't perform an instruction.

An Operating Instruction, as the Glossary defines it, is a command to change or preserve the state, status, output or input of a BES Element or Facility. A discussion of options is not a

command. That distinction matters in an audit, because the obligation to comply attaches to the command, and the evidence has to show which one was given.

3.4 Coordination Among Reliability Coordinators

RCs coordinate with each other as well as with the entities below them. IRO-014-3 requires each RC to have and implement Operating Procedures, Processes or Plans for activities that require notification or coordination of actions that may affect adjacent RC Areas. Where impacted RCs disagree on whether an Emergency exists, the RC that identified it must develop an action plan to resolve it.

3.5 What the RC Is Not

The RC does not operate generation, transmission or distribution Facilities on its own account. It directs, coordinates and analyzes. It supports event analysis by bringing the wide-area record that individual operators don't have. And it does its work through established procedures and tools, though the standards set outcomes rather than prescribing particular software.

The RC serves two purposes. It keeps any one operator from acting in isolation without regard to system-wide effects, and it enables coordinated action when a problem can't be contained within one operator's area.

End-of-Chapter Summary

The Reliability Coordinator carries the highest level of operating authority and the widest view of the system. It monitors its own and neighboring areas, performs Real-time Assessments at least every 30 minutes, and issues Operating Instructions that TOPs, BAs, GOPs and DPs must follow except in the narrow cases IRO-001-4 allows. Its authority is the backstop the framework relies on when local action isn't enough.

> **From the Field**
>
> The RC sits at the top of the operating chain. That authority isn't symbolic. It's the structural basis for wide-area coordination.
>
> My view: the standards expect RCs to use their authority when it's needed, not to ration it. An RC that hesitates in an emergency misses the point of the role as surely as one that overreaches.
>
> For everyone below the RC, the exceptions to compliance are narrow and written down. Know them before you need them, and log the reason when you use one.

4 Balancing Authority Responsibilities and System Frequency Control

4.1 Balance and Frequency

The Glossary defines the Balancing Authority as "the responsible entity that integrates resource plans ahead of time, maintains Demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time." The core job is matching generation, interchange and load continuously so frequency stays within limits.

Frequency is an Interconnection-wide quantity. An imbalance in one Balancing Authority Area shows up as a frequency deviation everywhere on the Interconnection, which is why the BA's local performance is everyone's concern. Section 501 of the Rules of Procedure requires the registration process to ensure that all Loads and generators are under the responsibility and control of one and only one Balancing Authority.

4.2 Performance the Standards Measure

The BAL standards turn the BA's job into numbers.

- **BAL-001-2**, Real Power Balancing Control Performance, sets Control Performance Standard 1 (CPS1) and the Balancing Authority ACE Limit (BAAL).
- **BAL-002-3**, the Disturbance Control Standard, requires a BA or Reserve Sharing Group that experiences a Reportable Balancing Contingency Event to recover its Reporting ACE within the Contingency Event Recovery Period.
- **BAL-003-2**, Frequency Response and Frequency Bias Setting, requires each BA or Frequency Response Sharing Group to achieve an annual Frequency Response Measure that meets its Frequency Response Obligation.

4.3 Sharing Groups

BAs can meet some obligations jointly. The Registry Criteria define the Reserve Sharing Group, Regulation Reserve Sharing Group and Frequency Response Sharing Group, each made up of two or more Balancing Authorities. The applicability sections of BAL-001-2 and BAL-002-3 shift responsibility to the group while the member BA is in active status under the group's agreement, and back to the BA when it isn't; BAL-003-2 makes the Frequency Response Sharing Group the responsible entity for its members. That makes the agreement and the status records part of the compliance evidence.

4.4 Operating Instructions and Emergencies

The BA issues Operating Instructions as well as receiving them. TOP-001-6 Requirement R2 requires each BA to act to maintain the reliability of its Balancing Authority Area through its own actions or by issuing Operating Instructions, and Requirement R5 requires each Transmission Operator, Generator Operator and Distribution Provider to comply with the BA's Operating Instructions, subject to the same physical, safety, equipment, regulatory and statutory exceptions. Above the BA, IRO-001-4 requires the BA to follow its RC's instructions.

Emergency planning sits on top of daily balancing. EOP-011-4 Requirement R2 requires each BA to develop, maintain and implement Reliability Coordinator-reviewed Operating Plans to mitigate Capacity Emergencies and Energy Emergencies in its area.

4.5 Market Structure Does Not Change the Function

The BA function exists whether an area runs an organized market or relies on bilateral contracts. In either case someone has to keep load and resources balanced in real time and support Interconnection frequency. Frequency stability comes from the combined performance of every BA on the Interconnection, which is what makes the function so interdependent.

End-of-Chapter Summary

The Balancing Authority keeps generation, interchange and load in balance and supports Interconnection frequency. BAL-001-2, BAL-002-3 and BAL-003-2 measure that performance through CPS1, BAAL, contingency recovery and the Frequency Response Measure. The BA both follows RC Operating Instructions and issues its own, which TOPs, GOPs and DPs must follow.

> **From the Field**
>
> The BA maintains real-time balance and frequency. Frequency is the scoreboard.
>
> Frequency excursions affect every entity in the Interconnection. A BA's poor performance is everyone else's reliability problem.
>
> The BAL standards quantify the BA's obligations. CPS1, BAAL, contingency reserve recovery and the Frequency Response Measure aren't suggestions. They're enforceable, and the data either meets them or it doesn't.

5 Transmission Operator Responsibilities and Real-Time System Control

5.1 The Function

The Glossary defines the Transmission Operator as "the entity responsible for the reliability of its 'local' transmission system, and that operates or directs the operations of the transmission Facilities." Where the RC sees the wide area, the TOP runs its own system: switching, voltage management, keeping flows within Facility Ratings and System Operating Limits, and responding to contingencies.

5.2 Real-Time Awareness

The TOP has to know where its system stands relative to its limits at all times. TOP-001-6 Requirement R13 requires each TOP to ensure that a Real-time Assessment is performed at least once every 30 minutes. With variable generation and changing load, flows on critical paths can shift quickly. Thirty minutes is the floor, not the target.

5.3 Operating Instructions

TOP-001-6 Requirement R1 requires each TOP to act to maintain the reliability of its Transmission Operator Area through its own actions or by issuing Operating Instructions. Requirement R3 requires each Balancing Authority, Generator Operator and Distribution Provider to comply with each Operating Instruction issued by its TOP, unless the action can't be physically implemented or would violate safety, equipment, regulatory or statutory requirements. Requirement R4 requires them to tell the TOP when they can't.

The TOP's actions to manage risk include redispatch in coordination with the BA, reconfiguring the transmission system, managing voltage with reactive resources and, when necessary, shedding load. The standards define the obligation to act and to coordinate. They don't dictate how each TOP does the work.

5.4 Contingencies, Emergencies and Restoration

Because the system is interconnected, a local decision can reach well beyond one TOP's area. TOP-001-6 Requirement R8 requires each TOP to inform its RC and known impacted BAs and TOPs of actual or expected operations that result in, or could result in, an Emergency. Requirement R7 requires a TOP to assist other TOPs in its RC Area when requested and able, provided the requester has implemented its comparable Emergency procedures.

When the system goes down, the TOP leads the rebuild. EOP-005-3 Requirement R1 requires each TOP to develop and implement a restoration plan approved by its Reliability Coordinator for restoring its system after a Disturbance in which one or more areas of the BES shut down and Blackstart Resources are needed.

5.5 Operation Without Ownership, and Preparation

The TOP function does not require ownership. A Transmission Owner need not be a Transmission Operator, and a TOP may operate Facilities it doesn't own. The party that controls the Facilities carries the operating responsibility.

Preparation matters as much as authority. PER-005-2 requires each RC, BA and TOP to use a systematic approach to develop and implement a training program for its System Operators. The method matters less than the result: operators who know the system, the normal procedures and the emergency procedures well enough to act without hesitation.

End-of-Chapter Summary

The Transmission Operator runs its transmission system in real time, keeps it within limits, and issues Operating Instructions that BAs, GOPs and DPs must follow. It performs Real-time Assessments at least every 30 minutes, warns its RC and neighbors of developing Emergencies, and leads restoration under an RC-approved plan. It translates studies and limits into actions on the system.

> **From the Field**
>
> The TOP runs the transmission system in real time. Switching, voltage management and contingency response are TOP responsibilities, performed continuously.
>
> A TOP that defers every contingency decision to a higher authority isn't acting as a TOP. The standards expect decisions at the TOP level.
>
> In my view, TOP findings often trace to procedural drift between operations and the standards. The drift is slow, and an audit catches it eventually.

6 Transmission Owner Responsibilities and Asset Stewardship

6.1 The Function

The Glossary defines the Transmission Owner simply: "the entity that owns and maintains transmission Facilities." The TO doesn't direct the system second to second, but its decisions on ratings, protection, maintenance and data set the limits everyone else operates within.

6.2 Facility Ratings

Ratings are where ownership meets operations. FAC-008-5 applies to Transmission Owners and Generator Owners. Requirement R6 requires each TO and GO to have Facility Ratings for its solely and jointly owned Facilities that are consistent with its Facility Ratings methodology. Requirement R8 requires the TO to provide requested rating information to its Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Owner and Transmission Operator.

6.3 Protection System Maintenance

Protection decides how a fault ends. PRC-005-6 requires each Transmission Owner, Generator Owner and Distribution Provider to establish and implement a Protection System Maintenance Program for its Protection Systems, Automatic Reclosing and Sudden Pressure Relaying installed to detect Faults on BES Elements.

6.4 Planning Data

The TO also feeds the planners. MOD-032-1 Requirement R2 requires Transmission Owners, along with Balancing Authorities, Generator Owners, Resource Planners and Transmission Service Providers, to provide steady-state, dynamics and short circuit modeling data to their Transmission Planners and Planning Coordinators under the requirements those planners set.

End-of-Chapter Summary

The Transmission Owner is responsible for the condition, ratings, protection and data of the transmission Facilities it owns, chiefly under FAC-008-5, PRC-005-6 and MOD-032-1.

> **From the Field**
>
> If the operator's limits and the owner's ratings disagree, the operator is running on a number nobody can defend.

7 Generator Owner and Generator Operator Responsibilities

7.1 Two Functions, Often Two Organizations

Generator Owner and Generator Operator are separate registered functions with complementary responsibilities. The Glossary defines the Generator Owner as the entity that owns and maintains generating Facilities (Category 1 GO), or owns and maintains non-BES inverter-based resources that have or contribute to an aggregate nameplate capacity of at least 20 MVA, connected through a system designed primarily to deliver that capacity to a common point of connection at 60 kV or higher (Category 2 GO). The Generator Operator is the entity that operates generating Facilities and supplies energy and Interconnected Operations Services (Category 1 GOP), or operates qualifying non-BES inverter-based resources (Category 2 GOP).

In short, the GO is accountable for the asset's condition and capability. The GOP is accountable for running it.

7.2 What the Generator Owner Answers For

The GO carries the asset-side obligations:

- **Ratings.** FAC-008-5 requires the GO to document how it determines its Facility Ratings and to have ratings consistent with that documentation.
- **Protection.** PRC-005-6 requires a Protection System Maintenance Program. PRC-024-4 governs frequency, voltage and volts per hertz protection settings for synchronous generators, Type 1 and Type 2 wind resources and synchronous condensers. PRC-029-2 sets frequency and voltage ride-through requirements for BES inverter-based resources and qualifying Category 2 resources. PRC-029-2 took effect October 1, 2026, following FERC approval, and replaced PRC-029-1.
- **Models and data.** MOD-032-1 requires the GO to provide modeling data to its planners. MOD-026-2, effective April 1, 2026, covers verification and validation of dynamic models and data for the generating Facilities in its applicability section.

Planners and operators can't study the system accurately if the generator's capabilities and limits are wrong. Model accuracy is a GO obligation for that reason.

7.3 What the Generator Operator Answers For

The GOP carries the real-time obligations. It must follow Operating Instructions from its Reliability Coordinator under IRO-001-4, and from its Transmission Operator and Balancing Authority under TOP-001-6. VAR-002-4.1 requires the GOP to operate each generator in automatic voltage control mode, or another mode the TOP instructs, unless exempted; to maintain the voltage or Reactive Power schedule the TOP provides; and to notify the TOP

within 30 minutes of a status change on the automatic voltage regulator, power system stabilizer or alternative voltage controlling device, unless restored within that time.

The GOP's actions at the plant affect system balance and local voltage. It has to understand and carry out instructions quickly during disturbances.

7.4 When the Owner and the Operator Differ

Sometimes one company owns and operates the plant. Often ownership and operation are split by contract, with an asset management firm or remote operations center running the plant for the owner. The obligation follows the registration, not the contract.

The Rules of Procedure give two formal ways to share or shift responsibility. Section 507 allows a Lead Entity to register on behalf of others as a Joint Registration Organization and accept all compliance responsibility for the covered functions. Section 508 allows multiple entities to register under a Coordinated Functional Registration, dividing responsibility for specific standards or requirements under a written agreement that the Regional Entity receives. Absent one of those arrangements, or a written transfer to another registered entity, the registered GO or GOP answers for its function regardless of who did the work.

7.5 Technology Neutrality

The GO and GOP functions apply whether the resource is a synchronous machine, an inverter-based resource or a battery. Technology affects which standards' applicability sections reach a Facility, not whether the function exists. The Category 2 definitions show this. The function stayed the same and the registration threshold changed to capture inverter-based resources that were below the BES definition but large enough to matter. Chapter 11 covers that change.

End-of-Chapter Summary

The Generator Owner answers for the condition, ratings, protection settings, ride-through capability and models of its generating Facilities. The Generator Operator answers for real-time operation, voltage control and compliance with RC, TOP and BA Operating Instructions. When the two are different organizations, the registration and any JRO or CFR agreement decide who is accountable, not the operating contract.

> **From the Field**
>
> The GO/GOP split exists because asset ownership and asset operation can be different organizations. The framework treats each separately because each carries different obligations.
>
> A GO accountable for the asset's capability is not necessarily accountable for its operation. The GOP is. The two have to coordinate, and the coordination has to be documented.
>
> Look first where the two hand off: protection settings, ride-through capability and operating procedures. That's where a split registration gets tested.

8 Planning Coordinator Responsibilities and Long-Term Reliability Assessment

8.1 The Function

The Glossary treats Planning Coordinator and Planning Authority as the same function: "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems." The PC looks ahead to whether the planned system will perform reliably under forecast load and credible contingencies, working with the Transmission Planners in its area.

8.2 The Annual Planning Assessment

TPL-001-5.1 applies to Planning Coordinators and Transmission Planners. Requirement R1 requires each to maintain System models for the studies its Planning Assessment needs, using data consistent with MOD-032. Requirement R2 requires each to prepare an annual Planning Assessment of its portion of the BES, covering steady-state, short circuit and stability analysis across the planning horizon and the contingency categories in the standard's Table 1. Where the assessment shows the system won't meet the performance requirements, the planner develops a Corrective Action Plan.

Planning is not a static exercise. Load growth, generator retirements, new resources and changes in transmission configuration all shift the answer, which is why the assessment repeats every year.

8.3 Data and Models

The PC's results are only as accurate as its models. MOD-032-1 Requirement R1 requires each Planning Coordinator and its Transmission Planners to jointly develop the modeling data requirements and reporting procedures for the planning area, and Requirement R2 requires owners, BAs and other entities to provide the data. Inaccurate or missing models produce unreliable results, and unreliable results lead to poor investment and operating decisions.

8.4 Coordination at the Planning Boundary

PCs coordinate with Transmission Owners, Transmission Operators, Generator Owners and neighboring planning areas to keep assumptions, data and results consistent. Planning decisions on one system affect its neighbors, so coordination at the boundary prevents surprises. Planning results also flow into operations: study results inform the limits and assumptions operators work with day to day.

8.5 Planning Apart From Asset Management

The PC does not manage or maintain specific assets. In my view that separation is deliberate. It lets the planner take a regional view of common reliability needs rather than optimizing one system, and it holds planning accountable for system-level outcomes. Operators manage today. Planners build the system that operators will run years from now.

End-of-Chapter Summary

The Planning Coordinator, working with its Transmission Planners, maintains System models and prepares an annual Planning Assessment under TPL-001-5.1, using the modeling data MOD-032-1 requires owners and operators to provide. Its studies identify the transmission additions, upgrades and operating measures that preserve long-term reliability.

> **From the Field**
>
> Planning is reliability work in the long horizon. Planning Coordinators, Transmission Planners and Resource Planners shape the system that operations runs. A study that misses a future contingency becomes an operations problem.
>
> The planning standards are quantitative. Studies have to show specific cases, specific contingencies and specific outcomes. Vague conclusions don't pass audit.

9 Additional Registered Functions and Shared Reliability Responsibilities

9.1 Distribution Providers

The Glossary defines the Distribution Provider as the entity that "provides and operates the 'wires' between the transmission system and the end-use customer," at any voltage. A distribution utility is registered as a DP only if it meets at least one criterion in Section III of the Registry Criteria, such as:

- a system serving more than 75 MW of peak Load directly connected to the BES;
- ownership, control or operation of Facilities that are part of a required undervoltage load shedding program, a required Remedial Action Scheme or a required transmission Protection System designed to protect the BES;
- services related to Nuclear Plant Interface Requirements under an executed agreement; or
- field switching personnel performing unique tasks in the Transmission Operator's restoration plan.

A DP that meets none of those but owns, controls or operates UFLS Protection Systems needed for a required UFLS program is registered as a UFLS-Only Distribution Provider. Appendix 5B limits the standards that apply to it: PRC-005 and PRC-006 as they apply to UFLS-Only DPs, regional UFLS standards, and any standard that names it in its applicability section.

9.2 Transmission Planners and Resource Planners

The Transmission Planner develops the long-term plan for the reliability of the transmission system within its portion of the Planning Authority area. The Resource Planner develops the long-term plan for the resource adequacy of specific Loads. Both look a year and more ahead. Their work complements the Planning Coordinator's and, with it, gives a full view of system adequacy.

9.3 Transmission Service Providers

The Transmission Service Provider administers the transmission tariff and provides Transmission Service under applicable agreements. It is a registered function with reliability obligations tied to that role, including providing modeling data under MOD-032-1.

9.4 Functions That Have Left the Registry

As Chapter 2 explains, the Load-Serving Entity and Interchange Authority are no longer on the Compliance Registry.

9.5 Shared Responsibility in Practice

Underfrequency load shedding shows how one reliability outcome spans several functions. Under PRC-006-5, the Planning Coordinator develops the UFLS program, including the criteria for identifying islands and the performance the program has to achieve. The "UFLS entities" that own, operate or control the equipment, which may include Transmission Owners, Distribution Providers and UFLS-Only Distribution Providers, must automatically trip load according to the program design and schedule under Requirement R9. The relays themselves fall under the PRC-005-6 maintenance program of whoever owns them.

No one function delivers UFLS on its own. A gap in any one of them leaves the program short.

End-of-Chapter Summary

Beyond the core operating, owning and planning functions, the Registry Criteria register Distribution Providers that meet specific thresholds, UFLS-Only Distribution Providers, Transmission Planners, Resource Planners and Transmission Service Providers. Load-Serving Entities and Interchange Authorities are no longer registered. Programs such as UFLS show that reliability is a collective outcome of several functions doing their part.

> **From the Field**
>
> The TO owns the transmission asset. The DP serves the customer. The standards that govern the boundary between them are where a lot of new obligations land.
>
> A DP's obligations depend on what it owns and what the TOP's plans ask of it. EOP-011-4, for example, reaches Distribution Providers that the TOP's Operating Plans identify for mitigating operating Emergencies.

10 Coordination Among Functions and Interdependent Responsibilities

10.1 No Function Stands Alone

The framework rests on a simple premise: no single function can be relied on to keep the system reliable. Reliability comes from coordination across planning, operations, protection and asset stewardship. Understanding how those responsibilities intersect in practice matters as much as understanding each one alone.

Coordination happens across time horizons. Long-term planning decisions shape operating flexibility years later. The assumptions in a planning study shape real-time decisions. Protection performance shapes how a disturbance spreads and what operators have to do about it.

10.2 The RC as the Focal Point

The Reliability Coordinator is the focal point for operating coordination. It gathers information from BAs, TOPs and neighboring RCs and uses it to manage wide-area risk. It also coordinates planned outages. IRO-017-1 requires each RC to develop, implement and maintain an outage coordination process for generation and transmission outages in its area, and applies to TOPs, BAs, Planning Coordinators and Transmission Planners as well.

10.3 Balancing Authorities and Transmission Operators

BAs and TOPs work together in real time. Actions to balance generation and load affect transmission loading and voltage, and transmission constraints limit which balancing actions are available. TOP-001-6 makes the relationship explicit: each must comply with the other's Operating Instructions, and each must notify its RC and known impacted entities of all planned outages, and unplanned outages of 30 minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels under Requirement R9. The aim is that fixing one problem doesn't create another.

10.4 Owners and Operators

Asset stewardship connects to operations through data. Transmission and Generator Owners supply ratings, outage schedules and protection settings that operators and planners depend on. FAC-008-5 requires owners to provide Facility Ratings to the entities that use them, and MOD-032-1 requires modeling data for the planners. Accurate information keeps the operator's assumptions honest in planning and in real time.

10.5 Planning and Operations

Planning functions provide the parameters operations runs on. Studies of post-contingency and future conditions inform operating limits, Remedial Action Scheme settings and transmission

investment. When planning and operations disagree, the system loses margin that nobody intended to give up.

10.6 Protection as an Intersection

Protection is where many functions meet. Planning studies establish what protection is needed. Owners install, set and maintain it. Operators rely on it to clear faults. A misalignment at any step can degrade fault clearing, dynamic stability and recovery.

10.7 Weaknesses Accumulate

Coordination between functional entities is set out in procedures, data exchange requirements and Operating Instructions. Actual performance depends on how well each function delivers its part, and how predictably they work together. In my view, serious events rarely trace to one failure. They trace to several small weaknesses in different places, and gaps in coordination, situational awareness or communication are usually somewhere in the mix. That is why reliability tasks can't be treated as isolated pieces of work.

End-of-Chapter Summary

Every function has to coordinate with others to achieve its intended effect. Planning, operations, protection and asset stewardship interlock across time horizons and system conditions. The standards build in that coordination through Operating Instructions, outage coordination, data provision and notification requirements, and the reliability outcome depends on how well the handoffs work.

> **From the Field**
>
> Functions overlap operationally. The framework expects coordinated handoffs at every operational boundary.
>
> A program that handles each function well in isolation but coordinates poorly across them will surface its findings at the seams.

11 Evolving Functions and Reliability Responsibilities in a Changing Grid

11.1 Durable Functions, Changing Resources

The functional approach was built to last through technological and operational change. As inverter-based resources, energy storage and hybrid plants grow as a share of the resource mix, the Generator Owner, Generator Operator, Transmission Operator and Balancing Authority functions still apply. What a resource is connected to, and who controls it, determine the function. The technology does not.

The tasks change even when the functions don't. Reduced system inertia, different fault behavior and fast inverter controls affect how operators balance, schedule and protect the system, and how closely functions have to coordinate.

11.2 Category 2 Inverter-Based Resources

The clearest recent example is NERC's inverter-based resource registration initiative. The Glossary and Appendix 5B now define Category 2 Generator Owners and Generator Operators: owners and operators of non-BES inverter-based resources with an aggregate nameplate capacity of at least 20 MVA, connected through a system designed primarily to deliver that capacity to a common point of connection at 60 kV or higher. Those entities came onto the Compliance Registry with an effective registration date of May 15, 2026.

The function did not change. The threshold did, because resources below the BES definition had grown large enough to matter.

11.3 Third-Party Operators and Shared Control Centers

Operations are changing as well. More plants are run by third parties, from central remote operations centers, under shared-service arrangements. The framework handles this because it focuses on functional responsibility rather than ownership, but it needs clear answers to two questions: who is registered for the function, and is any responsibility formally transferred?

The Rules of Procedure are direct. Under Section 501, a registered entity is responsible for compliance with all standards applicable to its registered functions from the time it receives its registration notice. Appendix 5B also excludes an entity from registration where responsibility has been transferred by written agreement to another entity registered for the appropriate function, including through a JRO or CFR. A service contract with an unregistered operator transfers work. It does not transfer accountability.

11.4 The Bulk-Distribution Boundary

As more generation connects at lower voltages, the boundary between the bulk system and distribution gets more attention. The BES definition starts from Transmission Elements and resources at 100 kV or higher, with listed inclusions and exclusions, and excludes facilities used in the local distribution of electric energy. In my experience, registration decisions near that boundary turn on materiality and on the function being performed, not on a simple test of which side of a transformer an asset sits. Appendix 5C provides a procedure for requesting an exception to the BES definition for a specific Element.

11.5 Computational Loads

Large computational loads are the next test. FERC directed NERC on July 16, 2026, to develop and file Reliability Standards and Rules of Procedure revisions addressing the integration of computational loads (196 FERC ¶ 61,031, Docket No. RD26-7-000). On October 8, 2026, the NERC Board approved Rules of Procedure revisions establishing registry criteria for Computational Load Owners and Computational Load Operators, to be filed with FERC by December 31, 2026. Until FERC acts, those functions are proposed, not registered.

11.6 New Risks, Existing Obligations

Disturbance analysis keeps shaping how functional responsibilities are interpreted and coordinated. When a new failure mode appears, NERC and the industry assess whether existing standards address it or whether guidance or new standards are needed. A new technology does not by itself create a new compliance obligation. The obligation arrives when an approved standard, or a registration change, says it does. The prudent entity prepares before that date rather than after.

End-of-Chapter Summary

The functional definitions are designed to survive changes in technology, business models and system configuration. Recent changes, Category 2 IBR registration effective May 15, 2026, and the proposed computational load registry criteria, show the framework adjusting thresholds and proposing new functions while keeping the functional logic. Third-party operation is accommodated, but accountability stays with the registered entity unless formally transferred.

> **From the Field**
>
> "We don't operate, we just own." Owning the asset can carry GO obligations even when someone else runs it. Register accordingly.
>
> "We're small, the function doesn't really apply." Registration follows the function and the Registry Criteria thresholds, not how big the organization feels.
>
> "The contractor handles that." Unless the contractor is registered for the function and the responsibility is transferred in writing, the registered entity still answers for it. Outsourcing the work doesn't outsource the responsibility.

12 Functional Responsibility as the Foundation of Bulk Electric System Reliability

12.1 Each Function Covers a Dimension of Risk

Assigning reliability responsibility by function is one of the framework's core design choices. It identifies the risk, who manages it, and who must coordinate with whom. Each function addresses a different part of the problem:

- The Reliability Coordinator covers wide-area risk that local visibility misses.
- The Balancing Authority covers real-time balance and frequency.
- The Transmission Operator covers transmission topology and operating limits.
- The Transmission Owner and Generator Owner provide and maintain the physical infrastructure, with its ratings, protection and models.
- The Generator Operator runs the resources in real time.
- The Planning Coordinator and Transmission Planner cover future system adequacy and performance.
- Supporting functions cover specific interfaces such as distribution-level protection and tariff administration.

12.2 Interaction Over Isolation

The framework's success depends less on any single function than on how the functions interact. When planning, operations, protection and maintenance line up, the system runs within the margins its design intended. When they don't, risk grows in ways that may not be visible locally.

12.3 Accountability That Follows the Facts

The functional approach also clarifies accountability. It ties responsibility to what an entity actually does in its operating context, which can change. That is why the Rules of Procedure put the burden on the registered entity to keep its registration current. Section 501 requires each registered entity to notify its Regional Entity of corrections, revisions, deletions, changes in ownership, corporate structure or similar matters that affect its responsibilities, and states that failure to notify does not relieve it of any responsibility to comply or shield it from penalties.

12.4 Room to Improve

The functional model also leaves room for improvement. When conditions change and new risks appear, the framework can sharpen the expectations between parties, improve coordination,

add registration categories or develop new standards, all without abandoning the functional logic. The Category 2 IBR registration and the computational load proposals are recent proof.

12.5 Necessary, Not Sufficient

The framework is a necessary condition for reliability, not a sufficient one. Reliability comes from implementation: each function performed competently and professionally, and coordinated with the rest. Knowing the registered functions and their responsibilities shows how the Bulk Electric System is controlled, coordinated and protected. It shows that the BES is governed by a system of accountability, not a collection of independent rules.

End-of-Chapter Summary

NERC assigns reliability responsibility by function, which creates an integrated scheme of accountability across planning, operations, real-time control and asset maintenance. The interaction among functions, more than any one function, determines reliability. The registered entity carries the duty to keep its registration aligned with what it actually does.

Glossary

Term	Meaning in this paper
Balancing Authority (BA)	As defined in the NERC Glossary of Terms: the responsible entity that integrates resource plans ahead of time, maintains Demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time.
Bulk Electric System (BES)	As defined in the NERC Glossary of Terms: unless modified by the definition's listed inclusions and exclusions, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. It does not include facilities used in the local distribution of electric energy.
Category 2 Generator Owner / Generator Operator	An entity that owns and maintains, or operates, non-BES inverter-based resources that have or contribute to an aggregate nameplate capacity of at least 20 MVA, connected through a system designed primarily to deliver that capacity to a common point of connection at 60 kV or higher.
Coordinated Functional Registration (CFR)	A registration under Section 508 of the NERC Rules of Procedure in which multiple entities register for a function and divide compliance responsibility for specific standards or requirements under a written agreement.
Distribution Provider (DP)	As defined in the NERC Glossary of Terms: provides and operates the "wires" between the transmission system and the end-use customer, at any voltage. Registered only if it meets the criteria in Section III of Appendix 5B.
Functional Registration	Registration of an entity on the NERC Compliance Registry according to the reliability functions it performs, rather than asset ownership or technology.
Generator Operator (GOP)	As defined in the NERC Glossary of Terms: the entity that operates generating Facilities and performs the functions of supplying energy and Interconnected Operations Services (Category 1), or operates qualifying non-BES inverter-based resources (Category 2).
Generator Owner (GO)	As defined in the NERC Glossary of Terms: the entity that owns and maintains generating Facilities (Category 1), or owns and maintains qualifying non-BES inverter-based resources (Category 2).
Joint Registration Organization (JRO)	A registration under Section 507 of the NERC Rules of Procedure in which a Lead Entity registers on behalf of other parties and accepts all compliance responsibility for the covered functions.
NERC	The North American Electric Reliability Corporation, the Electric Reliability Organization certified by FERC, which develops and enforces Reliability Standards for the North American bulk power system.

Term	Meaning in this paper
Operating Instruction	As defined in the NERC Glossary of Terms: a command by operating personnel responsible for the Real-time operation of the interconnected BES to change or preserve the state, status, output or input of a BES Element or Facility. A discussion of options is not an Operating Instruction.
Planning Coordinator (PC)	Equivalent to Planning Authority in the NERC Glossary of Terms: the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans and Protection Systems.
Reliability Coordinator (RC)	As defined in the NERC Glossary of Terms: the entity that is the highest level of authority responsible for the Reliable Operation of the BES, has the Wide Area view, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in next-day analysis and real-time operations.
Statement of Compliance Registry Criteria	Appendix 5B to the NERC Rules of Procedure, which lists the function types an entity can be registered for and the criteria for registration.
Transmission Operator (TOP)	As defined in the NERC Glossary of Terms: the entity responsible for the reliability of its local transmission system, and that operates or directs the operations of the transmission Facilities.
Transmission Owner (TO)	As defined in the NERC Glossary of Terms: the entity that owns and maintains transmission Facilities.
UFLS-Only Distribution Provider	A Distribution Provider that meets none of the other DP registration criteria but owns, controls or operates UFLS Protection Systems needed to implement a required UFLS program designed to protect the BES.

This glossary is provided for general information and education. It does not change or supersede any definition in the NERC Glossary of Terms or the NERC Rules of Procedure.

How Energy Compliance Can Help

Registration is where a compliance program starts, and often where it first goes wrong.

Registration, applicability and program foundations

EC provides registration and applicability analysis: which functions you perform, which you are registered for, and which standards' applicability sections reach your Facilities. We review JRO, CFR and GO/GOP arrangements so the paper matches the operation. Compliance program design and improvement, reliability governance and program assessments, regulator-perspective program reviews, and NERC compliance program support, interpretation and audit preparation follow from that foundation.

Audits, enforcement and mitigation

When a registration or applicability question becomes a finding, EC provides audit and enforcement support (non-advocacy), audit defense with Notice of Penalty response and settlement posture, mitigation planning and Self-Report development, RSAW production, and data request strategy.

Advisory, alignment and engagement

EC also provides NERC reliability and compliance advisory support, senior advisory with direct engagement on complex reliability questions, operational and engineering reliability alignment, training and executive briefings on reliability frameworks, and industry engagement in standards development and working-group participation. Each engagement is scoped to the entity's role, function and bulk system impact, and every engagement is overseen by a senior practitioner.

WattOps Compliance

Every function's obligations end in evidence. WattOps Compliance is EC's NERC compliance evidence platform (wattopscompliance.com). EC will run one standard at one facility through WattOps at no cost (CIP standards excluded).

RenewOps

For renewable and storage operators, including new Category 2 registrants, operations data carries the compliance position. RenewOps is EC's renewable operations monitoring and analytics platform, with a Data Center module.

If you aren't certain your registration matches what you actually do, that's the call to make.

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About the Author

Rob Smith is the Founder and Principal of Energy Compliance, Inc., with more than thirty years in the industry on every side of the system. He began in control-room operations as a Reliability Coordinator, Transmission Operator, and Power System Operator across RTO/ISO and utility control centers. On the regulator side, he was a senior compliance auditor and subject matter expert for NERC Reliability Standards. He audited grid facilities, evaluated mitigation adequacy, participated in risk-based oversight of utility mitigation activities, and supported the development of violation notifications and settlements in FERC-directed enforcement actions. He conducted a regulatory audit in the Sultanate of Oman against the Sultanate's Sector Law and Grid Code.

He founded Energy Compliance, Inc. to deliver senior regulator-side compliance authority without the layered staffing and billable-hour overhead of larger firms.

Education:

- MBA, Energy Management, University of Mary
- MSL, Compliance Law, Fordham Law University
- BAS, Energy Management, Bismarck State College
- BAS, Mechanical Engineering, Metallurgy minor, University of Florida
- BAS, Criminology, St. Petersburg College (State Law Enforcement Certification)
- AAS, Power Plant Technology, Bismarck State College
- AAS, Electrical Transmission System Technology, Bismarck State College

Certifications: NERC Lead Auditor training; previously NERC-certified at the Reliability Coordinator level; 1st Class A Boiler Engineer License, Minnesota.

About Energy Compliance, Inc.

Energy Compliance, Inc. is an independent consulting and advisory firm based in Bloomington, Minnesota, focused exclusively on electric reliability, cybersecurity reliability, and regulatory compliance for organizations connected to the North American Bulk Electric System.

We support registered entities, including Generator Owners and Operators, Transmission Owners and Operators, Reliability Coordinators, Balancing Authorities, and Distribution Providers. Our work spans NERC Reliability Standards, FERC orders, RTO/ISO market participation rules, Regional Entity oversight, and state regulatory frameworks.

We do this work differently than larger consulting firms. A senior practitioner with regulator-side experience oversees every engagement. We staff for outcomes, not billable hours. Our deliverables are written to be operationally executable and audit-defensible, structured for the auditor's question rather than the consultant's binder. Where automation can replace manual work, we build the automation. Where senior judgment is required, the senior is in the room.

Energy Compliance is not affiliated with, sponsored by, or endorsed by the North American Electric Reliability Corporation, the Federal Energy Regulatory Commission, or any Regional Entity.

Learn more at energycomplianceinc.com.

Sources and Authorities

- Federal Power Act Section 215, Electric Reliability, 16 U.S.C. § 824o. https://www.law.cornell.edu/uscode/text/16/824o
- FERC, News Release, FERC Approves NERC Risk-Based Registry Initiative, Docket No. RR15-4-000 (Mar. 19, 2015). https://ferc.gov/news-events/news/ferc-approves-nerc-risk-based-registry-initiative
- FERC, Order Directing the North American Electric Reliability Corporation to File Reliability Standard(s) Pertaining to Computational Load Integration, 196 FERC ¶ 61,031, Docket No. RD26-7-000 (July 16, 2026). https://www.ferc.gov/sites/default/files/2026-07/RD26-7-000.pdf
- NERC, Rules of Procedure (effective Nov. 28, 2023). https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/nerc-rop.pdf
- NERC, Statement of Compliance Registry Criteria, Revision 8, Appendix 5B to the Rules of Procedure (effective June 27, 2024). https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/appendix-5b.pdf
- NERC, Organization Registration and Organization Certification Manual, Appendix 5A to the Rules of Procedure (effective June 27, 2024). https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/appendix-5a.pdf
- NERC, Bulk Electric System Exception Procedure, Appendix 5C to the Rules of Procedure. https://www.nerc.com/globalassets/who-we-are/rules-of-procedure/appendix-5c.pdf
- NERC, Glossary of Terms Used in NERC Reliability Standards. https://www.nerc.com/glossary-of-terms
- NERC, Reliability Functional Model: Function Definitions and Functional Entities, Version 5.1. https://www.nerc.com/pa/Stand/Functional%20Model%20Advisory%20Group%20DL/Functional_Model_V5.1_clean_10082019.pdf
- NERC, IRO-001-4, Reliability Coordination: Responsibilities. https://www.nerc.com/globalassets/standards/reliability-standards/iro/iro-001-4.pdf
- NERC, IRO-002-7, Reliability Coordination: Monitoring and Analysis. https://www.nerc.com/globalassets/standards/reliability-standards/iro/iro-002-7.pdf
- NERC, IRO-008-3, Reliability Coordinator Operational Analyses and Real-time Assessments. https://www.nerc.com/globalassets/standards/reliability-standards/iro/iro-008-3.pdf
- NERC, IRO-014-3, Coordination Among Reliability Coordinators. https://www.nerc.com/globalassets/standards/reliability-standards/iro/iro-014-3.pdf
- NERC, IRO-017-1, Outage Coordination. https://www.nerc.com/globalassets/standards/reliability-standards/iro/iro-017-1.pdf

- NERC, TOP-001-6, Transmission Operations. https://www.nerc.com/globalassets/standards/reliability-standards/top/top-001-6.pdf
- NERC, BAL-001-2, Real Power Balancing Control Performance. https://www.nerc.com/globalassets/standards/reliability-standards/bal/bal-001-2.pdf
- NERC, BAL-002-3, Disturbance Control Standard: Contingency Reserve for Recovery from a Balancing Contingency Event. https://www.nerc.com/globalassets/standards/reliability-standards/bal/bal-002-3.pdf
- NERC, BAL-003-2, Frequency Response and Frequency Bias Setting. https://www.nerc.com/globalassets/standards/reliability-standards/bal/bal-003-2.pdf
- NERC, EOP-005-3, System Restoration from Blackstart Resources. https://www.nerc.com/globalassets/standards/reliability-standards/eop/eop-005-3.pdf
- NERC, EOP-011-4, Emergency Operations. https://www.nerc.com/globalassets/standards/reliability-standards/eop/eop-011-4.pdf
- NERC, PER-005-2, Operations Personnel Training. https://www.nerc.com/pa/Stand/Reliability%20Standards/PER-005-2.pdf
- NERC, FAC-008-5, Facility Ratings. https://www.nerc.com/globalassets/standards/reliability-standards/fac/fac-008-5.pdf
- NERC, PRC-005-6, Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance. https://www.nerc.com/pa/Stand/Reliability%20Standards/PRC-005-6.pdf
- NERC, PRC-006-5, Automatic Underfrequency Load Shedding. https://www.nerc.com/pa/Stand/Reliability%20Standards/PRC-006-5.pdf
- NERC, PRC-024-4, Frequency and Voltage Protection Settings. https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-024-4.pdf
- NERC, PRC-029-2, Frequency and Voltage Ride-through Requirements for Inverter-Based Resources. https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-029-2.pdf
- NERC, MOD-026-2, Verification and Validation of Dynamic Models and Data. https://www.nerc.com/globalassets/standards/reliability-standards/mod/mod-026-2.pdf
- NERC, MOD-032-1, Data for Power System Modeling and Analysis. https://www.nerc.com/globalassets/standards/reliability-standards/mod/mod-032-1.pdf
- NERC, TPL-001-5.1, Transmission System Planning Performance Requirements. https://www.nerc.com/globalassets/standards/reliability-standards/tpl/tpl-001-5.1.pdf
- NERC, VAR-002-4.1, Generator Operation for Maintaining Network Voltage Schedules. https://www.nerc.com/pa/Stand/Reliability%20Standards/VAR-002-4.1.pdf
- NERC, Large Loads Action Plan, Q3 2026 Quarterly Update. https://www.nerc.com/globalassets/initiatives/large-loads-action-plan/llap-quarterly-update-q3-2026.pdf
- WECC, IBR Registration Initiative Category 2 FAQ (2026). https://www.wecc.org/sites/default/files/documents/program/2026/faq-ibr-registration-initiative-category-2-go-and-gop-registration-process.pdf

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