ENERGY COMPLIANCE, INC. | *Field Reference for Organized Markets*

MARKETS · RTO/ISO SERIES · EC-WP-400

RTOs & ISOs Explained

What RTOs and ISOs do, what authority they have, and what they cannot force.

RTOs and ISOs run the operating layer of organized wholesale markets. They don't own the grid, don't set policy, and can't force resource decisions, but they get blamed for all three. This reference explains where their authority comes from, where it ends, and what that means for every market participant and registered entity working under an RTO tariff.

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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, honest about what the standards do and do not require.

Energy Compliance exists because most 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

RTOs and ISOs run the operating layer of organized wholesale markets. They don't own the grid, don't set policy, and can't force resource decisions, yet they get blamed for all three. Knowing what they actually do, and where their authority ends, is the practical question for every market participant. Conflate the RTO with the regulator and you'll misread half of what they ask you to do.

- **An RTO is an operator. A regulator delegates to it.** An RTO can't expand its own authority. That authority comes from the Federal Power Act, the FERC-accepted tariff, and the agreements with the transmission owners whose facilities it directs.
- **Independence is the structural premise.** FERC's rules require an RTO to be independent of every market participant. An RTO that drifts from that loses the legitimacy that justifies its authority.
- **The market monitor is not RTO management.** Under FERC's rules the monitor reports to the board with management removed, evaluates the RTO's own market rules, and refers suspected market violations to FERC. Confusing the monitor with the operator is a category error with consequences.
- **Jurisdiction shapes what an RTO can do.** FERC regulates interstate transmission and wholesale sales. States keep generation, retail rates, and siting. ERCOT is the exception, with its market overseen by the Public Utility Commission of Texas. The federal-state interface is where the hardest policy questions surface.
- **RTO operations integrate market and reliability decisions in real time.** The integration is what makes the model work.
- **RTOs are themselves registered entities.** A penalty against an RTO doesn't stay inside the RTO. FERC will consider, case by case, an RTO's request to assign the cost to an entity identified as responsible in the enforcement process, or to spread it across its members and customers (FERC guidance, 2008).

> **From the Field**
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> The RTO/ISO model emerged because vertically integrated utilities couldn't deliver competitive markets and nondiscriminatory transmission at the same time. The split is structural, not cosmetic.

1 Origins and Evolution of RTOs and ISOs

This reference places RTOs and ISOs in a neutral reliability and regulatory context: what they do to keep the grid reliable while administering organized wholesale markets.

1.1 From Vertically Integrated Utilities to Independent Operation

The creation of Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) was a structural response to fundamental changes in the North American electric industry. The model didn't come from one policy decision. It evolved under pressure: reliability in a changing environment, a period of market reform, and the limits of a utility-by-utility system operating inside a highly interconnected grid.

Historically, vertically integrated utilities ran the bulk power system within their own service areas. They owned the generation, the transmission and, in many cases, the distribution. Coordination across utility boundaries happened through power pools, bilateral agreements, and regional reliability councils. Over time that structure proved inadequate for the demands placed on it: large system expansion, more long-distance transmission, and competitive wholesale trading of power across utility systems.

1.2 Open Access and the First ISOs

Open access transmission policy was the next major development. In Order No. 888, issued April 24, 1996, FERC found that transmission-owning utilities had discriminated against others seeking transmission access. It required every public utility that owns, controls or operates interstate transmission to file an open access, nondiscriminatory transmission tariff and to functionally unbundle its wholesale power services.

Independent system operation grew out of the same goal. Operate the transmission system without bias, and keep it reliable in a multi-utility environment. Order No. 888 set out principles for evaluating ISO proposals, and ISOs took over operation of the transmission system. They did not buy the assets. They operated the system on a functional basis while title stayed with the owners.

1.3 RTOs Broaden the Scope

RTOs were the next step. An ISO focused on independent operation of the transmission system. An RTO broadens the scope of coordination to transmission planning, congestion management, and the operation of an organized wholesale market. That reflects a recognition that reliability risks and market inefficiencies are regional, and larger than any single utility's footprint.

FERC codified that step in Order No. 2000, issued December 20, 1999. The rule required each public utility that owns, operates or controls interstate transmission to make filings about forming and participating in an RTO. Participation itself was voluntary. The rule also set the minimum characteristics and functions an entity must meet to be an RTO, now in 18 CFR 35.34. Chapter 5 walks through them.

1.4 Reliability Was Always Part of the Case

Reliability was a major factor from the start. With systems tied together, a utility-by-utility approach to control and operation stopped working during large disturbances. The grid needed better coordination of operations, joint management of shared constraints, wide-area monitoring, and alignment with Interconnection-level reliability conditions. Those were strong arguments for independent system operators, with operation and control kept close to the real-time grid.

1.5 Different Regions, Different Answers

The resulting institutions differ significantly from one region to another. Regulatory history differs, the original visions of restructuring embedded different design choices, and stakeholders wanted different things. Some regions kept an ISO with a relatively limited role in one market. Others built an RTO with much broader responsibility over markets and long-term planning. Whatever the specifics, they all rest on one element: an independent regional level of governance over transmission operations that are economically and technically interwoven across a large geographic area.

That history exposes a core tension in power system governance. Centralized authority is needed to enforce coordination and performance. It also has to be bounded so it does not invade property rights or overstep state authority and federal jurisdiction. You can't understand how RTO and ISO mandates are defined, discharged and bounded today without that history.

End-of-Chapter Summary

RTOs and ISOs grew out of the structural challenges of interconnection, market restructuring, and the limits of traditional utility-based operation. Their design balances independent regional control against defined zones of exclusivity and regulatory authority. That legacy still shapes how they operate and how they carry their reliability responsibilities.

2 Governance Models and Institutional Structure

Governance defines the boundaries of RTO authority. Independence, stakeholder input and regulatory oversight are the three parts that matter.

2.1 Independence Is Not an Incidental Detail

RTOs and ISOs are specialized institutions. They are supposed to be independent of market influence while staying answerable to regulators, to their customers, and to the reliability limits of the system. That is a hard balance to hold in an environment where market competition is intense and every participant still depends on reliable supply.

Each RTO and ISO is governed by a board of directors, and independence from market participants is the point of the structure. FERC's rules make it a requirement. An RTO must be independent of any market participant. The RTO, its employees and its non-stakeholder directors must not have financial interests in any market participant. Its decision-making process must be independent of control by any market participant or class of participants. And it must have exclusive and independent authority to propose the rates, terms and conditions of transmission service over the facilities it operates.

There are two reasons for this. The first is to avoid even the perception of a conflict of interest. The second is to make sure the RTO runs the transmission system and the markets for reliable, nondiscriminatory service and nothing else.

2.2 Stakeholders Advise; Boards Decide

Below the board, RTOs rely heavily on stakeholder processes. Committees, working groups and advisory bodies let transmission and generation owners, load-serving entities, marketers and others shape policy and market rule proposals. Those forums don't hold delegated authority. They influence the proposals that go to the board for decision, and the board's decisions that change the tariff then go to FERC. In my view the stakeholder process earns its keep on operational and technical changes: rules that have been through it are more likely to be technically sound and workable in a control room.

2.3 Federal Oversight and State Interests

FERC has a formal role in the governance framework. Every FERC-jurisdictional RTO and ISO operates under a tariff the Commission has accepted, and changes to market rules, tariff terms and many planning practices must be filed with and accepted by FERC. That is an external layer of regulation that limits management discretion and gives members leverage in governance disputes. ERCOT is the exception: its market is overseen by the Public Utility Commission of Texas and the Texas Legislature, not FERC.

State interests also have to be designed in. FERC regulates wholesale markets and interstate transmission, but states keep jurisdiction over generation resource decisions, retail rates, and transmission siting approvals. Good governance design recognizes the state commissions' role and gives them a workable channel for the interstate problems federal regulation can't fully resolve.

2.4 Boards Set Direction; Staff Execute

The institutional structure also separates direction from execution. Boards set strategic direction and the market and policy framework. Professional staff run real-time operations, market administration, planning, analysis and monitoring. That separation is an accountability function in its own right: the people who decide the rules are not the people who apply them in the control room.

2.5 No Two Governance Models Are the Same

Governance is not a fixed or uniform concept. Stakeholder voting rights, board and committee composition, and the formality of advisory processes all differ between RTOs and ISOs. Those differences come from regional history and regulation, not from different reliability goals. However the principles are implemented, independence, transparency and accountability stay constant. Governance is how you understand what an RTO does and where it stops.

End-of-Chapter Summary

Board independence, stakeholder advice and regulatory oversight define the parameters of RTO authority and control. Each RTO and ISO has a governance structure designed to keep it independent of market participants and accountable to its stakeholders and regulators. That structure shapes market-wide decisions, how participants see the RTO, and how it carries its reliability role.

3 Delegated Authority and Regulatory Foundations

RTO authority is neither inherent nor absolute. It is delegated through statute, regulation, tariff and contract, and it stops where the delegation stops.

3.1 The Statutory Base

To know what an RTO can do, you have to know what was delegated to it and under what limits. At the federal level the base is the Federal Power Act (FPA). Section 201 gives FERC jurisdiction over the transmission of electric energy in interstate commerce and the sale of electric energy at wholesale in interstate commerce. It withholds jurisdiction, except where the Act provides otherwise, over generation facilities, local distribution, and purely intrastate transmission. Section 205 requires every rate, charge and rule affecting rates for that jurisdictional service to be just and reasonable, not unduly discriminatory, and filed with the Commission. Section 206 lets FERC, on complaint or on its own motion, replace a rate or rule it finds unjust and unreasonable.

When FERC accepts an RTO or ISO tariff, it legitimizes the RTO's role in administering the wholesale market and transmission service. Acceptance does not hand regulatory authority to the RTO. It gives the RTO a bounded implementation role, and the Commission keeps the authority to review, accept, reject or change what the RTO does.

3.2 Tariffs Set the Terms

The tariff is where the terms of delegated authority are written down. It sets out the market rules, the transmission service conditions, the planning responsibilities, and the rights and obligations of market participants and transmission customers in the region. Once FERC accepts it, the tariff binds every market participant and transmission customer in the region. The RTO must apply it without undue discrimination. It cannot change the tariff on its own; changes go through a Section 205 filing, and FERC can impose its own under Section 206.

3.3 Contracts with Transmission Owners

Delegated authority also rests on contracts with the transmission owners. In most RTO footprints, the owner keeps title to its assets while a transmission control or operating agreement gives the RTO operational control of those facilities for reliability and market purposes. That agreement defines the level of control and allows centralized management of how the facilities are used.

That delegation of control does not relieve the asset owner of its own duties under the Reliability Standards and the statutes. A Transmission Owner, in NERC's terms, is the entity that owns and maintains transmission Facilities, and its obligations follow that registration.

3.4 The Reliability Connection

The reliability side runs on a separate statutory track. FPA Section 215 gives FERC jurisdiction over the Electric Reliability Organization (NERC), the Regional Entities, and all users, owners and operators of the bulk-power system, and it requires all of them to comply with the Reliability Standards that take effect under the section. RTOs and ISOs are registered with NERC for the functions they perform. FERC's 2008 guidance on RTO reliability penalties noted that each RTO and ISO is a transmission service provider registered for that function and for other functions as appropriate. NYISO, for example, was registered at the time as a Reliability Coordinator, Transmission Planner, Resource Planner, Planning Authority, Balancing Authority and Transmission Operator.

Under those registrations, RTOs and ISOs must comply with every applicable NERC Reliability Standard, including any regional Reliability Standards. That reliability authority is different from market authority. It rests on compliance with approved standards, not on the tariff.

3.5 Where the Delegation Stops

Delegated authority comes with specific jurisdictional limits. An RTO or ISO has no delegated authority over generation siting, state resource adequacy decisions, or retail rate design. Its influence there comes through market design and planning, not through any regulatory power. Those limits sit at the center of today's debates over what RTOs should be doing.

The two kinds of authority also collide. Market outcomes can create conditions that need reliability action, and reliability requirements can cut into market efficiency. RTOs sit squarely in the middle, enforcing tariff-based market rules while carrying out mandatory Reliability Standards in real time.

Start every analysis from the delegation and its scope. RTOs and ISOs are instruments of coordination, not regulators in their own right. Their authority reaches only as far as it has been delegated and accepted by FERC, it is backed by monitoring and enforcement mechanisms, and it stays subject to Commission review.

> **End-of-Chapter Summary**
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> RTOs and ISOs exercise authority delegated to them by federal statute, by FERC-accepted tariffs, and by their contracts with the transmission owners whose systems they direct. That authority runs market operation and reliability coordination. It is limited by regulatory requirements, by the Reliability Standards, and by the geography of the high-voltage network.

4 Jurisdictional Boundaries and Federal-State Interfaces

RTOs and ISOs operate where federal and state authority overlap. Jurisdiction is not just a legal concept; it decides how reliability, markets and public policy interact.

4.1 What FERC Regulates

FERC's jurisdiction covers wholesale sales of electricity and transmission in interstate commerce. Through those powers the Commission reviews and enforces the rules of organized wholesale markets, the transmission rates charged for use of the grid, and transmission planning and cost allocation policy. RTOs and ISOs are not arms of the Commission. They are FERC-jurisdictional utilities that carry out, day to day, the market rules and grid operations set out in the tariffs and agreements FERC has accepted.

FERC's own guide lists six FERC-regulated RTOs and ISOs in the United States. ERCOT sits outside that list. FERC's guide explains that ERCOT is not subject to FERC jurisdiction because its grid is not connected to those of other states.

Organization	Who regulates the market
PJM Interconnection	FERC
Midcontinent ISO (MISO)	FERC
California ISO (CAISO)	FERC
Southwest Power Pool (SPP)	FERC
New York ISO (NYISO)	FERC
ISO New England (ISO-NE)	FERC
Electric Reliability Council of Texas (ERCOT)	Public Utility Commission of Texas and the Texas Legislature

ERCOT is still a registered entity for reliability. FPA Section 215 reaches all users, owners and operators of the bulk-power system, and NERC's assessments treat Texas RE-ERCOT as its own assessment area.

4.2 What the States Keep

States keep generation resource decisions, retail rate design, and much of transmission siting and permitting. Those decisions drive system conditions and market participation, and they sit

outside RTO control. An organized market spanning several states has to work with each state's different objectives.

The FPA's reliability section draws the same line. Section 215 does not authorize NERC or FERC to order construction of new generation or transmission capacity, and it does not preempt a state's authority to act for the safety, adequacy and reliability of electric service within its borders, as long as the action is consistent with the Reliability Standards.

4.3 The Boundary Nobody Can Resolve Alone

Federal and state authority set boundaries on RTO governance that the RTO cannot resolve on its own. Federal market design interacts with state policy, and the results show up in price, participation and operating performance. Transmission planning shows the problem clearly. RTOs and ISOs run the regional planning studies and propose cost allocation methods under federal planning requirements. FERC's Order No. 1000 (July 2011) set the requirements for regional transmission planning and cost allocation. Order No. 1920 (May 2024, with Orders No. 1920-A in November 2024 and No. 1920-B in April 2025) added long-term regional transmission plans looking at least 20 years out and a defined role for state entities in cost allocation. Planning regions are filing compliance through 2027.

The decision to build, though, usually lands in a state siting and permitting proceeding. That mismatch means a high-voltage regional need identified in the planning studies can be reshaped or stalled by state procedure outside the RTO's control.

4.4 Reliability Doesn't Follow the Jurisdictional Line

Reliability accountability works differently. The Reliability Standards apply across the bulk electric system regardless of market structure, and the obligations are the same for every registered entity with the functional responsibility. RTOs and ISOs carry the compliance obligations for the functions they are registered for. Asset owners and operators carry theirs.

So three things run side by side: federally supervised markets, state policy, and reliability regulated through approved standards. RTOs and ISOs act as the technical forum where much of that coordination happens, supplying data and analysis to regulators and market monitors under agreed rules. They cannot impose a solution when their members and regulators don't agree.

4.5 The Boundaries Move

Jurisdictional boundaries aren't fixed. Policy shifts, new kinds of market participation, and changes in the resource mix all strain the federal-state relationship. Knowing those boundaries tells you how far FERC can reach into market activity and how far the RTO is constrained in managing its markets.

> **End-of-Chapter Summary**
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> RTOs and ISOs work within a layered jurisdictional model: federal regulation of wholesale markets and interstate transmission, state regulation of resources, retail service and siting, and reliability regulation through approved standards. ERCOT's market sits with the PUCT rather than FERC.

5 Functional Responsibilities in Operations, Markets, and Planning

The functions assigned to an RTO show how its delegated authority is actually exercised. Real-time operations, market administration and regional planning run under different rules.

5.1 The Federal Baseline

FERC's rule sets the minimum. An RTO must have operational authority for all transmission facilities under its control and exclusive authority for maintaining the short-term reliability of the grid it operates. It must also perform eight functions: tariff administration and design, congestion management, parallel path flow, ancillary services, OASIS and the calculation of Total and Available Transmission Capability, market monitoring, planning and expansion, and interregional coordination. Everything else in this chapter hangs off that list.

5.2 Real-Time Operations

In real time, RTOs and ISOs keep the regional bulk electric system reliable and secure under their registered functions, typically Reliability Coordinator, Balancing Authority and Transmission Operator. Real-time work includes monitoring system state, managing transmission constraints, and preserving and restoring stability after disturbances. That work is governed by mandatory Reliability Standards. When reliability conditions require independent operating action, market circumstances don't change the obligation. Real-time operational authority means reliability actions take precedence when the high-voltage system needs them.

5.3 Market Administration

Wholesale market administration is a separate but related function. Under FERC-accepted tariffs, RTOs and ISOs administer energy and ancillary service markets and, in some regions, capacity markets. Market processes produce prices meant to reflect system conditions and resource availability, and those prices send signals to participants. The market is an economic mechanism for securing the resources reliability needs, and it runs on rules that are fundamentally different from real-time operating practice.

Getting the balance right takes a clear functional separation. Market outcomes should inform operating decisions, and operating constraints should shape the conditions for market clearing. Neither function should become subordinate to the other. An RTO that manages both well keeps efficiency from undermining reliability, and keeps reliability measures from turning into unnecessary market distortions.

5.4 Regional Planning

Transmission planning is the third core function. An RTO looks across the region to identify needs, causes of congestion and, in some cases, public policy requirements. Planning studies look years ahead for future needs and possible solutions. Planning authority is analysis and coordination, not building and executing projects, which keeps a clear line between determining regional need and carrying out a local project.

5.5 Data, Confidentiality and Shared Responsibility

RTOs and ISOs work second by second with large volumes of operational and market data to keep situational awareness, assess conditions, and apply market rules. Transparency is a hallmark of organized markets, but confidentiality rules and market monitoring limit how data is used, to protect competitive information and infrastructure security.

Functional responsibility is not exclusive control. Asset owners, operators and market participants keep real responsibility in each of these areas. The RTO coordinates and administers the grid in real time. Participants are responsible for following dispatch, the market rules, and the reliability requirements that apply to them. That shared framework reflects the RTO's role as coordinator, not owner or regulator. How well it works depends on sound tools and procedures, well-defined functional interfaces, disciplined business practices, and adherence to the reliability and regulatory frameworks.

End-of-Chapter Summary

RTOs and ISOs carry distinct responsibilities for real-time operations, wholesale market administration, and regional transmission planning, built on a federal minimum of characteristics and functions. Those functions operate under different rules and have to be managed together to balance reliability and market efficiency.

6 Market Monitoring and Oversight Functions

Market monitoring is one of the least understood RTO functions. It protects market integrity, it is deliberately separated from market operations, and it is not enforcement.

6.1 What Monitoring Is For

Market monitoring exists to keep the wholesale market working properly. It checks that price formation has not been distorted by unusual trading activity, design flaws, or outcomes that undermine confidence. It is related to market administration but it is a different set of activities, and it has to be organized and overseen separately.

Monitors watch market activity continuously for patterns that could indicate the exercise of market power, rule violations, or a design that isn't working. They look at bids, offers, schedules, prices and system conditions to see whether conduct is consistent with the tariff and the market rules. The purpose is preventive and diagnostic, not punitive.

6.2 The Federal Rules for Market Monitors

FERC set the structure in Order No. 719 (October 2008), codified at 18 CFR 35.28(g)(3). Each RTO and ISO must have a Market Monitoring Unit, and the rules spell out its independence. The monitor reports to the RTO's board with its management members removed, or to an independent committee of the board. An RTO with both an internal and an external monitor may let the internal monitor report to management, but if the internal monitor performs any core function it reports to the board.

The core functions are three. The monitor evaluates existing and proposed market rules, tariff provisions and market design elements, but it does not put its own proposed design into effect. It reviews and reports on market performance, at least quarterly, with a more comprehensive annual state of the market report. And it notifies FERC's Office of Enforcement staff of conduct that may need investigation.

The rules also keep the monitor out of the operator's chair. An RTO may not let its monitor, internal or external, take part in administering the tariff. Prospective mitigation stays with the RTO except under a hybrid structure, where the internal monitor may conduct it and the external monitor must be given the responsibility and tools to monitor that mitigation. The tariff must identify which functions the monitor performs. That separation limits interference between tasks and makes the monitoring results credible.

6.3 Monitoring Is Not Enforcement

Monitoring authority is not enforcement power. When a monitor has reason to believe a Market Violation occurred, it makes a written, non-public referral to FERC's Director of the Office of Enforcement. Once it has enough credible information to refer, it refers immediately and stops independent action on the matter. After referral it takes no investigative steps unless the Commission or its staff directs it to. Any financial consequence an RTO tariff applies to specific conduct exists because FERC accepted that tariff language. The RTO cannot create one on its own.

ERCOT follows the same logic under state law. The Texas statute requires ERCOT to contract with a wholesale market monitor selected by the PUCT. The monitor operates under the Commission's supervision and reports potential market manipulation and rule violations directly to the Commission and its staff.

6.4 Who Reads the Reports

FERC is not the only audience. Market participants and state regulators use the quarterly and annual reports to see how the market is performing, how prices are forming, and how market structure is changing. Some material is published and some is filed confidentially, depending on the data. Either way, the reports make the market more accountable by letting outsiders see how it works and how participants behave.

6.5 Where Monitoring Meets Reliability

Monitoring and reliability are connected. Some market dynamics and design elements create reliability risk, particularly under stressed conditions, and what the monitor finds can prompt operating or planning action. Market integrity and reliability are separate goals, but they depend on each other.

The scope and depth of monitoring vary by region with market design, regulatory experience and the characteristics of the transmission system. The principle doesn't vary: fair, transparent and efficient market outcomes inside reliable, compliant operation. Monitoring shows the RTO as market steward rather than market player or market regulator. It builds participant confidence through accountability and early risk detection, and it informs enforcement and policy decisions without becoming the enforcement body.

> **End-of-Chapter Summary**
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> Market monitoring helps keep the wholesale market fair, efficient and secure through independent analysis, market review and reporting. It detects market abuse and structural problems and examines how market outcomes affect reliability. It does not include enforcement, which belongs to FERC (or, in ERCOT, to the PUCT), and it depends on the monitor's independence and its working relationship with the regulator.

7 Coordination with Reliability Organizations and Adjacent Regions

Power does not stop at an RTO boundary. RTOs and ISOs operate inside NERC's reliability framework and have to coordinate with the regions around them.

7.1 Inside the ERO Framework

The North American bulk power system only works if coordination reaches well beyond each RTO and ISO footprint. RTOs and ISOs operate within the reliability framework set by the North American Electric Reliability Corporation (NERC) and the six Regional Entities: MRO, NPCC, ReliabilityFirst, SERC, Texas RE and WECC. They also coordinate across their physical ties to systems outside their footprints.

RTOs and ISOs register with NERC for the functions they perform, such as Reliability Coordinator (RC), Transmission Operator (TOP) and Balancing Authority (BA), as the NYISO example in Chapter 3 shows. Whatever the organization looks like, each must comply with the applicable Reliability Standards and submit to compliance monitoring. Reliability responsibility follows the registered function, not the organizational chart, and the RTO is held accountable for the functions it is registered for.

7.2 The Regional Entity Relationship

The relationship with the Regional Entity is a formal part of that framework. FPA Section 215 provides for NERC to delegate authority to Regional Entities for proposing and enforcing Reliability Standards, and the Regional Entities carry out compliance monitoring and enforcement. As registered entities, RTOs and ISOs provide information, report, and correct violations through the Regional Entity's processes, the same as any other registered entity.

7.3 Neighbors and Seams

Interregional coordination is one of the eight functions FERC requires of every RTO. Conditions in one area can directly affect others, so RTOs and ISOs coordinate with each other and with neighboring systems: exchanging information, aligning real-time operations during stressed conditions, and joining planning assessments that reduce shared risk.

Seams are a persistent problem. Differences in market design, scheduling, congestion management and reserve requirements create inefficiencies at the interfaces. RTOs and ISOs use coordination processes and bilateral and multilateral agreements to manage them. Those measures don't eliminate seams. They mitigate interregional bottlenecks while respecting different governance frameworks.

7.4 Assessments and Emergencies

Wide-area reliability assessments show why coordination matters. FPA Section 215 requires NERC to conduct periodic assessments of the reliability and adequacy of the bulk-power system. NERC's seasonal assessments and its Long-Term Reliability Assessment draw on data from RTOs, ISOs and non-market regions, and many of the assessment areas follow RTO and ISO footprints, including MISO, PJM, NPCC-New York and Texas RE-ERCOT. The 2025 Long-Term Reliability Assessment, published January 2026, covers 23 assessment areas.

Coordination matters most in emergencies. During wide-area disturbances, RTOs and ISOs have to align operating actions, share system conditions, and support restoration across regions. Reliability Standards and operating agreements govern that work, and they put system security ahead of market considerations.

Coordination is a defining feature of what an RTO does. Its market authority is regional, so it has to coordinate constantly to keep supply reliable. RTOs and ISOs are parts of a larger Interconnection-wide system, not independent operators of separate islands, and each region's reliability performance has to fit with its neighbors'.

End-of-Chapter Summary

RTOs and ISOs operate within an Interconnection-wide reliability framework set by the North American Electric Reliability Corporation and enforced by the Regional Entities. Coordination covers formal compliance obligations, operating alignment with adjacent regions, and participation in regional and Interconnection-wide assessments. Together these manage the risks of running a physically interconnected system.

8 Limits of Authority and Common Misconceptions

The most common error about RTOs is attributing to them powers they don't have. Getting that right puts accountability where it belongs.

8.1 The Misconception Problem

One of the biggest barriers to understanding wholesale power markets is a failure to see the scope and limits of RTO and ISO roles. RTOs run the organized markets and regional systems every day, so people tend to assume they hold powers and responsibilities they don't. Correcting that matters. It puts accountability in the right place, it makes policy debates sounder, and it gives an accurate picture of how a reliable system actually operates.

8.2 RTOs Are Not Regulators

The biggest misconception is that RTOs and ISOs are regulators. They perform many regulatory-type functions, but in my view they hold none of a regulator's real power. They carry out their roles under the accepted tariff and operating rules and under their bylaws and operating agreements. They don't make policy, they don't force resource development on anyone, and they don't change market rules without regulatory approval. That power stays with federal and state agencies.

8.3 Capacity and Resource Adequacy

Capacity markets and resource adequacy cause frequent confusion. RTOs and ISOs that run capacity markets administer them and produce resource adequacy studies, but they don't make the investment choices of utilities and market participants, and they don't decide where new plants go. State energy policy, utility resource planning, and the RTO's market prices and rules drive those choices together.

8.4 Operational Authority Is Coordination, Not Ownership

RTO operational authority is often overstated too. RTOs and ISOs issue dispatch instructions and direct the use of transmission, and FERC's rules give them operational authority over the transmission facilities under their control. They generally don't own those facilities. The owners own and maintain them and remain responsible for their operation, maintenance and reliability under the applicable Reliability Standards. The RTO's authority works through coordination and direction under rules and market mechanisms the participants have agreed to follow.

8.5 Prices Come From Rules, Not Discretion

Market outcomes get misdescribed as well, especially price formation. Prices in organized markets come from a market-clearing process that combines participants' bids and offers with prevailing conditions such as supply and demand. The RTO doesn't manage that on a discretionary basis to produce a particular price or outcome for anyone. The rules behind it come out of market design deliberation among regulators and many stakeholders.

8.6 Grid Events Have Many Owners

There is also confusion about who is responsible when something goes wrong on the grid. RTOs and ISOs may handle much of the operating response to a disturbance, but they don't act alone. Many other entities have functional roles that require specific actions to keep the system reliable. Reliability investigations and enforcement look at each registered entity's performance against the standards that apply to its registered functions. An RTO is one participant among many and shouldn't be held singularly accountable for every event on the grid it coordinates.

8.7 Why the Misconceptions Persist

These misconceptions come from how visible RTOs are. As the central coordinators in their markets, they get the most scrutiny and criticism. Confusing coordination with control leads to misleading claims and to policy proposals that ignore the real authorities and limits involved. Understanding those limits is what allows fair comparisons among RTOs and sound evaluation of proposed changes to market and reliability rules.

End-of-Chapter Summary

RTOs and ISOs are often presumed to have authority and responsibility beyond their assigned roles. They are not the regulator, the resource owner or the policymaker. They coordinate functions within defined limits and scopes of authority delegated by others. Assigning responsibility accurately in an organized market region starts with knowing those boundaries.

9 RTOs and ISOs Within the Reliability Framework

In the reliability framework an RTO is defined by its registered functions, not by its size or its market role.

9.1 Functional, Not Institutional

RTOs and ISOs hold a distinctive place in the North American reliability framework. That place is defined less by ownership or regulatory control and more by coordination, governance, and functional accountability inside a large interconnected system with enforceable standards that apply to every party. Treating RTOs as anything other than part of that regime misses the context they operate in.

Reliability of the bulk power system is built from functional responsibilities assigned to registered entities. NERC's Reliability Standards define them and the compliance and enforcement program enforces them. RTOs and ISOs are registered for particular functions, such as reliability coordination, transmission operation and balancing. Their reliability responsibilities come from those registrations, not from their role in the wholesale market or their size and influence in the industry.

9.2 Accountability Applies Equally

That distinction is critical. Reliability accountability is functional and results-oriented, and it applies equally to market and non-market entities. RTOs and ISOs answer for the functions they are registered for, just as Transmission Owners, Generator Owners, Distribution Providers and other registered entities answer for theirs. The standards don't move accountability onto the RTO. They depend on many functions performed well across many organizations.

That has a practical consequence for market participants. In its 2008 guidance, FERC said it would not allow an automatic tariff pass-through of a penalty against an RTO, but it would consider Section 205 filings case by case. An RTO can file to assign the cost directly to an entity identified as responsible during the Regional Entity's enforcement process, provided that entity was put on notice there, or file to spread it across its members and customers. In weighing those filings, FERC said it would consider, among other things, whether the RTO had a sound compliance program, whether the violation was intentional or grossly negligent, whether management was involved, and the RTO's ability to pay.

9.3 Two Modes of Work

RTOs work in two modes at once: market management and reliability supervision. Market rules are designed to procure the reserves the system needs and to reflect system constraints, so that the market delivers reliable supply. The system can't rely on the market alone, though, so

the Reliability Standards set minimum requirements for the basic functions of system operation under all conditions. RTOs have to balance the two, and when the market can't maintain reliability in an emergency, the operator takes control.

Reliability events show the role plainly. During a disturbance, the RTO's coordinating responsibility puts it at the center of operating communications and restoration. The post-event review still looks at the performance of every relevant entity against the standards for its registered role. In that sense RTOs act more as coordinators of everyone else's performance than as providers of reliability in their own right.

9.4 Change Happens Inside the Framework

The framework also bounds how RTO and ISO market rules can change. As the resource mix shifts, load grows, and new public policies arrive, each RTO and ISO can propose changes to its market and grid rules. It can only make them within the limits set by the Reliability Standards and the regulators who enforce them.

Seeing RTOs through the reliability framework gives some balance while the industry changes around them. Market designs come and go. The functional model, with responsibility assigned by registration, is the stable part. The standards themselves change through NERC's development process and FERC approval. RTOs remain important but defined and bounded players inside that structure. Their success depends on adherence to the reliability rules, not on acquiring new regulatory powers or centralized control.

> **End-of-Chapter Summary**
>
> An RTO's reliability obligations come from its NERC registrations, not from its market role or its size, and it answers for those functions like any other registered entity. A penalty against an RTO does not pass through to its members automatically. FERC reviews any filing to recover the cost case by case under Section 205.

10 Strategic Implications for Reliability and Market Governance

RTOs sit where reliability goals, market rules and governance meet. That position makes them important, and it makes expectation management part of the job.

10.1 Where the Tensions Meet

The role of RTOs and ISOs reaches beyond daily operations and market administration. As the electric system changes, alignment among reliability goals, market rules and governance becomes critical, and RTOs sit at that intersection. They are not just managers or dispute resolvers. They are where the industry's underlying tensions play out: competition versus central planning, regional versus national, market-based versus cost-of-service.

10.2 System Complexity

Growing system complexity is a strategic issue for the operator. More variable generation, long transmission lines to reach remote load, and high concentrations of load all make the system harder to manage. The RTO often sees the stress points first, through its real-time operating and market data. Its analysis and actions are the first step in deciding how those operating risks get handled within current regulatory policy. The RTO responds within the rules and policies under which the grid is run. The policy questions that surface from that work are decided outside the RTO.

10.3 Market Design Evolution

Market design evolution is another strategic dimension. Markets have to adapt as the resources and systems they trade change. RTOs and ISOs often propose rule and policy changes, which then need stakeholder review and regulatory approval. In that sense RTOs act as a filter between the design changes that conditions require and the politics of changing the rules. Governance that lets necessary changes happen in time, without giving up reliability and accountability, is essential.

10.4 State Policy and Federal Markets

State public policy interacts with federally regulated markets in ways that significantly affect the choices of utilities and others. Again, RTOs don't make the policy. Their markets reflect the conditions and rules that state policy and federal market design impose on prices and supply. In my view the RTO is an accounting and analytical device here, not a regulatory tool.

10.5 Reliability Governance Under Pressure

Reliability governance is under its own strategic pressure as system risks become more interdependent. Wide-area events place more demands on the governing framework's processes and definitions. Through regional risk studies, reliability assessments, post-event analyses and planning studies, RTOs help the Interconnection learn, without changing the standards-based governance framework underneath.

10.6 Managing Expectations

A recurring strategic issue for RTOs is expectation management. As their capabilities come up more often in public forums and policy debates, they are treated as ready-made solutions to problems that are much broader than anything an RTO can resolve or control. Sometimes the pressure comes from outside advocates pushing a particular policy. In my view, the pull sometimes comes from inside, too, to advocate for policy agendas or social goals the RTO has neither the capability nor the mandate to deliver. Keeping stakeholders' views of the RTO's role properly bounded, within its governance structure and mandate, is as much a strategic matter for an RTO as an operating one.

10.7 The Bottom Line

The strategic importance of RTOs lies in their role as coordinating bodies in a system where authority is diffuse. They make large-scale trading and system operation possible inside defined boundaries. Their performance will depend less on how much authority they have and more on how well they do their work, the quality of their governance, and their adherence to the reliability rules of the Bulk Electric System.

That is the central finding of this reference. RTOs and ISOs are a necessary institution in the operating rules of a modern grid. They are not regulators, owners of transmission assets, or policymakers. They are administrative, coordinating and informational institutions working inside a decentralized system, where clearly bounded individual authority and mutual responsibility keep the grid efficient and reliable.

> **End-of-Chapter Summary**
>
> RTOs often see system stress first and propose rule changes, but stakeholders review those proposals and FERC decides them. The policy questions that surface in RTO work are settled by federal and state regulators, so expect the RTO to analyze and administer, not to resolve them.

Glossary

Entries marked (NERC) quote the NERC Glossary of Terms (October 2026).

Term	Meaning in this paper
Balancing Authority (BA)	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. (NERC)
Balancing Authority Area (BAA)	The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area. (NERC)
Bulk Electric System (BES)	Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. This does not include facilities used in the local distribution of electric energy. (NERC; inclusions and exclusions omitted)
Independent System Operator (ISO)	An independent entity that operates the transmission system of several transmission owners on a functional basis, without owning the assets, under a FERC-accepted tariff or, in ERCOT, under PUCT oversight.
Market Monitoring Unit (MMU)	The person or entity responsible for carrying out the market monitoring functions FERC has ordered RTOs and ISOs to perform. (18 CFR 35.28(b))
Planning Authority (Planning Coordinator)	The responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems. (NERC)
Regional Transmission Organization (RTO)	An entity that meets FERC's four minimum characteristics and performs its eight minimum functions under 18 CFR 35.34.
Reliability Coordinator (RC)	The entity that is the highest level of authority who is responsible for the Reliable Operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. The Reliability Coordinator has the purview that is broad enough to enable the calculation of Interconnection Reliability Operating Limits, which may be based on the operating parameters of transmission systems beyond any Transmission Operator's vision. (NERC)
Transmission Operator (TOP)	The entity responsible for the reliability of its "local" transmission system, and that operates or directs the operations of the transmission Facilities. (NERC)
Transmission Owner (TO)	The entity that owns and maintains transmission Facilities. (NERC)
Transmission Service Provider (TSP)	The entity that administers the transmission tariff and provides Transmission Service to Transmission Customers under applicable Transmission Service agreements. (NERC)

How Energy Compliance Can Help

Every Energy Compliance engagement is overseen by a senior practitioner. Inside an RTO footprint, the hard questions sit at the line between the tariff and the Reliability Standards.

Registration, applicability and the RTO interface

Knowing which obligations are yours and which sit with the RTO starts with registration. EC provides registration and applicability analysis, operational and engineering reliability alignment, and NERC reliability and compliance advisory support, including senior advisory on specific, complex reliability questions where market rules and reliability obligations meet.

Audit, enforcement and program review

EC provides audit and enforcement support (non-advocacy), audit defense with Notice of Penalty response and settlement posture, mitigation planning and Self-Report development, and NERC compliance program support, interpretation, and audit preparation. Regulator-perspective program reviews and reliability governance and program assessments tell you whether your program would survive real audit questions, and compliance program design and improvement follows from the findings.

Training and industry engagement

EC delivers training and executive briefings on reliability frameworks, including how RTO, FERC, NERC and state authority fit together, and supports industry engagement in standards development and working-group participation. Each engagement is scoped to the entity's role, function, and bulk system impact.

WattOps Compliance

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

Renewable and storage plants answer to RTO dispatch and to the Reliability Standards at the same time, and the operations data has to support both. RenewOps is EC's renewable operations monitoring and analytics platform, with a Data Center module.

If you're not sure where the RTO's job ends and yours begins, call before the auditor asks.

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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

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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 201, 16 U.S.C. 824, Declaration of policy; application of subchapter; definitions. https://www.law.cornell.edu/uscode/text/16/824
- Federal Power Act Section 205, 16 U.S.C. 824d, Rates and charges; schedules; suspension of new rates. https://www.law.cornell.edu/uscode/text/16/824d
- Federal Power Act Section 206, 16 U.S.C. 824e, Power of Commission to fix rates and charges. https://www.law.cornell.edu/uscode/text/16/824e
- Federal Power Act Section 215, 16 U.S.C. 824o, Electric reliability. https://www.law.cornell.edu/uscode/text/16/824o
- 18 CFR 35.34, Regional Transmission Organizations (eCFR). https://www.ecfr.gov/current/title-18/chapter-I/subchapter-B/part-35/subpart-F
- 18 CFR 35.28, Non-discriminatory open access transmission tariff, including paragraph (g)(3), Market monitoring policies. https://www.ecfr.gov/current/title-18/chapter-I/subchapter-B/part-35/subpart-C/section-35.28
- Federal Energy Regulatory Commission, Order No. 2000, Regional Transmission Organizations, 89 FERC ¶ 61,285, Docket No. RM99-2-000 (issued December 20, 1999), including its discussion of Order No. 888. https://www.ferc.gov/legal/maj-ord-reg/land-docs/RM99-2-00K.pdf
- Federal Energy Regulatory Commission, Major Orders and Regulations (Order No. 888, April 24, 1996; Order No. 719, October 17, 2008; Order No. 1000, July 21, 2011; Order No. 1920 and its rehearing orders, 2024 and 2025). https://ferc.gov/major-orders-regulations
- Federal Energy Regulatory Commission, Order Providing Guidance on Recovery of Reliability Penalty Costs by Regional Transmission Organizations and Independent System Operators, 122 FERC ¶ 61,247, Docket No. AD07-12-000 (issued March 20, 2008). https://www.ferc.gov/sites/default/files/2020-05/E-3_30.pdf
- Federal Energy Regulatory Commission, Order No. 1920 Compliance Filings Schedule (updated March 12, 2026). https://ferc.gov/news-events/news/order-no-1920-compliance-filings-schedule
- Federal Energy Regulatory Commission, What State Regulators Need to Know About Order No. 1920-B. https://ferc.gov/what-state-regulators-need-know-about-order-no-1920-b
- Federal Energy Regulatory Commission, An Introductory Guide to Electricity Markets Regulated by the Federal Energy Regulatory Commission (updated April 3, 2025). https://www.ferc.gov/introductory-guide-electricity-markets-regulated-federal-energy-regulatory-commission
- Electric Reliability Council of Texas, About ERCOT. https://www.ercot.com/about

- Texas Utilities Code Section 39.1515, Wholesale Electric Market Monitor. https://tcss.legis.texas.gov/resources/UT/htm/UT.39.htm
- North American Electric Reliability Corporation, Glossary of Terms Used in NERC Reliability Standards (web version, accessed October 25, 2026). https://www.nerc.com/glossary-of-terms
- North American Electric Reliability Corporation, 2025 Long-Term Reliability Assessment (January 2026). https://www.nerc.com/globalassets/our-work/assessments/nerc_ltra_2025.pdf
- North American Electric Reliability Corporation, 2025 ORCP and CMEP Annual Report (February 11, 2026), for the six Regional Entities of the ERO Enterprise. https://www.nerc.com/globalassets/programs/enforcement/cmep-and-vegetation-reports/2025-orcp-and-cmep-annual-report.pdf

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