EVOLUTION OF ELECTRIC RELIABILITY ORGANIZATION MODEL: REFLECTIONS ON THE 20TH ANNIVERSARY AND GLIMMERS OF THE FUTURE

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Synopsis: On August 14 and 15, 2003, the northeastern United States experienced the worst power blackout in U.S. history. The 2003 Northeast Blackout cemented the need for a self-regulatory, mandatory, reliability regime — a regime already contemplated in draft bills as early as 1998. Based in part on the considerable political pressure to address the electric industry's systemic failures and a lack of mandatory standards for operating and planning the U.S. power grid, Congress passed the Energy Policy Act of 2005 (EPAct 2005), which, among other things, amended the Federal Power Act (FPA) to add a new section 215 pertaining to electric grid reliability. Under this statutory authority, Congress authorized the Federal Energy Regulatory Commission (FERC or the Commission) to certify a single electric reliability organization (ERO) able to develop and enforce mandatory reliability standards to maintain and improve the reliability of the nation's electric grid or "bulk-power system." Over the course of eighteen months, the theretofore primarily energy markets regulator FERC established a new Office of Electric Reliability, promulgated rules to implement section 215, certified the North American Electric Reliability Corporation (NERC) as the ERO, and approved an initial set of eighty-three reliability standards applicable across the continental United States.

Now, twenty years later, this article explores the evolution of the ERO by analyzing Commission precedent on its jurisdiction under section 215 and the ERO's core functions — reliability standard development and compliance enforcement — providing insights on what significant trends may mean for the future of electric grid reliability and the roles of FERC, the ERO, and industry.

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I. INTRODUCTION

It has now been twenty years since FERC was granted the authority to certify an ERO to develop and enforce reliability standards that provide for the reliable

and secure operation of the bulk-power system.[1] The ERO model established by Congress in EPAct 2005 represented a novel approach of leveraging industry self-regulation and technical expertise with significant federal oversight to ensure grid reliability. Over the past twenty years, this model has evolved from rigid bright-line rules and prescriptive processes to more flexible, risk-based frameworks. Yet this evolution has maintained consistent principles: meaningful federal oversight, clear accountability, and demonstrable reliability benefits. By examining FERC precedent across three key aspects of the reliability program — jurisdiction, standards development, and enforcement — this article explores how FERC has maintained these foundational principles while adapting to emerging challenges.

The evolution of the ERO model reflects FERC's systematic approach to balancing program efficiency with robust oversight of the reliability of the bulk-power system. When presented with novel concepts and methods — whether in determining jurisdiction over new technologies, developing reliability standards, or processing violations — FERC has consistently supported innovation that enhances reliability outcomes while preserving essential oversight functions. This careful calibration pervades FERC's reliability decisions — supporting changing consideration of risk as to which entities should comply with reliability standards, allowing flexible standard development processes but maintaining authority to direct needed modifications, and accepting streamlined enforcement methods but insisting on transparency and consistent implementation across regions.

As the electric grid faces unprecedented changes from extreme weather, cyber and physical security threats, and the integration of variable resources and energy storage, the ERO model's ability to adapt while maintaining effective oversight becomes increasingly critical. The success of future adaptations will likely depend on satisfying the principles FERC has articulated through two decades of precedent: demonstrating concrete reliability benefits, preserving meaningful oversight capabilities, and maintaining consistent implementation across regions. Understanding how FERC has balanced these fundamental values provides crucial guidance for addressing emerging reliability challenges while preserving the fundamental goal of protecting bulk-power system reliability.

II. BACKGROUND

A. From Peer Pressure to Process — The Rise of a Mandatory Reliability Regime

The foundations of electric utility reliability coordination began well before NERC's formation. In 1962, the North American Power Systems Interconnection Committee (NAPSIC) was established as an informal organization of electric util-

1. 16 U.S.C. § 824o(a)(1) (2015) (FPA section 215(a)(1) defines the bulk-power system as "(A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability." The definition "does not include facilities used in the local distribution of electric energy.").

ities and operating personnel to develop voluntary "operating guides" for interconnected transmission systems.[2] This early effort at self-regulation emerged from the growing recognition by industry and the Federal Power Commission that the increasingly interconnected North American transmission grid required coordinated operations across utility footprints.[3]

NERC's predecessor, the National Electric Reliability Council (Council), was formed in 1968 after the Great Northeast Blackout of 1965. It was based on recommendations from the Federal Power Commission and built on NAPSIC's model of voluntary compliance.[4] In this early compliance model, member organizations submitted criteria to the Council, from which the Council developed voluntary reliability criteria.[5] The early compliance model relied entirely on peer pressure and mutual self-interest.[6]

Several factors in the 1980s and 1990s challenged the voluntary compliance model. In 1980, the Council's Engineering Committee held its first meeting and discussed, among other things, how and whether to frame Council-wide reliability criteria as rules or whether regions could adopt them through consensus.[7] In December 1997, the Council's "Blue Ribbon Panel" recommended that the Council restructure itself into the "North American Electric Reliability Organization" with authority to enforce mandatory reliability standards.[8] The Council's panel outlined the necessary elements to bring this vision to fruition: (1) authority to set, measure, and enforce reliability standards; (2) independent governance structure; (3) federal oversight and approval from relevant government agencies; and (4) a self-regulatory model to maintain technical competence while ensuring impartiality.[9]

This vision of an "audited self-regulatory organization" formed the blueprint for what would eventually become the ERO model. In January 1997, the Secretary

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2. *See* NAT'L GOVERNORS ASSOC., ELECTRICITY MARKETS — 101, https://www.nga.org/electricity-markets/ (last visited Mar. 10, 2025).

3. *See, e.g.*, FED. POWER COMM'N, NATIONAL POWER SURVEY 163-67 (Oct. 1964), https://babel.hathitrust.org/cgi/pt?id=mdp.39015023953287&seq=11&q1=standards; *see also* NERC, HISTORY OF NERC (Mar. 2023), https://www.nerc.com/news/Documents/March%202023%20NERC%20Timeline.pdf.

4. *See generally* FERC, THE CON EDISON POWER FAILURE OF JULY 13 AND 14, 1977 (June 1978), https://www.osti.gov/servlets/purl/6673953; Jay Apt et al., *Can the U.S. Have Reliable Electricity?* 2 (Carnegie Mellon Elec. Indus. Ctr., Working Paper No. CEIC-06-2, 2006), https://www.cmu.edu/ceic/assets/docs/publications/working-papers/ceic-06-02.pdf.

5. Michael R. Gent, *Electric Reliability: You Only Miss It When It's Not There*, 8 IEEE POWER ENG'G REV. 22 (Jan. 1988).

6. *See* DAVID NEVIUS, THE HISTORY OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION 91 (2020), https://www.nerc.com/news/Documents/NERCHistoryBook.pdf [hereinafter HISTORY OF NERC] (quoting R. Sergel, NERC's president from 2005 to 2009, explaining that the interconnected transmission grid was "only as strong as its weakest link" and that "every asset owner has an interest in ensuring its neighbors keep reliability a priority").

7. *Id*. at 163.

8. *Id*. at 44.

9. *Id.*; *see also* NERC, NERC COMPLIANCE MONITORING AND ENFORCEMENT PROGRAM: 2008 ANNUAL REPORT 8 (2009), https://www.balch.com/files/upload/NERC_CMEP_Annual_Report_2008.pdf.

of the Department of Energy Advisory Board Task Force on Electric System Reliability (DOE Task Force) convened to "advise on critical institutional, technical, and policy issues that need to be addressed in order to maintain bulk electric system reliability in the context of a more competitive industry."[10] The DOE Task Force reached similar conclusions as the Council's panel, emphasizing that reliability rules needed to be mandatory and enforceable in an increasingly competitive market.[11] The DOE Task Force issued an Interim Report in July 1997 and six other task force papers between November 1997 and July 1998.[12] The Interim Report provided early recommendations regarding the need for Congress to "clarify the FERC's authority over an electric industry self-regulating reliability organization and expand the FERC's jurisdiction for reliability over the bulk-power system."[13] The final report included twenty-eight different recommendations developed by a group representing all major segments of the electric industry.[14] Fifteen of those recommendations were actions to facilitate the Council's transformation from an organization that relied on voluntary cooperation and adherence to reliability rules into a self-regulatory reliability organization.[15]

The Council redesigned itself to match the DOE Task Force report recommendations and to facilitate its exclusive designation as the ERO.[16] In August 1997, the Council assembled a committee to recommend how to set, oversee, and implement policies and standards to ensure continued reliability.[17] The result was a report asserting that the introduction of competition within the electric industry and open access to transmission systems required creating a new organization that has "the technical competence, unquestioned impartiality, authority, and respect of market participants necessary to set and enforce reliability standards for the bulk electric system."[18]

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10. U.S. DEP'T OF ENERGY, MAINTAINING RELIABILITY IN A COMPETITIVE U.S. ELECTRICITY INDUSTRY: FINAL REPORT OF THE TASK FORCE ON ELECTRIC SYSTEM RELIABILITY, at ix-x (Sept. 29, 1998), https://certs.lbl.gov/sites/all/files/basic-page/maintainting-reliability-in-competitive-electricity-industry-1998_0.pdf [hereinafter FINAL REPORT OF THE TASK FORCE].

11. *Id.* at vii-xi.

12. *Id.* pt. II, apps. A-G.

13. *Id.* at vii-viii.

14. FINAL REPORT OF THE TASK FORCE, *supra* note 10, at xvi–xviii

15. *Id.* at xi, xvi–xviii.

16. *Assuring Reliability of Transmission Grids in Increasingly Competitive Electricity Markets: Hearing Before the Subcomm. on Energy and Nat. Res.*, 106th Cong. 2 (1999) [hereinafter Testimony of David R. Nevius].

17. HISTORY OF NERC, *supra* note 6, at 43.

18. David R. Nevius & Ellen P. Vancko, *Ensuring a Reliable North American Electric System in a Competitive Marketplace* 2 (NERC Discussion Paper, 2005), https://www.nerc.com/pa/rrm/ea/August%2014%202003%20Blackout%20Investigation%20DL/NERC_recommendation_12-technical_edits.pdf (citing ELEC. RELIABILITY PANEL, RELIABLE POWER: RENEWING THE NORTH AMERICAN ELECTRIC RELIABILITY OVERSIGHT SYSTEM (1997)).

The Council recast itself as the potential North American Electric Reliability Organization, with a design borrowing heavily from the U.S. Securities and Exchange Commission's self-regulatory organization model.[19] The turnaround was swift, with an updated mission, corporate design, independent board of trustees' model, standards drafting process, and compliance and enforcement program coming to fruition within a year of the committee's creation.[20] During the late 1990s, the Council led the development of legislation to transform itself from a voluntary to a mandatory system that would receive the backing and support of Congress. This legislation was meant to leverage stakeholders with relevant expertise to set the technical standards needed to ensure the reliability of the interconnected transmission system. It also created an oversight role for FERC to review the ERO's processes to ensure fairness, due process, and overall compatibility with the public interest.[21]

Agreeing on legislative language was difficult due to certain contentious sections of the draft legislation.[22] This led to the Council (now referred to as NERC), its stakeholders, and the DOE, merging the "best features" of the various drafts into a single draft.[23] A broad coalition of industry organizations and stakeholders supported the final NERC language.[24] On February 1, 1999, NERC's Board of Trustees approved consensus legislative language.[25] NERC and industry supporters of the consensus legislative language were successful in getting the NERC

19. For example, the National Association of Securities Dealers, the National Futures Association, and securities and commodities exchanges, such as the New York Stock Exchange, New York Mercantile Exchange, and the Chicago Board of Trade are self-regulatory organizations requiring registration of individuals or firms in securities and which have established sanctions programs and appeals procedures. *See* Notice of Proposed Rulemaking, *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards,* 112 FERC ¶ 61,239 at PP 68-70 (2005); *see also* Testimony of David R. Nevius, *supra* note 16, at 2.

20. In August 1997, the NERC Board of Trustees assembled a Future Role of NERC Task Force—II, which issued its report *Renewing the North American Electric Reliability Oversight System* on December 22, 1997. The task force submitted it final recommendations to the Board for review and approval at its May 1998 meeting. *See* HISTORY OF NERC, *supra* note 6, at 44.

21. Testimony of David R. Nevius, *supra* note 16, at 5-6.

22. According to various materials from July 1998 through July 1999, the most contentious areas of the legislation surrounded regional reliability implementation agreements and divining the appropriate balance between State and Federal responsibilities and oversight. *See, e.g.*, Testimony of David R. Nevius, *supra* note 16, at 2.

23. NERC Board of Trustees, Agenda, July 9-10, 1998, Item 11: Draft Stand-Alone Reliability Legislation, at 18.

24. American Public Power Association; Canadian Electricity Association; Edison Electric Institute; Electric Power Supply Association; Electricity Consumers Resource Council; Enron Corp.; and National Rural Electric Cooperative Association.

25. *See, e.g.*, NERC, RELIABILITY ASSESSMENT 1999-2008, at 37 (May 2000), https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/99ras.pdf.

consensus language included in several key restructuring bills introduced in Congress in the late 1990s and early 2000s — but none of which were ultimately adopted.[26]

The 2003 Northeast Blackout — one of the largest outages in history that left more than 50 million people in eight states and parts of Canada in the dark and caused approximately $10 billion in economic losses[27] — powerfully demonstrated the limitations of voluntary standards when investigations revealed that NERC reliability standards had been violated and these violations contributed directly to the blackout.[28] While efforts to establish mandatory reliability standards predated the blackout by several years, this event created the political momentum needed to finally pass reliability legislation. And to finally incorporate the NERC consensus language (almost verbatim) into law.

B. FPA Section 215 and FERC Part 39 Regulations

On August 8, 2005, Congress enacted EPAct 2005, adding section 215 to the FPA.[29] Section 215 established a comprehensive statutory framework for regulating bulk-power system reliability in the United States, representing a significant departure from the preceding voluntary regime. Under this statutory authority, Congress authorized FERC to certify an ERO with the ability to develop and enforce reliability standards for the bulk-power system, subject to Commission oversight and approval.

Section 215(c) of the FPA establishes the requirements for ERO certification. Specifically, the ERO candidate must be able to develop and enforce reliability standards that "provide for an adequate level of reliability of the bulk-power system."[30] The statute also requires that the ERO have established rules that: (1) assure independence, while also "assuring fair stakeholder representation . . . and balanced decisionmaking"; (2) equitably allocate "reasonable dues, fees and other charges among end users"; (3) provide "fair and impartial procedures for enforcement of reliability standards through the imposition of penalties"; (4) provide "reasonable notice and opportunity for public comment, due process, . . . and balance

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26. The Clinton administration largely adopted the NERC language in its legislation introduced by Senator Murkowski (S. 1047), as did Senator Thomas in his legislation (S. 516), and the Largent-Markey bill introduced in the House the same year (H.R. 2050).

27. N.Y. ISO, A LOOK BACK AT THE NORTHEAST BLACKOUT OF 2003 AND LESSONS LEARNED (Aug. 10, 2023), https://www.nyiso.com/-/a-look-back-at-the-northeast-blackout-of-2003-and-lessons-learned.

28. U.S.-CANADA POWER SYS. OUTAGE TASK FORCE, FINAL REPORT ON THE AUGUST 14, 2003 BLACKOUT IN THE UNITED STATES AND CANADA: CAUSES AND RECOMMENDATIONS 17 (2004), https://www.energy.gov/oe/articles/blackout-2003-blackout-final-implementation-report [hereinafter FINAL REPORT ON THE AUGUST 14, 2003 BLACKOUT]; *see also Policy Statement on Matters Related to Bulk Power System Reliability,* 107 FERC ¶ 61,052 (2004) (responding to recommendations in the Final Report on the August 14, 2003 Blackout and a 2003 public conference on reliability to address FERC's "role and policies regarding reliability" including, among other things, "the need to expeditiously modify existing bulk power system reliability standards.").

29. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, 941 (2005).

30. 16 U.S.C. § 824o(c)(1).

of interests in developing reliability standards and otherwise exercising its duties"; and (5) take steps to "gain recognition in Canada and Mexico."[31]

Section 215(e)(4) of the FPA provides for FERC to issue regulations authorizing the ERO to delegate authority to a Regional Entity "for the purpose of proposing [regional] reliability standards . . . and enforcing reliability standards."[32] Regional Entities must meet the same statutory criteria as those required for the ERO, except the statute gives more flexibility in the composition of the Regional Entity board of directors. FERC must approve delegation agreements between the ERO and Regional Entities and is also authorized to "modify such delegation."[33]

On February 3, 2006, FERC issued Order No. 672 to implement the requirements of the FPA section 215, which added part 39 to its regulations.[34] Order No. 672 added to FERC's regulations the process to certify an ERO responsible for proposing and enforcing mandatory reliability standards subject to FERC's review and oversight.[35] The certified ERO is given the authority to develop reliability standards through a stakeholder process that incorporates due process requirements and opportunities for public participation. Such standards become enforceable in the continental United States only upon FERC's approval.[36]

C. The ERO Construct

In 2006, FERC certified NERC as the ERO as one of its first reliability actions after issuing Order No. 672.[37] As the ERO, NERC's mission is to assure the reliable operation of the bulk-power system in North America. NERC develops and enforces reliability standards, assesses seasonal and long-term reliability, monitors the bulk-power system, and educates, trains, and certifies industry personnel.[38] NERC's jurisdiction includes the users, owners, and operators of the bulk-power system across the continental United States, Canada, and the northern part of Baja California, Mexico.[39]

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31. *Id*. § 824o(c)(1)-(2).

32. *Id.* § 824o(e)(4).

33. *Id.*

34. Order No. 672, *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, 114 FERC ¶ 61,104 (2006), *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006).

35. Order No. 672, *supra* note 34, at P 31.

36. Reliability jurisdiction in the United States is over the interconnected Bulk-Power System, which excludes Alaska and Hawaii as they are geographically isolated and operate their own independent transmission grids.

37. *See generally NERC*, 116 FERC ¶ 61,062 (2006), *order on reh'g and compliance*, 117 FERC ¶ 61,126 (2006), *order on compliance*, 118 FERC ¶ 61,030, *order on compliance*, 118 FERC ¶ 61,190, *order on reh'g*, 119 FERC ¶ 61,046 (2007), *aff'd sub nom.* Alcoa Inc. v. FERC, 564 F.3d 1342 (D.C. Cir. 2009).

38. *About NERC*, NERC, https://www.nerc.com/AboutNERC/Pages/default.aspx (last visited Mar. 10, 2025).

39. While this article focuses primarily on the U.S. electric reliability framework, the ERO model represents a unique international regulatory approach. NERC's jurisdiction spans not only the continental United States but also significant portions of Canada and northern Baja California, Mexico. Canadian authorities, while not subject to FERC's jurisdiction, have established parallel frameworks recognizing NERC as the ERO. All

NERC delegates certain authorities to six Regional Entities through FERC-approved delegation agreements.[40] Initially, eight Regional Entities operated under delegation agreements: Florida Reliability Coordinating Council (FRCC), Midwest Reliability Organization, Northeast Power Coordinating Council (NPCC), ReliabilityFirst Corporation, SERC Reliability Corporation, Southwest Power Pool Regional Entity (SPP RE), Texas Reliability Entity, and Western Electricity Coordinating Council (WECC).[41] Each Regional Entity is responsible for enforcing compliance with the NERC reliability standards within their geographic region consistent with the ERO compliance and enforcement program.

Under the delegation agreements, the Regional Entities are responsible for compliance oversight and enforcement of reliability standards for approximately 1,400 registered entities (generator owners, distribution providers, transmission owners, etc.) that own, operate, or use the bulk-power system.[42] Through the ERO compliance and enforcement program, Regional Entities conduct compliance monitoring activities like audits and spot checks and receive self-reports from registered entities regarding their compliance with the reliability standards. The Regional Entities have enforcement authority to address violations through various disposition methods, which will be discussed in more detail below.

FERC authority over NERC as the ERO includes the authority to approve reliability standards developed by NERC, which become enforceable in the continental United States.[43] FERC also reviews and approves NERC's Rules of Procedure, annual business plans and budgets, NERC and Regional Entity bylaws and other rules, and can hear appeals of NERC or Regional Entity enforcement decisions.[44] FERC can also conduct independent reliability compliance audits and investigations of NERC and can direct NERC to address specific reliability matters through its reliability standards development process.[45]

NERC memoranda of understanding with the Canadian provinces and the Canadian Energy Regulator are available on NERC's website. *See, e.g.*, NERC, CANADIAN MOUS, https://www.nerc.com/FilingsOrders/ca/Pages/Canadian-MOUs.aspx (last visited Apr. 20, 2025).

40. All NERC and Regional Entities Regional Delegation Agreements are available on the NERC website. *See, e.g.*, NERC, REGIONAL DELEGATION AGREEMENTS AND BYLAWS, https://www.nerc.com/AboutNERC/Pages/Regional-Delegation-Agreements.aspx (last visited Apr. 20, 2025).

41. These Regional Entities were largely based on the geographic footprints of their predecessor voluntary regional reliability councils. Since issuance of Order No. 672, SPP RE and FRCC have dissolved their Regional Entity status, terminated their regional delegation agreements with NERC, and transferred their registered entities to the remaining Regional Entities for registration, compliance, and enforcement purposes. *See NERC et al.*, 163 FERC ¶ 61,094 (2018); *see also NERC et al.*, 167 FERC ¶ 61,095 (2019) (approving, among other things, the dissolution of FRCC as a Regional Entity).

42. A regularly-updated list of all entities registered and required to comply with reliability standards and the functions they serve are available on the NERC website. *See, e.g.*, NERC, ORGANIZATION REGISTRATION AND ORGANIZATION CERTIFICATION, https://www.nerc.com/pa/comp/Registration%20and%20Certification%20DL/NERC_Compliance_Registry_Matrix_Excel.xlsx (last updated Mar. 25, 2023).

43. 16 U.S.C. § 824o(d)-(e), (k).

44. *Id.* § 824o(f); 18 C.F.R. § 39.4 (2025); Order No. 672, *supra* note 34, at P 24.

45. 16 U.S.C. § 824o(b), (d).

NERC and the Regional Entities coordinate with industry stakeholders through various committees and working groups to develop reliability standards, assess risks, and improve reliability practices. Industry stakeholders provide technical expertise and help ensure that the standards development process is informed. The NERC Compliance and Certification Committee, comprised of industry representatives, provides stakeholder oversight of NERC's compliance with its Rules of Procedure, and can act as a hearing body or mediator for disagreements between the Regional Entities and NERC.[46] This model harnesses the collective expertise of the ERO, its Regional Entities, and industry stakeholders to maintain and improve the reliability and security of the bulk-power system.

III. TOUCH POINTS — MAJOR ERO FUNCTIONS, EVOLUTION, AND FUTURE TRENDS

A. Jurisdiction

The jurisdictional framework established by section 215 of the FPA represented a fundamental departure from traditional FERC tariff and rate regulation of electric utilities, requiring FERC to delineate entirely new boundaries of federal reliability oversight. As evidenced by FERC's initial orders after EPAct 2005, translating the statutory mandate into workable jurisdictional determinations required careful consideration of legal principles. Through these early orders, FERC constructed a jurisdictional framework that balanced practical implementation with the expansive reliability mandate granted by Congress.

In EPAct 2005, Congress provided that:

> The Commission shall have jurisdiction, within the United States, over the ERO . . . , any regional entities, and all users, owners and operators of the bulk-power system, including but not limited to the entities described in section 824(f) of this title, for purposes of approving reliability standards . . . and enforcing compliance.[47]

The statute explains that the term "'bulk-power system' means (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy."[48]

1. Early Uncertainties and Partial Resolution

Unlike other provisions of part II of the FPA, section 215 never mentions the term "public utility." Rather, the statute conveys jurisdiction to FERC over "users, owners and operators" of the bulk-power system.[49] This jurisdictional construct

46. *See* 116 FERC ¶ 61,062, at P 354 (holding that NERC's stakeholder Compliance and Certification Committee should monitor NERC's compliance with its Rules of Procedure); *see also NERC*, 119 FERC ¶ 61,248 at PP 36-37 (2007), *order on compliance filing*, 121 FERC ¶ 61,033 at P 2 (2007) (approving the original Compliance and Certification Committee charter).

47. 16 U.S.C. § 824o(b).

48. *Id.* § 824o(a)(1).

49. *See id*. § 824o(b).

requires some further explanation. While owners and operators of the bulk-power system may seem familiar to industry stakeholders — think transmission owners such as public utilities and operators such as regional transmission organizations — identifying who is a "user" of the bulk-power system is more enigmatic. Load serving entities? Generators? Marketers? And perhaps of more recent concern: large loads and distributed energy resource aggregators?

Upon enactment of EPAct 2005, not only was there uncertainty regarding *who* is jurisdictional under FPA section 215, questions arose regarding *what* assets and facilities are subject to the new reliability provisions. Congress, in FPA section 215, coined the new phrase "bulk-power system"; NERC, as a voluntary overseer of grid reliability for forty years, had employed a different phrase — bulk electric system.[50] While Congress defined the term bulk-power system, the statutory definition was quite broad brush, leaving ample room to question what is included and what is not. And the stakes were high considering that those entities deemed to be users, owners and operators of the bulk-power system must comply with reliability standards and are subject to potential monetary penalties exceeding one-million dollars per day per violation thereof.[51]

One reasonably clear provision excludes facilities used in local distribution from the definition of bulk-power system.[52] That language would maintain consistency with other provisions of the FPA that preserve the states' role of regulating local distribution.[53] But not so fast. While the statute excludes facilities used in local distribution from being treated as part of the bulk-power system, perhaps the owners or operators of local distribution facilities themselves are subject to FERC's FPA section 215 jurisdiction as *users* of the bulk-power system to which they are connected!

FERC, in Order No. 672, provided a modicum of clarity to these uncertainties.[54] While declining to define the phrase "User of the Bulk-Power System," FERC offered that "[g]enerally, a person directly connected to the Bulk-Power

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50. *See, e.g.*, *Additional Comments of the N. Am. Elec. Reliability Council Requesting Modification & Clarification*, FERC Docket No. RM02-1-000, at 1, 3-5, 9, 20, 26 (Aug. 27, 2002) (referring to "the reliability of the bulk electric system").

51. *See* Order No. 672, *supra* note 34, at P 575 (allowing the ERO to propose an "appropriate range of monetary penalties for violation of each Reliability Standard that is up to the cap of [section 316A of the FPA]" and explaining that this section establishes limits on monetary penalties for reliability standard violations that the Commission itself may impose); *see also* Bipartisan Budget Act of 2015, Pub. L. No. 114-74, § 701, 129 Stat. 584, 599 (2015) (The Federal Civil Penalties Inflation Adjustment Act requires the head of each Federal agency to issue a rule by July 2016 adjusting for inflation each civil monetary penalty within the agency's jurisdiction and making further inflation adjustments on an annual basis every January 15); Order No. 906, *Civil Monetary Penalty Inflation Adjustments,* 190 FERC ¶ 61,006 at P 8 (2025) (setting the maximum penalty at $1,584,648 per violation, per day). NERC last updated its sanction guidelines in 2021, which currently reflects a maximum daily penalty per violation of $1,291,894. *See NERC,* 174 FERC ¶ 61,030 at P 2 (2021) (approving the most recent version of NERC's sanction guidelines).

52. *See* 16 U.S.C. § 824o(a)(1) ("[t]he term [bulk-power system] does not include facilities used in the local distribution of electric energy").

53. *See, e.g.,* 16 U.S.C. § 824(b)(1); 16 U.S.C. § 824j-1 (excluding from provisions "facilities used in local distribution").

54. *See generally*, Order No. 672, *supra* note 34.

System selling, purchasing, or transmitting electric energy over the Bulk-Power System is a User of the Bulk-Power System."[55] Moreover, an "owner or operator of a local distribution facility" that is a "user" of the bulk-power system "must comply with all relevant Reliability Standards as a user."[56] In contrast, FERC noted that the phrase does not apply to "a customer that receives electric service at retail and does not otherwise directly receive, sell, purchase, or transmit power over the Bulk-Power System or own, operate or maintain, control or operate facilities or systems that are part of the Bulk-Power System."[57]

FERC offered the following explanation regarding whether and to what extent generators are included in the statutory definition of bulk-power system:

> Congress included in the definition of Bulk-Power System 'electric energy from generation facilities needed to maintain transmission system reliability.' If electric energy from a generating facility is needed to maintain a reliable transmission system, that facility is part of the Bulk-Power System with respect to the energy it generates that is needed to maintain reliability.[58]

FERC then reserved judgement on the scope of generators included in the new reliability jurisdiction until presented in the context of a proposed reliability standard.[59]

These jurisdictional and definitional quandaries came to a head in the Order No. 693 rulemaking proceeding in which FERC acted on an initial set of 107 reliability standards proposed by NERC as the ERO.[60] Order No. 693 discusses a variety of standards-related process and policy concerns, followed by a 400+ page review of each NERC-proposed reliability standard. In response to renewed requests to clarify the term user of the bulk-power system, FERC demurred, explaining that "we are concerned that any attempt to define the term at this time will either be overly broad so as not to provide any helpful guidance or overly narrow so as to exclude entities that should be covered."[61]

More problematic, FERC had proposed at the notice of proposed rulemaking stage in the Order No. 693 proceeding to expand on NERC's proposed definition of bulk electric system. NERC's proposed definition was in essence a 100 kV bright line threshold for transmission facilities with certain caveats. FERC proposed to expand the scope of the bulk electric system definition to include *inter*

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55. *Id.* at P 99; *see id.* (In a perhaps prescient call, FERC declined to adopt NERC's proposed definition of "user" out of concern that "a large industrial customer that receives electric energy directly from the Bulk-Power System may not be defined as a user of the Bulk-Power System, even though it may directly affect the reliability of the Bulk-Power System.").

56. *Id.* at P 100; *see id*. at P 100 n.18 (acknowledging that "[s]imilarly, an owner or operator of a generating facility may be a user of the Bulk-Power System without that facility necessarily being a part of the Bulk-Power System.").

57. *Id.* at P 98.

58. Order No. 672, *supra* note 34, at P 71.

59. *Id.*

60. Order No. 693, *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218 (2007), *on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

61. Order No. 693, *supra* note 60, at P 116.

alia "transmission to all significant local distribution systems (but not the distribution system itself)" and "transmission to load centers."[62] Among the protests received to this proposal were arguments that the proposal exceeded the "interconnected network" language of the statutory definition of bulk-power system, the undefined term load center created unacceptable uncertainty, and municipalities opined on the heavy burden of compliance that would result from sweeping in potentially hundreds of small entities that had little if any effect on grid reliability.[63] In all, protestors urged FERC to accept the NERC definition of bulk electric system and to find that there was no distinction between that term and the statutory phrase bulk-power system.

While a bit of a digression, this background is helpful to understand FERC's determinations in Order No. 693. First, FERC decided not to adopt its proposed changes to the NERC definition of bulk electric system, acknowledging that FERC's expansive approach could create uncertainty.[64] Second, FERC stated that, "for at least an initial period," it would "rely on the NERC definition of bulk electric system and NERC's registration process to provide as much certainty as possible regarding the applicability to and the responsibility of specific entities to comply with the Reliability Standards."[65] Third, FERC stated that the bulk-power system and bulk electric system are not one in the same; rather, FERC explained that "Bulk-Power System reaches farther than those facilities that are included in NERC's definition of the bulk electric system."[66] This determination is best understood in terms of concentric circles, with the bulk-power system as the outer circle representing the limit of FERC reliability jurisdiction and the bulk electric system with its general 100 kV threshold an inner circle defining the scope of transmission facilities and equipment that may be the subject of mandatory reliability standards. The question of what electric facilities lay between the two circles would remain to be resolved another day.

Returning to the second point above, FERC stated in Order No. 693 that it would look to NERC's registration process to provide as much certainty as possible regarding the responsibility of specific entities to comply with the reliability

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62. *Id.* at P 52; *see id.* at P 51 (The NERC-proposed definition of bulk electric system read "As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition."). In fact, this was a legacy term from NERC's decades as a voluntary overseer of grid reliability. NERC, however, proposed the definition as part of a "Glossary of Terms Used in Reliability Standards" that was submitted for Commission approval along with 107 reliability standards in the Order No. 693 proceeding, subjecting it to FERC review and approval. *See also id.* at P 1.

63. *See id.* at PP 55-74.

64. *Id.* at P 75.

65. *See* Order No. 693, *supra* note 60, at P 75 (footnote omitted). FERC had approved of the NERC compliance registry process, at least in concept, in the order certifying NERC as the ERO. *See* 116 FERC ¶ 61,062, at P 690; *see also id.* at P 692 (explaining that "[t]he registry will be considered informative but not dispositive of who is subject to the Commission jurisdiction for reliability purposes as this is a matter ultimately for the Commission to decide.").

66. Order No. 693, *supra* note 60, at P 76.

standards. For those not ensconced in the niche world of grid reliability, NERC had developed — and FERC approved[67] — NERC's Statement of Compliance Registry Criteria.[68] This document (1) identifies categories of transmission grid stakeholders based on their function, such as generator owner, generator operator, transmission owner, transmission operator, and balancing authority and (2) identifies thresholds for some functional categories, e.g., individual generator units operated above 20 MVA.[69] As a safeguard, the Registry Criteria includes a "materiality" provision, stating that "[a]ny entity reasonably deemed material to the reliability of the [Bulk-Power System] will be registered, irrespective of other considerations."[70] Additionally, each reliability standard has an "Applicability" provision that identifies which functional categories must comply with that standard.

The above approach resulted in a quite workable process by which NERC notifies an entity that it must comply with the mandatory reliability standards and one or more of the functional categories that apply to the entity. The entity then peruses the Applicability section of the mandatory standards to determine its particular obligations. Initially, NERC encouraged entities to voluntarily identify themselves and their functions. For others, NERC's Regional Entities sent letters informing stakeholders of the intent to register them and the applicable functional category(ies). NERC developed an internal appeals process (with appeals of appeals at FERC) for those disagreeing with their registration.[71] The number of registered entities has typically varied in the range of 1,200 to 1,400 over the years, with a recent spike of over 1,800 registrants attributable to a FERC-driven push to register owners and operators of inverter-based resources,[72] e.g., wind and solar generation.[73] All in all, this three-step approach remains today, with some refinements along the way, to be discussed shortly.

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67. 116 FERC ¶ 61,062, at P 689.

68. *See generally* NERC, RULES OF PROCEDURE, app. 5B (Nov. 28, 2023), https://www.nerc.com/AboutNERC/RulesOfProcedure/NERC%20ROP%20effective%2020240627_with%20appendicies_signed.pdf (Statement of Compliance Registry Criteria).

69. *Id.*

70. *Id*. app. 5B at 2.

71. *See* RULES OF PROCEDURE, *supra* note 68, § 504; *see also id.* app. 5A § VI. Since 2007, NERC and the Regional Entities have addressed approximately 35 registration appeals. *See, e.g.*, *Organization Registration and Organization Certification*, NERC, https://www.nerc.com/pa/comp/Pages/Registration.aspx (last visited Dec. 19, 2024) (providing decisions on registry appeals, organized by Regional Entity). Entities petitioned for FERC review of approximately 10 of these NERC registry decisions—almost all the FERC orders on review were issued during the period 2007 through 2013.

72. *See* NERC, ORGANIZATION REGISTRATION AND ORGANIZATION CERTIFICATION, https://www.nerc.com/pa/comp/Pages/Registration.aspx (last visited Apr. 20, 2025) (click "Compliance Registry Files", then click "NCR Active Entities List") [hereinafter NCR Active Entities List]. As required by the Commission and NERC's Rules of Procedure, NERC updates its registry on its website at least monthly. 116 FERC ¶ 61,062, at P 690; *see also* RULES OF PROCEDURE, *supra* note 68, § 501.1.5.

73. *See NERC*, 181 FERC ¶ 61,124 (2022) (directing NERC to develop a plan to identify and register owners and operators of inverter-based resources that are connected to the bulk-power system but not currently registered with NERC).

2. Refining the NERC Definition of Bulk Electric System

In June 2007, a blackout occurred in New York City, emanating from a lightning strike at or near a substation in the Astoria neighborhood of Queens. The disturbance at a 138 kV facility caused the loss of six 138 kV distribution lines and tripped five generators, resulting in a blackout that affected 137,000 customers.[74]

But were the 138 kV facilities correctly identified as distribution or were they transmission? Or perhaps something in the middle sometimes referred to as "subtransmission." Seemingly, the New York City facilities met the general 100 kV threshold set forth in NERC's definition of bulk electric system. But there was a catch. The NERC definition started with a caveat, "*[a]s defined by the Regional [Entity]*, the electrical generation resources, transmission lines, . . . and associated equipment, generally operated at voltages of 100 kV or higher."[75] NPCC, the Regional Entity for New York, New England, and extending into Eastern Canada, had supplemented the NERC definition of bulk electric system with additional criteria.[76] NPCC's regional criteria permitted the designation of the culprit 138 kV lines as distribution facilities, out of the reach from NERC and FERC reliability oversight. And it turned out that three other Regional Entities had their own variations of the NERC definition.

To rectify this inconsistent application and variation, FERC initiated a rulemaking and, in 2010, issued Order No. 743, directing NERC "to revise the [bulk electric system] definition to address the Commission's technical concerns . . . and ensure that the definition encompasses all facilities necessary for operating an interconnected electric transmission network."[77] While allowing NERC flexibility on how to approach the directed result, FERC offered:

> that the best way to accomplish these goals is to eliminate the regional discretion in the current definition, maintain a bright-line threshold that includes all facilities operated at or above 100 kV . . . , and establish an exemption process and criteria for excluding facilities that are not necessary for operating the interconnected transmission network.[78]

Regarding the status of the Astoria facilities that precipitated the rulemaking, FERC was not persuaded:

> that the 138 kV system in New York, and specifically the 138 kV system including those facilities in the Astoria area, are all distribution facilities. . . . because: the fa-

74. *See* Order No. 743, *Revision to Electric Reliability Organization Definition of Bulk Electric System,* 133 FERC ¶ 61,150 at P 57 (2010), *on clarification*, Order No. 743-A, 134 FERC ¶ 61,210 (2011).

75. Order No. 693, *supra* note 60, at P 75 n.47 (quoting NERC's definition of "bulk electric system) (emphasis added).

76. *See NERC*, 125 FERC ¶ 61,295 at PP 7-8 (2008) (directing NERC and NPCC to submit data regarding NPPC's facility classification system).

77. Order No. 743, *supra* note 74, at P 1.

78. *Id.* at i-ii.

> cilities are not primarily radial in character, as they are connected to the 345 kV network in the Astoria area at over six different points; the 138 kV system is networked amongst itself; power flows both in and out of the system.[79]

FERC also rejected arguments that the rulemaking was an unexpected departure from Order No. 693. FERC reminded readers, "[t]o the contrary, the Commission was very clear about its reservations in accepting the NERC bulk electric system definition in Order No. 693 and expressly accepted the definition for an 'initial period' subject to subsequent review."[80]

One rulemaking begets another rulemaking. NERC set to work with drafting teams and stakeholder votes and, in January 2012, delivered to FERC a revised definition of bulk electric system that eliminated the opportunity for regional discretion, preserved the general 100 kV threshold in a "core" definition,[81] and featured a set of five inclusions and four exclusions that override the core definition for various circumstances.[82] As one significant example, Inclusion I2 provides for the registration of generating resources connected at a voltage of 100 kV or above with either a gross individual nameplate rating above 20 MVA or a gross plant/facility nameplate rating greater than 75 MVA. As required by FERC in Order No. 743, NERC's submission included technical criteria to support an exemption process for entities with facilities that meet the bulk electric system definition but seek from NERC to exclude facilities that are not necessary for the reliable operation of the interconnected transmission network.

FERC, in Order No. 773, approved NERC's proposed revisions to the bulk electric system definition but directed two tweaks to the definition's exclusions; and approved NERC's exemption process. FERC rejected arguments presented by the National Association of Regulatory Utility Commissioners and others that the NERC proposal blurred the line between transmission and local distribution facilities and did not "reflect the statutory limits of the Commission's authority

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79. *Id*. at P 39; *see also id*. at P 38 (disagreeing with commenters "that appear to assert that the Commission's jurisdiction extends only to facilities that could, if improperly operated, singularly cause cascading outages, uncontrolled separation or instability" and noting that "[b]y this narrow metric, the facilities that caused the 2003 Blackout would not be viewed as critical . . . In defining jurisdictional facilities, section 215(a)(1) focuses on whether facilities are necessary to operate the interconnected transmission system, not solely on the consequences of unreliable operation of those facilities.").

80. *Id*. at P 41 (footnotes omitted).

81. NERC, GLOSSARY OF TERMS USED IN NERC RELIABILITY STANDARDS, https://www.nerc.com/pa/stand/glossary%20of%20terms/glossary_of_terms.pdf (last updated Feb. 26, 2025) [hereinafter GLOSSARY OF TERMS] (NERC's revised core definition, which remains intact today, reads as follows: "Unless modified by the [inclusion and exclusion] 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."). While recitation of the nine inclusions and exclusions is too extensive for a footnote, the complete (and up-to-date) definition is available at the source above.

82. *See generally Petition of the NERC for Approval of a Revised Definition of "Bulk Electric System" in the NERC Glossary of Terms*, FERC Docket No. RM12-6-000 (Jan. 25, 2012); *see also* Order No. 773, *Revisions to [ERO] Definition of [BES] and Rules of Procedure*, 141 FERC ¶ 61,236 at P 11-22 (2012), *on reh'g*, Order No. 773-A, 143 FERC ¶ 61,053 (2013), *aff'd.*, New York v. FERC, 783 F.3d 946 (2d Cir. 2015).

under [FPA] Section 215."[83] Rather, FERC determined that "NERC's 'core' definition of bulk electric system definition, together with exclusion E3 (local networks), is consistent with the section 215 exclusion of local distribution facilities."[84] In a nod to concerns that NERC should not call jurisdictional balls and strikes, Order No. 773 sided with commenters that FERC would decide whether facilities are used in local distribution. FERC explained that, while NERC would entertain petitions on the application of whether facilities satisfied the bulk electric system definition, FERC would receive applications on the jurisdictional question of whether facilities are used in local distribution.[85] In making such determinations, FERC would apply the Seven Factor Test, used by FERC in other contexts, albeit with an emphasis that "the Commission will consider other factors that should be taken into account in particular situations."[86]

In one of the few appellate reviews of any aspect of FERC's FPA section 215 reliability authority, the Second Circuit, in *People of the State of New York v. FERC*, found that FERC's approval of NERC's modified bulk electric system definition was a reasonable interpretation of FERC's statutory grant.[87] Applying *Chevron* deference,[88] the court rejected arguments that FERC unreasonably construed its statutory jurisdiction by "using an operating voltage threshold that sweeps into the national bulk electric system some exempt facilities engaged in local distribution."[89] Rather, the court noted that "the 100 kV threshold is used only to set a preliminary jurisdictional boundary, which is always subject to generally applicable adjustments and, upon request, to individualized ones."[90] Based on this understanding, the court concluded that "FERC did not act unreasonably in including such a threshold within a larger scheme of standards and procedures for clarifying its statutory jurisdiction."[91]

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83. Order No. 773, *supra* note 82, at P 61.

84. *Id*. at P 66.

85. *Id*. at PP 69-70; *see id.* at PP 285-86 (FERC also indicated that it possessed "the authority to designate facilities as an element of the bulk electric system," independent of NERC). To date, FERC has not exercised this authority.

86. *Id.* at P 71 (citing Order No. 888, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, FERC STATS. & REGS. ¶ 31,036 at 31,771, 31,783-84 (1996), *order on reh'g*, Order No. 888-A, FERC STATS. & REGS. ¶ 31,048, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom.* Transmission Access Pol'y Study Grp. v. FERC, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom.* New York v. FERC, 535 U.S. 1 (2002)).

87. *New York*, 783 F.3d at 959-60. Two other appellate decisions reviewed aspects of the Commission's FPA section 215 reliability authority. *See, e.g.*, *Alcoa Inc.*, 564 F.3d at 1348 (upholding NERC's method for allocating ERO costs to end users); Sw. Power Admin. v. FERC, 763 F.3d 27, 33-36 (D.C. Cir. 2014) (finding FPA section 215 does not waive sovereign immunity).

88. *See generally* Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 104 S.Ct. 2778 (1984); *overruled by* Loper Bright Enters. v. Raimondo, 144 S. Ct. 2244 (2024).

89. *New York*, 783 F.3d at 953.

90. *Id.* at 955.

91. *Id*.

The aftermath of the Order No. 743 and Order No. 773 proceedings to revise NERC's bulk electric system definition may be best summarized as incremental change. Some predicted — and NERC braced itself for — a slew of exemption requests and a significant reshuffling of facilities and entities that were in or out of the reliability program.[92] However, the avalanche of requests never occurred. Only a handful of entities petitioned NERC to exclude facilities from the bulk electric system,[93] and only one entity petitioned FERC for a determination whether certain facilities were excluded as local distribution.[94] Order No. 773 provided about a decade of stability with no significant actions or petitions that challenged FERC's FPA section 215 reliability jurisdiction.

3. The Changing Resource Mix and Refinements to Address Inverter-Based Resources

The changing resource mix — in broad terms understood as the increased adoption of renewable energy resources — poses opportunities for and challenges to the reliable operation of the bulk-power system. These challenges, in turn, raise questions about the reach of FERC's reliability jurisdiction as delineated in FPA section 215. The first jurisdictional issue relating to the changing resource mix that FERC has grappled with pertains to the reliability impacts of inverter-based resources.[95]

Beginning in 2022, FERC issued a series of orders addressing the reliability impacts of inverter-based resources. FERC concerns focused on the need for inverter-based resources to ride-through minor system disturbances and the provision of accurate data regarding inverter-based resources to system operators and planners. NERC had issued several reports on events that were caused or exacerbated by inverter-based resources either tripping or failing to inject energy as a result of a system disturbance that other resources are capable of riding through. NERC also issued voluntary guidance documents intended to mitigate these risks. Based on concerns that voluntary mitigation efforts were inadequate and NERC standards development on the matter were neither timely nor comprehensive, FERC, in Order No. 901, determined that the mandatory reliability standards

92. FERC, however, indicated that it did not anticipate a major reshuffle. *See* Order No. 773, *supra* note 82, at P 55 ("[w]e do not expect there to be significant numbers of entities either needing to register or deregister due to the change in definition.").

93. *See* NERC, BULK ELECTRIC SYSTEM (BES) NOTIFICATION AND EXCEPTION PROCESSES STATISTICS SINCE INCEPTION (JULY 1, 2014), at 2 (July 15, 2017) https://www.nerc.com/pa/RAPA/BES%20DL/BES_Notification_and_Exception_Statistics_07152017.pdf (NERC approved a total of six exception requests for exclusion and thirty-six requests for inclusion).

94. *SoCal Edison Co.*, 153 FERC ¶ 61,384 (2015) (applying the case-by-case process set forth in Order No. 773, the Commission granted in part and denied in part a requested finding that SoCal Ed facilities are "used in local distribution of electric energy" pursuant to FPA section 215).

95. Examples of inverter-based resources are solar PV, wind, fuel cells, and battery storage produce real and reactive power. *See, e.g., Registration of Inverter-Based Resources*, 181 FERC ¶ 61,124 at P 1 n.1 (2022) (FERC has explained that the term includes " . . . all generating facilities that connect to the electric power system using power electronic devices that change direct current (DC) power produced by a resource to alternating current (AC) power compatible with distribution and transmission systems.").

needed updating to address operational performance, modeling and planning, and information sharing concerns related to inverter-based resources.[96] Moreover, because a significant share of inverter-based resources did not meet the bulk electric system core definition or "Inclusion" criteria and therefore were not subject to compliance with reliability standards, FERC recognized the need for changes to bring inverter-based resources into the fold of the reliability regime.[97]

In succession, FERC issued orders: (1) directing NERC to submit a plan explaining how it would "identify and register owners and operators of [inverter-based resources] that are connected to the Bulk-Power System, but are not currently required to register with NERC under the bulk electric system (BES) definition . . . that have an aggregate, material impact on the reliable operation of the Bulk-Power System";[98] (2) approving NERC's plan;[99] and (3) approving NERC's revised Registry Criteria that created new categories for owners (Category 2 GOs) and operators (Category 2 GOPs) of inverter-based resources.[100] For those inverter-based resources that would not qualify to be registered under the existing thresholds for generator owners and operators,[101] NERC would now register them under a new threshold for inverter-based resources — Category 2 GO and GOP — that "have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV."[102] NERC estimated that the new threshold would "result in approximately 97.5 percent of Bulk-Power System [inverter-based resources] being subject to NERC registration and compliance with applicable Reliability Standards."[103]

There are several aspects to FERC's orders worth highlighting. First, FERC acted proactively using its authority *sua sponte* to address the ongoing concerns with inverter-based resources. While couched in polite language, FERC recognized NERC's ongoing efforts on the same topic but indicated that NERC's activities were not sufficiently timely and comprehensive, compelling FERC to assert

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96. *See generally* Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, 185 FERC ¶ 61,042 (2023).

97. As mentioned above, NERC's bulk electric system definition Inclusion I2 provides for the registration of generating resources connected at a voltage of 100 kV or above with either a gross individual nameplate rating above 20 MVA or a gross plant/facility nameplate rating greater than 75 MVA. *See* Order No. 773, *supra* note 82, at P 12. Similar criteria pertain to dispersed power producing resources under Inclusion I4. *Id.* at P 13.

98. 181 FERC ¶ 61,124, at P 1 (footnotes omitted).

99. *NERC*, 183 FERC ¶ 61,116 (2023).

100. *NERC*, 187 FERC ¶ 61,196 (2024).

101. GLOSSARY OF TERMS, *supra* note 81, at 7 (Most relevant is the bulk electric system definition, Inclusion I4 that provides, "[d]ispersed power producing resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and that are connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage of 100 kV or above."). The purpose of this provision is to clearly include variable generation such as wind and solar resources. *See* Order No. 773, *supra* note 77, at P 115.

102. RULES OF PROCEDURE, *supra* note 68, app. 5B, at 3; *see also* 187 FERC ¶ 61,196, at P 13.

103. 187 FERC ¶ 61,196, at P 27.

itself with directives on registration and reliability standards development.[104] Yet the action fell short of a FERC override, leaving to NERC both the process for developing revisions and the substance of those revisions, i.e., the 20 MVA aggregate nameplate threshold and 60 kV common point of connection.

In directing NERC to address the registration of inverter-based resources, FERC focused on the aggregate impact of inverter-based resources on the reliability of the bulk-power system. The 2022 order initiating the NERC action explained in detail the reliability concerns of inverter-based resources tripping offline in unison, or at times remaining connected to the electric grid but ceasing to inject power (known as momentary cessation), which in aggregate have a material impact on the reliable operation of the bulk-power system.[105] FERC recognized that the NERC Registry Criteria included a "materiality" provision that allowed for the registration of entities that did not meet the bulk electric system definition but were nonetheless demonstrated to be material to grid reliability. This provision, however, applied only to individual entities and there was meager precedent for applying this provision to multiple entities or resources based on aggregate impact.[106] FERC nonetheless regarded the reliability concern as so compelling that it found "that unregistered [inverter-based resources] connected to the Bulk-Power System, regardless of size and transmission or sub-transmission voltage, that in the aggregate have a material impact on Bulk-Power System performance should be registered."[107] Ultimately, few commenters challenged the FERC finding, primarily arguing whether the factual record supported an aggregated approach. FERC disposed of such arguments, citing to relevant NERC event reports, the rapid growth of inverter-based resources connected to the bulk-power system, and the need to prepare for such change in regions where inverter-based resource saturation has yet to occur but is reasonably anticipated in the future.[108]

Finally, FERC was careful to articulate that its registration plan directive pertained only to inverter-based resources connected to the bulk-power system, and not those connected to the distribution system.[109] NERC also made clear that its revisions to the Statement of Compliance Registry Criteria did not address inverter-based resources connected to the distribution system.[110] Commenters argued that, despite NERC's assurances, the new criteria did not expressly exclude

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104. *See* 181 FERC ¶ 61,124, at P 20 ("[w]e are issuing this order to ensure that timely action is taken to address the reliability challenges presented by IBRs . . . ."); *see also* Order No. 901, *supra* note 96, at P 25 (after recounting inverter-based resource projects by NERC and other groups, FERC opined on "the absence of a comprehensive plan to require that the increasing numbers of IBRs are reliably interconnected, planned for, and operated . . . .").

105. 181 FERC ¶ 61,124, at PP 5-7, 25-27.

106. *Id.* at PP 4, 27; *cf.* 183 FERC ¶ 61,116, at P 36 (finding supportive precedent for aggregation in *Risk-Based Registration Order*, 150 FERC ¶ 61,213 at P 68 (2015)).

107. 181 FERC ¶ 61,124, at P 32.

108. 187 FERC ¶ 61,196, at PP 37-38.

109. 183 FERC ¶ 61,116, at P 1 n.1 (stating that the order does not address IBRs connected to the distribution system).

110. 187 FERC ¶ 61,196, at P 26.

inverter-based resources connected to the distribution system and that the 60 kV connection (lowered from 100 kV in the then existing generator owner and operator thresholds) could result in the registration of some distribution level facilities contrary to FERC precedent and the express language of the bulk electric system definition.[111] FERC sided with NERC, explaining that NERC provided:

> a detailed explanation of the analysis that it conducted to support the proposed [inverter-based resource] registration thresholds, determining that "a 60 kV threshold was appropriate, because it would ensure that non-[bulk electric system] [inverter-based resources] which are material to [bulk electric system] reliability are subject to registration while excluding [inverter-based resources] that are a part of the distribution system."[112]

All in all, while pushing NERC to proceed with registering more inverter-based resources, FERC also played it safe. While issuing directives to achieve a reliability goal, FERC relied on NERC as the ERO to develop an appropriate approach (subject of course to FERC approval). Further, while adopting the novel approach of looking at aggregated impacts of a group of resources on grid reliability, FERC did so in a measured way and with compelling factual support based on at least a dozen NERC event reports demonstrating that the aggregate response of inverter-based resources to a single normally cleared fault results in tripping and/or momentary cessation. Now that FERC has set the precedent, it is reasonable to anticipate further application of the aggregate impact approach to address reliability concerns, especially in light of the changing resource mix that trends towards smaller, dispersed resources.

Moreover, from the get-go, FERC took off the table any consideration of registering inverter-based resources connected at the distribution level. But note that FERC never ruled out the possibility, either. Coming full circle, we can now better appreciate some of FERC's statements in Order No. 672. As stated above, FERC declined to define the phrase "user of the bulk-power system" in Order No. 672, while explaining that the phrase "generally" applied to "a person directly connected to the Bulk-Power System selling, purchasing, or transmitting electric energy over the Bulk-Power System is a User of the Bulk-Power System."[113] But FERC continued that an owner or operator of a local distribution facility that is a "user" of the bulk-power system "must comply with all relevant Reliability Standards as a user"[114] and "[s]imilarly, an owner or operator of a generating facility may be a user of the Bulk-Power System without that facility necessarily being a part of the Bulk-Power System."[115]

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111. *Id.* at PP 49, 51.

112. *Id.* at P 54 (quoting *NERC*, FERC Docket No. RD22-4-000, at 19 (Mar. 19, 2024)). The Commission also noted that an entity could challenge a registration if it believes that it should be excluded as local distribution. *Id.*

113. Order No. 672, *supra* note 34, at P 99.

114. *Id*. at P 100.

115. *Id*. at P 100 n.18.

4. The Future . . . Is Almost Here

This precedent provides some insight into how FERC may seek to address future challenges to the reliability of the bulk-power system. For example, recall that the statutory definition of bulk-power system includes the clause "electric energy from generation facilities needed to maintain transmission system reliability."[116] Moving forward, a reasonable argument could be made that all sources of electric energy, regardless of their location, are subject to FPA section 215 jurisdiction if that energy enters the interconnected transmission system and is needed to maintain system reliability. This rationale could potentially apply not only to generation connected at the distribution level, but also to aggregators of such energy, offshore wind generators, generators serving large load and even the large load itself.[117]

Consistent with the statutory definition of bulk-power system, FERC would need to demonstrate that electric energy from these sources is not only injected into the transmission system but also in sufficient quantity so that it is "needed to maintain transmission system reliability."[118] Like the assertion of authority for inverter-based resources, however, FERC would need a supportive record that demonstrates specific reliability challenges and the need to assert authority to address those challenges.

B. Reliability Standards Development

The development of mandatory and enforceable reliability standards is a fundamental responsibility of the ERO. Likewise, review and approval of proposed standards sits at the heart of the ERO's statutory mandate under section 215 of the FPA. As evidenced by FERC's early reliability orders after enactment of EPAct 2005, transforming NERC's voluntary criteria into mandatory standards required careful calibration between preserving valuable technical expertise and ensuring robust federal oversight. Through its orders, FERC has crafted a framework that balanced the need for clear, enforceable standards with the statutory mandate to give "due weight" to the ERO's technical expertise.[119]

In the aftermath of the 2003 Northeast Blackout, a primary focus of regulators and industry was to address the common causal factors of cascading outages as delineated in the recommendations from a postmortem report on the blackout.[120] The Final Report on the August 14, 2003 Blackout found that ineffective vegetation management, i.e., trees growing or falling into transmission lines, was a causal

116. 16 U.S.C. § 824o(a)(1)(B).

117. *Cf.* Order No. 706, *Mandatory Reliability Standards for Critical Infrastructure Protection*, 122 FERC ¶ 61,040 at P 51 (2008) (" . . . we believe that NERC should register demand side aggregators if the loss of their load shedding capability, for reasons such as a cyber incident, would affect the reliability or operability of the [BPS] . . .. We agree with [commenters] that NERC should consider whether there is a current need to register demand side aggregators and, if so, to address any related issues and develop criteria for their registration.").

118. 16 U.S.C. § 824o(a)(1)(B).

119. 16 U.S.C. § 824o(d)(2).

120. *See* FINAL REPORT ON THE AUGUST 14, 2003 BLACKOUT, *supra* note 28, at 140. Recommendation number 1 was to convert NERC and its reliability standards from a voluntary to a mandatory program. *Id.*

factor of the 2003 Northeast Blackout and other major blackouts over the preceding decade.[121] Moreover, local outages caused by tree contact-related outages were exacerbated by transmission operators' insufficient awareness of system conditions, i.e., alarms and other tools, and inadequate training to timely react to system disturbances and communicate with neighboring system operators.[122] Some pithily summed up these reliability concerns as the "three Ts" — trees, tools, and training.[123]

These common causal factors of blackouts are now addressed in mandatory reliability standards. As one example, facilities design, connections, and maintenance (FAC) Reliability Standard FAC-003-5 (Transmission Vegetation Management) requires transmission owners to apply a "defense-in-depth strategy to manage vegetation" located on and adjacent to transmission rights-of-way.[124] While vegetation incidents have occurred over the past twenty years, none have resulted in cascading outages.[125] Whether due to the effectiveness of the mandatory standards or sheer luck, cascading outages resulting from the pre-EPAct 2005 common causal factors have been rare. Two major outages occurred in 2008 (Florida blackout) and 2011 (Southwest blackout).[126] While the initiating causes pertained to human errors and did not involve vegetation, postmortem reports indicated that

121. *Id*. at 139, 154.

122. *Id.* at 194 (An appendix reproduced a NERC report on the 2003 blackout that concluded that "Problems identified in studies of prior large-scale blackouts were repeated, including deficiencies in vegetation management, operator training, and tools to help operators better visualize system conditions.").

123. *See, e.g.*, J.R. Minkel, *The 2003 Northeast Blackout — Five Years Later*, SCI. AM. (Aug 13, 2008), https://www.scientificamerican.com/article/2003-blackout-five-years-later/; David W. Hilt, *August 14, 2003, Northeast Blackout Impacts and Actions and the Energy Policy Act of 2005*, NERC 6 (Aug. 2006), https://www.nerc.com/pa/rrm/ea/August%2014%202003%20Blackout%20Investigation%20DL/ISPE%20Annual%20Conf%20-%20August%2014%20Blackout%20EPA%20of%202005.pdf.

124. NERC, FAC-003-5, TRANSMISSION VEGETATION MANAGEMENT 1 (Mar. 4, 2022), https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-5.pdf; *see also* NERC, UNITED STATES — MANDATORY STANDARDS SUBJECT TO ENFORCEMENT, https://www.nerc.com/pa/Stand/AlignRep/Mandatory%20Standards%20Subject%20to%20Enforcement.xlsx (last Apr. 20, 2025) (explaining NERC's COM (communications) and PER (personnel performance, training, and qualifications) standards).

125. The most severe vegetation-related outage occurred in 2007, which resulted in a loss of 270 MW of firm load. While approximately 40,000 customers lost power, the outage was contained to the immediate system and one neighboring system. *See NERC*, 134 FERC ¶ 61,209 at P 4 (2011), *order on reh'g and clarification*, 139 FERC ¶ 61,248 (2012). NERC keeps annual statistics on vegetation-related incidents. *See, e.g.*, NERC, CMEP AND VEGETATION REPORTS, https://www.nerc.com/pa/comp/CE/Pages/CMEP%20and%20Vegetation%20Reports.aspx (last visited Apr. 20, 2025).

126. *See Florida Blackout*, 129 FERC ¶ 61,016 (2009) (approving consent agreement between NERC, FERC, and Fla. Power & Light Co. with FPL agreeing to pay a $25 million civil penalty to resolve possible violations of reliability standards associated with a load loss event in Florida on February 26, 2008); *see also* FERC & NERC, ARIZONA-SOUTHERN CALIFORNIA OUTAGES ON SEPTEMBER 8, 2011 — CAUSES AND RECOMMENDATIONS (2012), https://www.nerc.com/pa/rrm/ea/September%202011%20Southwest%20Blackout%20Event%20Document%20L/AZOutage_Report_01MAY12.pdf [hereinafter ARIZONA-SOUTHERN CALIFORNIA OUTAGES].

the 2008 and 2011 blackouts resulted in part from lack of situational awareness, i.e., tools, a commonality with early cascading outages.[127]

Yet, different challenges have emerged that bring new threats to bulk-power system reliability. Both FERC and NERC have identified extreme weather and the changing resource mix as top reliability priorities that need to be addressed in new and modified reliability standards.[128] NERC must update standards — developed when the grid primarily relied on fossil fuel generation — to account for the rapid growth of variable energy resources that have different operational and reliability characteristics than fossil fuel generation. Other top priorities, cyber and physical security, while the subject of critical infrastructure protection (CIP) standards, are dynamic and require ongoing adjustment to reflect the evolving threats posed by various adversaries relentlessly seeking to compromise the nation's critical infrastructure.

As discussed below, the need to timely address emerging reliability challenges has resulted in a sense of urgency for NERC to update and improve its standards development process. As the substance of reliability standards evolves, the process used in the development of those standards needs to keep pace to assure that NERC, FERC, and industry are up to the task of moving swiftly to assure continued grid reliability under rapidly changing circumstances.

To understand the ongoing dynamics and evolution of the ERO standards program, it is first necessary to understand the statutory framework for reliability standards development.

1. Standards Development — The Statutory Scheme

Section 215(a)(3) of the FPA defines "reliability standard" as follows:

> [A] requirement, approved by the Commission under this section, to provide for reliable operation of the bulk-power system. The term includes requirements for the operation of existing bulk-power system facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for reliable operation of the bulk-power system, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.[129]

Pursuant to the statute, the certified ERO must have the ability to "develop and enforce . . . reliability standards that provide for an adequate level of reliability

127. 129 FERC ¶ 61,016, at P 7 (the "Engineer did not notify the Load Dispatcher on duty in the FPL control center that he had disabled the second level of protection and neither the System Operator on duty in the FPL Control Center nor the [Reliability Coordinator] were aware that any protection had been disabled."); ARIZONA-SOUTHERN CALIFORNIA OUTAGES, *supra* note 126, at 5 (the 2011 blackout "stemmed primarily from weaknesses in two broad areas — operations planning and real-time situational awareness. . . .").

128. *See, e.g.*, FERC, 2023 RELIABILITY REPORT (Nov. 8, 2023), https://www.ferc.gov/media/2023-reliability-report; NERC, 2024 WORK PLAN PRIORITIES (Dec. 12, 2023), https://www.nerc.com/AboutNERC/StrategicDocuments/2024%20Work%20Plan%20Priorities%20(Approved%20December%2012,%202023).pdf.

129. 16 U.S.C. § 824o(a)(3).

of the bulk-power system."[130] Moreover, the ERO must establish rules that "provide for reasonable notice and opportunity for public comment, due process, openness, and balance of interests in developing reliability standards and otherwise exercising its duties."[131] Once developed, the ERO must file a proposed new or modified reliability standard with FERC for approval.[132]

Upon receipt of an ERO petition, FERC "may approve, by rule or order, a proposed reliability standard or modification . . . if it determines that the standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest."[133] The same provision continues that "[t]he Commission shall give due weight to the technical expertise of the [ERO] with respect to the content of a proposed standard . . . but shall not defer with respect to the effect of a standard on competition."[134] Reliability standards proposed by the ERO take effect only after FERC approval. However, if FERC disapproves of a proposed standard, "in whole or in part," FERC must remand the standard to the ERO "for further consideration."[135]

The above statutory provisions give FERC a thumbs up or thumbs down role, requiring that the ERO pen any language of reliability standards both initially and at the back end to "cure" a remand. The statute, however, does provide a proactive role for FERC in FPA section 215(d)(5):

> The Commission, upon its own motion or upon complaint, may order the [ERO] to submit to the Commission a proposed reliability standard or a modification to a reliability standard that addresses a specific matter if the Commission considers such a new or modified reliability standard appropriate to carry out this section.[136]

Under this provision, FERC does not dictate the language of a reliability standard but, rather, tasks the ERO to address FERC's reliability concern.[137] This provision has in fact played an out-sized role based on FERC's frequent exercise of its authority under FPA section 215(d)(5), as discussed further below.

While not explicit in the statute,[138] FERC's regulations provide that FERC can set a deadline for the ERO to submit a new or modified reliability standard when responding to either a FERC remand or directive under section 215(d)(5) to

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130. *Id*. § 824o(c)(1).

131. *Id.* § 824o(c)(2)(D).

132. *Id.* § 824o(d)(1).

133. 16 U.S.C. § 824o(d)(2).

134. *Id*.

135. *Id*. § 824o(d)(4).

136. *Id*. § 8240(d)(5)

137. *See* Order No. 672, *supra* note 34, at P 424 (explaining that on remand, "the Commission cannot change the Reliability Standard and must send the Reliability Standard to the ERO for modification"); Order No. 672-A, *supra* note 34, at P 34 (when remanding, FERC does not intend to prescribe the "text or substance" of a standard).

138. *See* Order No. 672, *supra* note 34, at P 408 (procedural tools such as deadlines for submitting standards, "while not specified in detail in new section 215 of the FPA, are both necessary and fully consistent with the authorities expressly granted to the Commission by statute"); *id*. at P 411 (referencing Commission authority to remand a standard together with authority under section 215(e)(5) as source for setting a deadline).

address a specific reliability matter.[139] FERC has explained that deadlines for submitting a new or modified reliability standard must be reasonable and cannot preclude a stakeholder process required by FPA section 215(c)(2).[140]

2. Kicking the Tires on Standards Development, circa 2006 to 2009

a. Order No. 672

As mentioned earlier, in 2006, FERC issued a statutorily required final rule — Order No. 672 — explaining how FERC would implement the new reliability authority.[141] The final rule elaborated on a number of key concerns and questions regarding reliability standards development.

With regard to NERC process, recall that the statute requires that the ERO's standards development process must "provide for reasonable notice and opportunity for public comment, due process, openness, and balance of interests."[142] FERC, in Order No. 672, explained that an American National Standards Institute (ANSI)-accredited process "is one reasonable means" of satisfying the statutory provision.[143] Yet FERC also expressed apprehension about the ability of an ANSI process to timely produce reliability standards.[144] Further, FERC rejected the suggestion that a reliability standard developed pursuant to an ANSI process deserves a rebuttable presumption of acceptance upon FERC review.[145]

Regarding FERC review of a NERC petition for approval of a proposed reliability standard, Order No. 672 expounded on several issues. The statutory standard for FERC approval of a reliability standard — just, reasonable, not unduly discriminatory or preferential, and in the public interest — reads as a conglomerate of pre-existing FPA standards of review, none of which pertained to reliability.[146] FERC recognized the need to provide some clarity on how it would apply this

139. 18 C.F.R. § 39.5(g). Other than the deadline provision, the Commission's regulations pertaining to Reliability Standards development hew closely to the statutory text. *See id.* § 39.5.

140. Order No. 693-A, *supra* note 60, at PP 59-60.

141. *See* 16 U.S.C. § 824o(b)(2) (requiring FERC to issue a final rule implementing the requirements of section 215 within 180 after the date of enactment). Section 215(d)(6) is the only statutory provision identifying a specific matter for FERC to address in the required rulemaking. *See, e.g.*, *id.* § 824o(d)(6) (requiring FERC's rulemaking "include fair processes for the identification and timely resolution of any conflict between a reliability standard and any function, rule, order, tariff, rate schedule, or agreement accepted, approved, or ordered by the Commission applicable to a transmission organization."). FERC dutifully developed a fair process, which has never been utilized!

142. *Id.* § 824o(c)(2)(D).

143. Order No. 672, *supra* note 34, at P 39.

144. *Id*. at P 269.

145. *Id*. at P 338 ("[w]e reject the notion that we should presume that a proposed Reliability Standard developed through an ANSI-certified process automatically satisfies the statutory standard of review").

146. *See, e.g.*, 16 U.S.C. § 824b (FPA section 203 applies "public interest" standard in determining proper disposition of property); *id.* § 824a-3 (FPA section 210 applies "public interest" review for certain interconnection requests); *id.* § 824d(a) (FPA section 205(a) requires that public utility rates and charges must be "just and reasonable"); *id.* § 824e(a) (under FPA section 206, Commission determines whether a rate or charge is "unjust, unreasonable, unduly discriminatory or preferential").

legal standard, yet declined to specify a definitive test or criteria; instead offering "general guidance" on FERC's approach to reviewing a proposed reliability standard.[147] Much of the guidance was straightforward, if not obvious. For example, FERC opined that a proposed reliability standard: "must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal";[148] "should be clear and unambiguous regarding what is required and who is required to comply";[149] and should provide "a clear criterion or measure of whether an entity is in compliance."[150]

Other guidance set expectations about the substantive quality of a proposed standard, e.g., a proposed standard need not necessarily "reflect the optimal method, or 'best practice,' for achieving its reliability goal" but should "achieve its reliability goal effectively and efficiently."[151] Moreover, in what could be read as a not-so-subtle warning, Order No. 672 exhorted that a proposed standard must "not simply reflect a compromise . . . based on the least effective North American practice — the so-called 'lowest common denominator' — if such practice does not adequately protect Bulk-Power System reliability."[152] Moreover, it added, while cost of compliance is a legitimate consideration, cost should not drive down the quality of standards to the lowest common denominator.[153] FERC tasked the ERO to address the guidance factors when submitting a petition for approval of a proposed standard, which NERC as the ERO has consistently provided.[154]

In Order No. 672, FERC also offered its understanding of the statutory provision requiring that FERC give "due weight to the technical expertise of the [ERO] with respect to the content of a proposed standard."[155] FERC explained that "due weight" does not equate to a rebuttable presumption.[156] Rather, the ERO "must justify to the Commission" that a proposed standard or modification meets the statutory criteria for approval.[157] We will return to this subject, as acrimony developed whether FERC sufficiently minded the due weight provision.

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147. *See* Order No. 672, *supra* note 34, at P 320; *see also id*. at P 323 ("general factors" for consideration).

148. *Id.* at P 324.

149. *Id.* at P 325.

150. *Id.* at P 327.

151. *See* Order No. 672, *supra* note 34, at P 328; *see also* Order No. 743-A, *supra* note 74, at P 16 (clarifying that "whether a proposed Reliability Standard provides for an adequate level of reliability is included in the factors used in determining whether the proposal is just and reasonable, but it is not the standard of review.").

152. Order No. 672, *supra* note 34, at P 329.

153. *Id.* at P 330; *see id*. at PP 320–37 (for FERC's full guidance on review of reliability standards).

154. NERC includes exhibits to each of its filed proposed reliability standards identifying and explaining how the proposed reliability standards meet or exceed the criteria outlined in Order No. 672. *See, e.g., Petition of the NERC for Approval of Proposed Reliability Standards BAL-007-1 and TOP-003-7,* FERC Docket No. RD25-5-000, Exhibit C (Order No. 672 Criteria) (Jan. 6, 2025).

155. 16 U.S.C. § 824o(d)(2).

156. Order No. 672, *supra* note 34, at P 345.

157. *Id.*

b. Order No. 693 and the First Round(s) of Reliability Standards

As mentioned above, FERC in Order No. 693 acted on an initial set of 107 reliability standards proposed by NERC as the ERO and provided general guidance on various matters.[158] Of note, FERC identified four options when presented with a petition to review a proposed reliability standard: "(1) approve; (2) approve as mandatory and enforceable; and direct modification pursuant to [FPA] section 215(d)(5); (3) request additional information; or (4) remand."[159] In response to a commenter challenging the legality of the second option (which the commenter characterized as an "approve but modify," i.e., a conditional acceptance option not provided in the statute), FERC explained that it was taking "two independent actions, both authorized by the statute."[160] Namely, FERC first approves the proposed standard and then, as a separate action, directs the ERO to modify the same standard to address one or more specific issues or concerns identified by FERC, per section 215(d)(5). Under this approach, the approved reliability standard takes effect while NERC convenes a standard drafting team to address the FERC directives.

More to the bottom line, FERC, in Order No. 693, approved 83 of the 107 proposed standards. FERC did not remand any standards but, rather, pended the remaining twenty-four standards until NERC provided additional information. Of the eighty-three approved standards, FERC explained that "many of these Reliability Standards require significant improvement" and FERC exercised its authority under FPA section 215(d)(5) to direct that NERC develop modifications to fifty-six of the approved standards.[161] Often identifying multiple concerns for each of the fifty-six standards, FERC issued over 330 detailed directives in Order No. 693 for NERC to develop modifications.

To address (but not necessarily mollify) concerns that FERC's approach was "overly prescriptive" — a recurring theme of industry commenters over the several years following Order No. 693[162] — FERC explained that the intent of its detailed directives was to "provide sufficient guidance so that the ERO has an understanding of the Commission's concerns and an appropriate, but not necessarily exclusive, outcome to address those concerns" and not to "preclude the consideration of viable alternatives in the ERO's Reliability Standards development process."[163] The final rule gave leeway for NERC as the ERO to develop "an equivalent alternative" so long as NERC provided "adequate support that fully

158. *See generally* Order No. 693, *supra* note 60. This article explores the legal precedent pertaining to the ERO and not the content of particular reliability standards. *Id.* For interested readers, FERC's *Reliability Primer* provides a laymen's overview of the mandatory reliability standards. *See, e.g.,* FERC, RELIABILITY PRIMER 57-66 (Sept. 20, 2024), https://www.ferc.gov/media/reliability-primer-0.

159. Order No. 693, *supra* note 60, at P 184.

160. *Id.*

161. *Id.* at P 1.

162. *See* Order No. 743, *supra* note 74, at P 34 (acknowledging that commenters raised concerns about the Commission's prescriptive approach, but reiterating the need for some guidance).

163. Order No. 693, *supra* note 60, at P 185.

explains how the alternative produces a result that is as effective as or more effective than the Commission's example or directive."[164]

Subsequent to Order No. 693, when reviewing NERC petitions for approval of proposed reliability standards, FERC continued a similar course of action. FERC rarely remanded a standard but often elected "option 2," i.e., approving and, separately, directing modifications. In total to date, FERC has remanded three proposed new or modified standards, three proposed NERC interpretations of standards,[165] and one proposed definition.[166] In contrast, FERC, in Order No. 706, approved NERC's version 1 CIP cybersecurity standards and proceeded to direct 106 modifications to the CIP standards.[167] In a 2016 annual filing to report on fulfilled and outstanding FERC directives, NERC reported that between January 1, 2007, and March 31, 2016, FERC had issued seventy-six orders containing 819 directives related to reliability standards.[168]

NERC's imperative to address the many FERC directives became the main focus of NERC's reliability standards process for the first years of NERC's certification as the ERO. Deliberations on how to prioritize the overwhelming amount of work became a prime topic at NERC board meetings. Electric industry stakeholders claimed to be overwhelmed from trying to keep up with multiple standards initiatives. The industry also protested the drain on resources, i.e., subject matter experts' time away from their "day jobs," to populate the many standard drafting teams addressing hundreds of modifications.[169]

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164. *Id.* at P 31; *see also id*. at P 186; Order No. 693-A, *supra* note 60, at P 40.

165. *See* NERC, *Standard Processes Manual*, *in* RULES OF PROCEDURE, *supra* note 68, at 27-29 ("Any entity that is directly and materially affected by the reliability of the North American Bulk Power Systems may request an Interpretation of any Requirement in any continent-wide Reliability Standard"). NERC submits proposed interpretations to FERC for approval. *Id.* In reviewing a proposed interpretation of a reliability standard, FERC applies the statutory standard for review set forth in FPA section 215(d) for FERC approval of a reliability standard. *Id.* at 1.

166. *See, e.g.*, Order No. 740, *Version One Regional Reliability Standard for Resource and Demand Balancing*, 133 FERC ¶ 61,063 at PP 18-19 (2010) (remanding regional standard WECC-BAL-002 because WECC provided "inadequate support for approval"); Order No. 762, *Transmission Planning Reliability Standards*, 139 FERC ¶ 61,060 at P 2 (2012) (remanding TPL-002 because a proposed provision allowing planned load shed in a single contingency "is vague, unenforceable and not responsive to the previous Commission directives on this matter"); Order No. 873, *ERO Proposal to Retire Requirements in Reliability Standards Under the NERC Standards Efficiency Review*, 172 FERC ¶ 61,225 at P 37 (2020) (remanding proposed modifications to FAC-008-4); *see also NERC*, 142 FERC ¶ 61,203 (2013) (remanding interpretation of CIP-006-4); *NERC*, 142 FERC ¶ 61,204 at P 12, *order on clarification*, 143 FERC ¶ 61,271 (2013) (remanding interpretation of CIP-002); Order No. 724, *ERO Interpretations of Specific Requirements of BAL and VAR Standards*, 127 FERC ¶ 61,158 at P 76 (2009) (remanding VAR interpretation); Order No. 705, *FAC Reliability Standards*, 121 FERC ¶ 61,296 (2007), *order on reh'g and clarification*, 123 FERC ¶ 61,239 at P 111 (2008) (remanding proposed definition of Cascading Outage as duplicative of existing "Cascading" definition).

167. Order No. 706, *supra* note 117.

168. *NERC Standards Report: Status and Timetable for Addressing Regulatory Directives, and Periodic Review of Reliability Standards,* FERC Docket No. RR09-6-003 (Mar. 31, 2016) [hereinafter 2016 NERC STATUS REPORT].

169. *See, e.g.*, Order No. 706, *supra* note 117, at P 792 (in final rule approving CIP standards, acknowledging "Arkansas Electric argues that, throughout the CIP NOPR, the Commission proposes significant changes to the Reliability Standards which will increase the amount of effort and expense required to comply.").

In a 2010 proceeding to assess NERC's performance for its first three years as the certified ERO,[170] industry stakeholders raised concerns that FERC's many prescriptive directives to modify reliability standards failed to give due weight to the technical expertise of the ERO and potentially undermined NERC's role as a strong and independent ERO.[171] FERC, of course, disagreed and offered its own perspective that "ERO independence pertains to the ERO's independence from the users, owners and operators of the [bulk-power system] that are subject to mandatory Reliability Standards," while FERC was fulfilling its statutory role as overseer of the ERO.[172]

At the same time, a frustrated FERC expressed concern with the response time for NERC to submit modified reliability standards. FERC noted that, while NERC had indicated in 2007 that it could develop most standards within twelve months and more complicated matters within fifteen months, the average processing time was closer to two years (21.7 months according to NERC).[173] Pointing out that after three years NERC had responded to only approximately 15% of the Order No. 693 directives, FERC chided, "[t]his gives us some concerns about NERC's ability to timely develop new or modified Reliability Standards in response to Commission directives."[174]

c. 2010 Reliability Orders — Angst Followed by Clarity

Many of these frustrations came to a head in March 2010, when FERC issued a group of reliability-related orders that set deadlines for NERC action on reliability standards,[175] proposed to remand standards proposed by NERC,[176] and directed NERC to develop a change to its Rules of Procedure to assure that NERC will timely submit new or modified reliability standards directed by FERC order. While controversial at the time, the rationale provided in these orders, and on rehearing, resulted in a clearer delineation of the roles of FERC, ERO, and industry stakeholders in the standards development process.

Among the group of FERC's March 2010 reliability actions, FERC *sua sponte* issued an order that directed NERC to change its Rules of Procedure "to ensure that the ERO can comply with a Commission directive to develop a new or modified Reliability Standard pursuant to section 215(d)(5) of the FPA."[177] FERC

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170. *See* 18 C.F.R. § 39.3(c) (ERO must submit to FERC a performance assessment three years from the date of certification as the ERO and every five years thereafter).

171. *NERC*, 132 FERC ¶ 61,217 at PP 60-61 (2010).

172. *Id*. at P 63.

173. *Id.* at P 81.

174. *Id.* at P 81, n.60.

175. *See, e.g*., *Mandatory Reliability Standards for the Bulk Power System*, 130 FERC ¶ 61,200 (2010) (Order Setting Deadline for Compliance).

176. *See, e.g*., Notice of Proposed Rulemaking, *Time Error Correction Reliability Standard*, 130 FERC ¶ 61,201 (2010) (proposing to remand proposed Reliability Standard BAL-004-1).

177. *NERC*, 130 FERC ¶ 61,203 at P 26 (2010), *order on reh'g*, 132 FERC ¶ 61,218 (2010); *see id.* at P 1 (Section 215(f) of the FPA requires that the ERO submit to FERC for approval any proposed ERO rule or rule change); *see also id.* at P 1 n.1 (quoting 16 U.S.C. § 824o(f)) (Further, FERC, "upon its own motion or complaint,

explained its concern that the stakeholder balloting within the NERC standards development process could delay or prevent NERC's compliance with a FERC directive to modify a standard, and cited to a standard development project in which "balloting down" had caused such an indefinite delay.[178] According to FERC, such "misuse" of the standards process would "thwart the fundamental goal of Congress in enacting section 215 to protect reliability of the Bulk-Power System."[179]

On rehearing, NERC, trade associations and others characterized the March 2010 Rules Change Order as "requiring NERC to allow the Commission to dictate the specific content of a Reliability Standard required under section 215(d)(5) . . . signal[ing] a departure from Congressional intent and Commission precedent."[180] According to the entities seeking rehearing, the March 2010 Rules Change Order walked back FERC precedent in Order No. 672 and Order No. 693 regarding FERC's role in reviewing proposed standards and providing due weight to the technical expertise of the ERO.[181]

FERC denied the requests for rehearing, stating that the entities seeking rehearing "misunderstood" the FERC directives, and offered additional explanation of FERC's intent in issuing the March 2010 Rules Change Order. First, regarding FERC's authority under FPA section 215(d)(5) to direct the ERO to develop a new or modified reliability standard, FERC made clear that it did not intend to usurp the role of the NERC standards development process by "prescrib[ing] the text or substance of Reliability Standards."[182] FERC reaffirmed that when it directs the ERO to develop a new or modified reliability standard, "the ERO has the freedom and flexibility to develop an equally efficient and effective alternative" to address FERC's underlying reliability concern.[183] FERC, however, rejected arguments that, in response to a directive pursuant to section 215(d)(5) of the FPA, the ERO's only obligation is to *consider* the matter. To that proposition, FERC explained that "the ERO has discretion in how it responds to a Commission directive to submit a new or modified Reliability Standard . . . not in *whether* the ERO will affirmatively respond."[184] FERC reminded entities that if they disagree with a FERC directive, they can seek rehearing and ultimately petition for judicial review; but once the directive is final, the ERO must comply.[185]

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may propose a change to the rules of the ERO." The revised rule "shall take effect upon a finding by the Commission, after notice and opportunity for comment, that the change is just, reasonable, not unduly discriminatory or preferential, is in the public interest, and satisfies the requirements of [FPA section 215] (c).").

178. *Id.* at PP 19-20.

179. *Id.* at P 23.

180. 132 FERC ¶ 61,218, at P 20.

181. *See generally id.* at PP 20-25.

182. *Id.* at PP 26, 30; *see also id*. at P 4.

183. *Id.* at P 27.

184. 132 FERC ¶ 61,218, at P 32.

185. *Id.* at PP 35-37.

Second, FERC denied arguments on rehearing that the March 2010 Rules Change Order "negated" the statutory provision that the ERO must develop standards through an open and balanced stakeholder process.[186] In addition to reiterating that the rehearing request was based on the misunderstanding that FERC intended to prescribe the content of reliability standards, FERC explained that the openness provision provided ample flexibility for NERC to comply with the March 2010 Rules Change Order and still provide an open and balanced stakeholder process. Further, FERC stated that the openness provision did not mandate the ANSI-certified process used by NERC at the time, citing to FERC precedent that an ANSI-certified process was simply one way to meet the openness requirement.[187]

Third, FERC disagreed with claims that the March 2010 Rules Change Order "effectively precludes the ERO from exercising its technical expertise."[188] The ERO retained the opportunity to apply its expertise in developing a responsive reliability standard. FERC then noted the lack of guidance on the meaning or application of the term "due weight" other than that it does not require a rebuttable presumption that a standard should be approved.[189] Reiterating a point made in prior orders that the ERO must adequately explain the "reliability benefits and technical considerations" of a new or modified standard,[190] FERC pointedly added that "[i]n the absence of such an explanation, there will be nothing in the record for the Commission to give due weight to."[191] In other words, due weight is not an abstract concept but rather is dependent on the ERO's articulation of the manner in which it applied its technical expertise.

3. Moving (Somewhat) Toward a "Steady State" Suite of Reliability Standards

In response to FERC's March 2010 Rules Change Order, NERC rolled up its sleeves and developed the required changes to its Rules of Procedure. NERC submitted, and FERC approved, a new rule section that sets out "actions the NERC

186. *Id.* at PP 38-41 (citing 16 U.S.C. § 824o(c)(2)(D)).

187. *Id.* at PP 46-48 (citing 116 FERC ¶ 61,062, at PP 18, 253).

188. 132 FERC ¶ 61,218, at P 50.

189. *Id.* at P 53 (citing Order No. 672, *supra* note 34, at P 345).

190. *Id*.

191. *Id*.; *see also* Order No. 740, *supra* note 166, at P 19 (remanding the WECC regional standard, FERC explained that it "has given due weight to the technical expertise of the Regional Entity . . . and we have determined that WECC provided inadequate support for approval of the proposed regional Reliability Standard"); Order No. 733, *Transmission Relay Loadability Reliability Standard*, 130 FERC ¶ 61,221 at P 67 (2010), *order on reh'g*, Order No. 733-A, 134 FERC ¶ 61,127 (2011), *order on reh'g*, Order No. 733-B, 136 FERC ¶ 61,185 (2011) (rejecting claims that FERC did not give required due weight to NERC because NERC failed provided a sufficient technical justification to support its proposal); Order No. 733-A, *supra* note 182, at P 25 (explaining that "There is no contradiction in the Commission giving due weight to the technical expertise of the ERO and still finding that there is a 'specific matter' that the ERO must address. . . . Section 215 establishes a paradigm by which both the Commission and the ERO are responsible for identifying reliability gaps—the ERO through its Reliability Standards development process . . . and the Commission through its review of proposed Reliability Standards and authority to direct modifications. . . .").

Board may take if it determines that the regular Standards Development Process does not produce a draft Reliability Standard that is responsive to a Commission directive,"[192] namely (1) remanding a draft standard to the NERC Standards Committee, with instructions; (2) convening a technical conference followed by a stakeholder vote that requires a 60% ballot body approval (instead of the typical 2/3 majority vote); or (3) directing the Standards Committee or NERC management to prepare a draft standard that will comply with the FERC directive.[193]

In an order that approved NERC's new rule section, FERC responded to comments that it should use the authority to issue directives "judiciously" by stating that "we take seriously our responsibility to issue directives under section 215(d)(5) only when appropriate to carry out section 215."[194] Overall, the quantity of FERC directives slowed down after 2010, and NERC submitted modified standards that cleared the logjam of outstanding directives.[195] However, FERC continued to issue directives to modify proposed reliability standards when finding that a proposed standard provided overall benefits to bulk-power system reliability (hence, approving the standard) but also contained gaps or was otherwise in need of further improvement. On other occasions, FERC would approve a proposed reliability standard and direct NERC to submit a report at some time after the effective date to inform FERC regarding the efficacy of the standard.[196] Based on the content of NERC's report, FERC would determine whether further action, i.e., directives to modify the standard, were warranted.

In addition to directing modifications to existing reliability standards, in a handful of instances, FERC initiated proceedings to direct that NERC develop a new standard to address an emerging threat to bulk-power system reliability. Examples include FERC directives that NERC develop reliability standards pertaining to geomagnetic disturbances,[197] physical security of critical bulk-power system

192. *NERC*, 134 FERC ¶ 61,216 at P 16 (2011).

193. *See* RULES OF PROCEDURE, *supra* note 68, § 321.

194. 134 FERC ¶ 61,216, at P 31.

195. *See, e.g.*, 2016 NERC STATUS REPORT, *supra* note 168, at 4 (NERC reported that it had addressed 773 directives in its standards development process, leaving 46 to be resolved).

196. *See, e.g.*, Order No. 777, *Revisions to Reliability Standard for Transmission Vegetation Management*, 142 FERC ¶ 61,208 at P 59 (2013) (directing NERC to conduct or contract testing to obtain empirical data and report test results the Commission); Order No. 835, *Disturbance Control Standard — Contingency Reserve for Recovery from a Balancing Contingency Event Reliability Standard*, 158 FERC ¶ 61,030 at P 46 (2017) (directing NERC to submit a report to FERC two years following implementation of approved standard).

197. Order No. 779, *Reliability Standards for Geomagnetic Disturbances*, 143 FERC ¶ 61,147, *reh'g denied*, 144 FERC ¶ 61,113 (2013) (directing NERC to develop a geomagnetic disturbance reliability standard); Order No. 797, *Reliability Standard for Geomagnetic Disturbance Operations*, 147 FERC ¶ 61,209, *reh'g denied*, Order No. 797-A, 149 FERC ¶ 61,027 (2014) (order approving proposed Reliability Standard EOP-010-1 (Geomagnetic Disturbance Operations)).

assets,[198] and supply-chain risk management.[199] While not articulated in any FERC order, the common thread on when FERC will *sua sponte* determine that a new standard is needed appears to boil down to (1) whether the subject matter poses a significant threat to bulk-power system reliability and (2) whether the ERO will timely address the matter on its own.

With the March 18 Order's guidance on FERC's views regarding standards development, the following decade was less dramatic in the standards development realm. FERC continues through today to rely on and cite to the precedent established in Order No. 672, Order No. 693, and the March 2010 Order as the guideposts for reviewing proposed reliability standards.

After tackling the vast majority of outstanding FERC directives to modify reliability standards, NERC and industry advocated for maintaining a "steady state" set of standards. They posited that the 100 or so reliability standards in place were clear, robust and comprehensive, entities subject to the regime should be given a period of time to mature their compliance programs without having to constantly adjust to changing regulatory obligations.[200] Thus, NERC's and industry's goal was that, because they had achieved a "steady state" of standards, it was appropriate to wind down the number of reliability standard projects, while conducting periodic reviews to assess the quality and content of standards.[201]

The "steady state" approach also embraced the notion of paring down the number of reliability standard requirements provided that the paring down did not harm bulk-power system reliability. In fact, FERC initiated the idea in 2012 order that invited NERC "to identify and remove from the Commission-approved Reliability Standards unnecessary or redundant requirements."[202] In response to the 2012 order, NERC conducted a review of the standards and in 2013 proposed to retire thirty-four requirements within nineteen standards. FERC approved the proposal, finding that the provisions proposed for retirement "either: (1) provide little protection for Bulk-Power System reliability or (2) are redundant with other aspects of the Reliability Standards," including the "elimination of certain requirements that pertain to information collection or documentation" whose removal

198. *See Reliability Standards for Physical Security Measures*, 146 FERC ¶ 61,166 (2014) (*sua sponte* order directing NERC to submit proposed standards that address physical security risks to the bulk-power system); *see also* Order No. 802, *Physical Security Reliability Standard*, 149 FERC ¶ 61,140 (2014), *reh'g denied*, Order No. 802-A, 151 FERC ¶ 61,066 (2015) (accepting physical security Reliability Standard CIP-014-1 (Physical Security)).

199. Order No. 829, *Revised Critical Infrastructure Protection Reliability Standards,* 156 FERC ¶ 61,050 (2016) (directing NERC to develop a standard that addresses supply chain risk management).

200. *See*, *e.g.*, NERC, RELIABILITY STANDARDS DEVELOPMENT PLAN 2015–2017, at 2-4, (Dec. 16, 2014), https://www.nerc.com/pa/Stand/Standards%20Development%20Plan%20Library/2015-2017_Reliability_Standards_Development_Plan%20_%20FINAL_December_16,_2014.pdf#search=reliability%20standards%20development%20plan%202015%20%2D%202017.

201. *See id.* at 4 (noting that during the three years from December 2012 to December 2014 FERC had issued 50 standards-related directives). Of the fifty, NERC had addressed twenty-five with fourteen projected to be addressed in 2014. *Id.*

202. *NERC,* 138 FERC ¶ 61,193 at P 81 (2012), *order on clarification*, 139 FERC ¶ 61,168 (2012).

would not result in a reliability gap.[203] FERC went further than the NERC proposal and withdrew forty-one outstanding directives for NERC to modify reliability standards, explaining that "withdrawal of the identified directives should result in more efficient use of NERC's and the Commission's resources and reduce unnecessary burdens, without impacting the reliable operation of the Bulk-Power System."[204]

This exercise was not only useful in eliminating unnecessary or redundant requirements in existing reliability standards, but it also set precedent for the development of future standards regarding matters such as the avoidance of redundancies and information collection provisions in a standard. In the same spirit, beginning in 2017, NERC initiated an efficiency review that resulted in a second petition in which NERC proposed to retire seventy-two reliability standard requirements. FERC ultimately approved retirement of seventy of the requirements,[205] finding that NERC had not provided sufficient justification for the retirement of one standard that contained two candidate requirements for retirement.[206]

4. Emerging Reliability Issues — Current Response and a Glimpse of the Future

As discussed above, recent years have presented a range of new challenges for bulk-power system reliability. Emerging issues such as the changing resource mix and extreme weather have stressed the bulk-power system and threaten to become more acute in the future if not addressed in a timely manner.

NERC has responded by developing new and modified reliability standards to address these emerging issues, as well as updating its Rules of Procedure to provide greater flexibility in standards development. Notably, after having the Rules of Procedure 321 process available for the last fourteen years,[207] the NERC Board of Trustees for the first time exercised its authority to use alternative standards development procedures to meet a FERC deadline regarding inverter-based resources' performance requirements in 2024. And quickly used the process for

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203. Order No. 788, *ERO Proposal to Retire Requirements in Reliability Standards*, 145 FERC ¶ 61,147 at PP 18, 19 (2013).

204. *Id.* at P 25.

205. *See, e.g.*, Order No. 873, *supra* note 166, at P 1 (approving retirement of eighteen requirements and pending action on fifty-six requirements); Order No. 902, *ERO Proposal to Retire Requirements in Reliability Standards Under the NERC Standards Efficiency Review*, 185 FERC ¶ 61,064 at P 1 (2023) (approving retirement of six requirements). To ensure that no gap in reliability occurred, FERC pended action on fifty-six provisions that pertained to Available Transfer Capability until the North American Electric Standards Board (NAESB) adopted equivalent provisions under its business standards. Order No. 873, *supra* note 166, at P 4.

206. Order No. 873, *supra* note 166, at P 37 (While FERC agreed with NERC's rationale for retirement of one requirement of Reliability Standard FAC-008-4 (Facility Ratings), FERC was not persuaded by NERC's rationale for retirement of another provision. Pursuant to FPA section 215(d)(4) FERC must remand to the ERO a reliability standard that "the Commission disapproves in whole or in part." FERC explained that, therefore, it was compelled to remand the entire standard.).

207. *See generally* 134 FERC ¶ 61,216.

the second time in 2025 to address FERC directives for improvements to cold weather reliability standards.[208]

FERC, on its part, has not hesitated to use its FPA section 215(d)(5) authority to direct NERC to develop new and modified reliability standards both in response to NERC proposed standards and on FERC's own *sua sponte* initiative. While FERC orders addressing emerging reliability concerns follow the established precedent on issuing directives to the ERO and setting deadlines, such orders also provide new insights on matters such as resource adequacy and the consideration of cost recovery for expenses involved in compliance with reliability standard obligations.

a. Extreme Weather Standards

During the period 2011 through 2021, four cold weather events significantly impacted bulk-power system operations, with the 2021 Texas event triggering the need for the largest controlled firm load shed in U.S. history and resulting in the loss of hundreds of lives.[209] NERC initially responded to the 2011 and 2014 events with voluntary actions[210] such as issuing guidelines for cold weather operations and training seminars.[211] However, following a 2018 cold weather event, NERC commenced a multi-phased standards project to address the grid impacts of extreme weather. NERC submitted to FERC in June 2021 a first set of cold weather standards, which require generator owners to develop cold weather preparedness plans that must include freeze protection measures, annual inspections, training, identifying cold weather operating parameters, and communicating that data to transmission operators and others.[212] Building on that foundation, later NERC standards require generator owners to develop corrective action plans or "CAPs," requiring generator owners to take corrective actions when they determine that their equipment cannot withstand specified cold weather parameters.

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208. *See, e.g.*, *Petition of the NERC for Approval of Proposed Reliability Standard(s) PRC-029-1 and PRC-024-4*, FERC Docket No. RM25-3-000, at 22 (Nov. 4, 2024) (describing the section 321 process and technical conference); *NERC Board Invokes 321 Authority for EOP-012-3*, NERC (Jan. 10, 2025), https://www.nerc.com/news/Pages/NERC-Board-Invokes-321-Authority-for-EOP-012-3.aspx.

209. *See* FERC ET AL., THE FEBRUARY 2021 COLD WEATHER OUTAGES IN TEXAS AND THE SOUTH CENTRAL UNITED STATES 9 (Nov. 16, 2021), https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and; *see also id*. at 47-50 (summarizing events of 2011, 2014 and 2018).

210. In fact, after the 2011 cold weather event in the Southwest United States, NERC started the process to develop standards to mitigate the effects of cold weather on grid operations. *See* NERC, ERO PRIORITIES: RISC UPDATES AND RECOMMENDATIONS 6 (July 26, 2013), https://www.nerc.com/comm/RISC/Related%20Files%20DL/RISC_Priority_Recommendations-Jul_26_2013.pdf. However, in perhaps one of the most regrettable missteps of NERC as the ERO, it ended the project after NERC's Reliability Issues Steering Committee (RISC) issued a report ranking extreme weather as a "low priority" and concluding that the 2011 event had only isolated impacts on the bulk-power system and was adequately addressed by NERC guidelines. *Id.* at 12.

211. *See, e.g.*, *Petition of the NERC for Approval of Proposed Reliability Standards EOP-011-2, IRO-010-4, and TOP-003-5*, FERC Docket No. RD21-5-000, at 8 (June 17, 2021) (describing voluntary measures).

212. *Id*.

In August 2021, FERC gave a "clean" approval (i.e., no directives) to NERC's first proposed cold weather standards, finding that they were consistent with the recommendations of the 2018 cold weather event report and addressed primary causes of outages resulting from cold weather events.[213] In 2023, FERC approved NERC's second set of proposed weatherization standards,[214] this time directing NERC to develop about half a dozen modifications within a twelve month deadline. NERC was tasked with clarifying "vague" language pertaining to the applicability of the standards and an ambiguous exemption provision.[215] While recognizing the need for limits on the applicability of the weatherization standards to avoid placing obligations on generation units that were not expected to operate in cold weather, FERC opined that "excluded generating units should be the exception and not the rule."[216] In a similar vein, FERC directed NERC to modify a provision that would permit generator owners to self-declare exemptions from implementing freeze protection measures compliance based on technical, commercial, or operational constraints. Again, FERC did not object to the concept of an exemption, but rather to the open-endedness of the provision. Thus, FERC directed NERC to develop objective criteria to determine legitimate constraints, and to identify an authority to review declared exceptions.[217]

Further, conveying a sense of urgency, FERC directed NERC to modify the weatherization standards by (1) shortening the proposed sixty-month time frame for generator owners to implement freeze protection measures for existing generating units[218] and (2) developing an appropriate deadline for completing mitigating measures pursuant to a CAP, which had no deadline at all in the standards.[219] FERC then chastised industry for not addressing weatherization sooner, noting that "industry has been aware of and alerted to the need to prepare their generating units for cold weather since at least 2011," yet a report found that as of 2019 "one third of the generator owners and operators surveyed 'still had no winterization provisions.'"[220]

On another issue, FERC rejected requests from commenters on the need for a cost recovery mechanism before the weatherization standards would go into effect, some arguing that the lack of such a mechanism is a legitimate "constraint" on compliance.[221] With little elaboration, FERC found the cost recovery concerns out of scope of the proceeding.[222] Denying rehearing, FERC explained that consideration of cost recovery exceeded the scope of the proceeding because FERC's role under FPA section 215 is to evaluate "whether a proposed Reliability Standard

213. *NERC*, 176 FERC ¶ 61,119 at PP 14, 16 (2021).
214. *NERC*, 182 FERC ¶ 61,094 (2023), *order on reh'g*, 183 FERC ¶ 61,222 (2023).
215. 182 FERC ¶ 61,094, at PP 4, 54-59.
216. *Id.* at P 4.
217. *Id.* at PP 6, 64-66.
218. *Id.* at P 10.
219. 182 FERC ¶ 61,094, at PP 78-79.
220. *Id.* at P 10.
221. *Id.* at PP 80-82.
222. *Id.* at P 83.

achieves a certain reliability objective."[223] That role, it added, is "materially different" than the Commission's role under FPA sections 205 and 206 to assess "whether rates are just and reasonable."[224] FERC also rejected as unpersuasive an argument that the phrase "just and reasonable," which appears in both FPA sections 205 and 215, necessarily means that FERC must address cost recovery or rates under FPA section 215.[225] FERC made clear, however, that in finding the matter out of scope, generator operators maintained the opportunity to seek — in a proper forum — the recovery of costs associated with the cold weather standards.[226]

FERC also was not persuaded by arguments that provisions of the cold weather standards exceeded FPA section 215 statutory definitions of "reliability standard" and "reliable operation" by requiring generator owners to install freeze protection measures at existing facilities.[227] FERC rejected the protestor's position as an overly narrow and inaccurate reading of the statute that would create an implied exclusion beyond the one explicit statutory exclusion in the definition of reliability standard for the enlargement of existing facilities or the construction of new transmission capacity or generation capacity. Rather, FERC explained that standard's freeze protection provisions serve an appropriate reliability purpose and do not require new or expanded generating capacity.[228]

While NERC's proposed cold weather standards focused on freeze protection measures and other actions in an operations time frame, FERC saw a separate need to fill a gap in transmission planning to better consider extreme weather events. Thus, in a *sua sponte* rulemaking resulting in Order No. 896, FERC directed NERC to develop new or modified standards that address transmission system *planning* for extreme heat and cold weather events.[229] FERC tasked NERC to develop standards requiring that when transmission planners study transmission systems for long-term planning they must specifically consider scenarios in which extreme weather impacts grid operations. Moreover, when such studies indicate that the transmission system cannot withstand the impacts of the studied extreme weather scenarios, entities must develop corrective action plans (the CAPs discussed earlier) to mitigate the effects of extreme weather on system operations.[230] FERC gave NERC an eighteen-month deadline to submit the required standards.

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223. 183 FERC ¶ 61,222, at P 14.

224. *Id*.

225. *Id.* at P 18.

226. *Id.* at P 16.

227. 182 FERC ¶ 61,094, at PP 41, 44 (quoting 16 U.S.C. § 824o(a)(3)) definition of "reliability standard" that includes "requirements for the operation of existing bulk-power system facilities . . . necessary to provide for reliable operation").

228. *See, e.g.*, *id.* at P 47; *see also* 183 FERC ¶ 61,222, at P 31 (on rehearing, reiterating that "nothing in . . . Reliability Standard EOP-012-1 — which require generator owners to add new, or modify existing, freeze protection measures — mandates the construction of new generation capacity or an expansion of a generating unit's generating capacity; thus, it comports with FPA section 215").

229. Order No. 896, *Transmission System Planning Performance Requirements for Extreme Weather*, 183 FERC ¶ 61,191 (2023).

230. *Id.* at P 152.

While Order No. 896 set forth three high level directives to NERC, it also provided more detailed discussion and upward of eighteen "sub-directives" on cold weather benchmarking, studies, and assessment.[231] Avoiding a regurgitation of the technicalities, there are three points worth emphasizing. First, consistent with precedent, FERC again displayed its willingness to exercise its authority under section 215(d)(5) to direct the ERO to address an articulated reliability gap. Second, FERC made clear that, in directing that NERC modify the planning standards to include CAPs,[232] Order No. 896 did not mandate the use of any specific mitigation measure and, therefore did not overstep the FPA section 215 provision that prohibited standards that required the construction of additional transmission or generation capacity.[233]

Third, in an unusual yet not wholly unprecedented move,[234] FERC directed that NERC develop "processes to facilitate interaction and coordination with applicable regulatory authorities or governing bodies responsible for retail electric service as appropriate in implementing a corrective action plan."[235] Entities would have to "share their corrective action plans with, and solicit feedback from," these authorities on matters such as local reliability impacts and cost considerations.[236]

FERC and NERC activity on extreme weather standards remains an ongoing process, as NERC continues to develop proposed standards responsive to the FERC orders, which when complete will trigger FERC review proceedings.[237] Thus, to the extent that the extreme weather precedent provides insight into regulatory action on other emerging reliability issues, the tea leaves suggest an iterative process to ensure that the reliability concern is effectively and thoroughly (if not efficiently) addressed.

b. Standards that Address Reliability Impacts Related to the Growth of Inverter-Based Resources

In addition to its action to ensure that NERC registers the owners and operators of inverter-based resources (discussed above under the topic of jurisdictional issues), concurrently in 2023, FERC issued Order No. 901 directing that NERC update reliability standards to address reliability concerns associated with inverter-

231. *See generally* NERC, CONSIDERATION OF FERC ORDER 896 DIRECTIVES (Dec. 2024), https://www.nerc.com/pa/Stand/Project202307ModtoTPL00151TransSystPlanPerfReqExWe/Consideration_of_FERC_Order_896_Directives_Final_120224.pdf.

232. Order No. 896, *supra* note 229, at PP 148, 152.

233. *Id.* at PP 154-55.

234. *See id*. at P 166 n.267 (citing Order No. 762, *supra* note 166, at P 65 (stating that "a customer should have notice and understanding that the transmission planner plans to curtail certain Firm Demand in the event of a single contingency")).

235. *Id*. at P 152.

236. Order No. 896, *supra* note 229, at P 165.

237. NERC submitted its proposed new reliability standard for transmission planning (TPL-008-1 (Transmission System Planning Performance Requirements for Extreme Temperature Events) responsive to the Order No. 896 directives, which FERC approved in February 2025. *See, e.g.*, *NERC,* 190 FERC ¶ 61,099 (2024).

based resources.[238] While FERC's directives focused on four high-level concerns[239] — data sharing, model validation, planning and operational studies, and performance requirements — a close read of the final rule indicates that FERC imposed more than sixty directives pertaining to the expected content for new or modified standards.

Order No. 901, while significant for its substance, does not tread new legal ground. Rather, the final rule follows a pattern based on FERC precedent that by now should be familiar to the reader. FERC identified an important gap in the reliability standards pertaining to inverter-based resources that affects the reliability of the bulk-power system. While noting NERC activities to address the matter, FERC expressed concern with NERC's pace of progress.[240] FERC, using its authority pursuant to section 215(d)(5) of the FPA, then directed NERC to develop standards that address the articulated reliability concern. Also consistent with precedent, FERC made clear that it was not dictating the content of a standard or otherwise impinging on NERC's ability to develop solutions by stating that "NERC may propose to develop new or modified Reliability Standards that address our concerns in an equally efficient and effective manner."[241]

In Order No. 901, FERC set a three-stage deadline for NERC to submit responsive standards in "tranches" during 2024, 2025, and 2026.[242] While not setting a definitive deadline for implementation of the inverter-based resource standards, FERC set a strong expectation "to have all of the directed Reliability Standards effective and enforceable well in advance of 2030."[243]

NERC timely submitted its first tranche of inverter-based resource standards in November 2024.[244] It is noteworthy that, to meet the deadline, the NERC Board of Trustees for the first time exercised its authority under the 2011 Rules of Procedure change that allows the NERC Board to use alternative standards development procedures to meet a FERC deadline.[245] A proposed new standard (proposed Reliability Standard PRC-029-1) to address performance requirements, e.g., ride through performance (limits on generator unit tripping and momentary cessation),[246] failed stakeholder balloting several times due to disagreement on the appropriate scope of an exception provision for existing inverter-based resources with hardware limitations that would make compliance prohibitively expensive.

238. *See* Order 901, *supra* note 96, at P 25.

239. *Id.* at PP 5, 53.

240. *See, e.g.*, *id*. at P 33.

241. *Id*. at P 54.

242. Order No. 901, *supra* note 96, at PP 7, 229.

243. *Id*. at P 57.

244. *See NERC,* 190 FERC ¶ 61,098 (2025); *see also* Notice of Proposed Rulemaking, *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, 189 FERC ¶ 61,212 at P 18 & n.36 (2024) [hereinafter Reliability Standards NOPR].

245. *See generally* 134 FERC ¶ 61,216.

246. *See* Order No. 901, *supra* note 96, at P 190.

Up against the FERC deadline, NERC held a technical conference among stakeholders as a preliminary step before possible NERC Board intervention.[247] Fortunately, the technical conference provided useful feedback, followed by further refinements to the draft standard that passed a final stakeholder ballot. The NERC Board then approved the draft standard without extraordinary measures, followed by submission of the draft standard to FERC.[248]

c. Stepping Up to the Plate with Process Solutions that Drive Results

While not minimizing the importance of addressing modeling and operational issues associated with inverter-based resources, it is important to understand that this is just one piece — and far from the most significant — of a larger set of issues regarding the changing resource mix and transformation of the electric grid. Other challenges include: the pace of retirement of resources, sufficiency of reserve margins, real-time availability of resources, essential reliability services (e.g., voltage support and ramp rates), load growth from electrification and data centers, application of new technologies (including artificial intelligence), and integrating energy storage resources.[249]

FERC and NERC action to date regarding extreme weather standards and inverter-based resources would likely inform the approach to these other issues. But the ability of FERC and the ERO to act directly on certain emerging issues may run up against statutory limitations in FPA section 215 that pertain to regulating facilities used in local distribution, directing the construction of new transmission and generation capacity, and setting standards for resource adequacy.[250]

For NERC's part, it has further revised its Rules of Procedure to better assure that its standards development processes are sufficiently flexible to timely produce the necessary reliability standards. In a November 2023 order, FERC approved NERC's proposed revisions to the NERC Rules of Procedure that instituted two significant changes to NERC's standards development process.[251] First, NERC empowered its Board of Directors "in extraordinary circumstances" to direct the development of a reliability standard when the stakeholder process "fail[s] to do so";[252] essentially an extension of the then-controversial 2011 Rules of Procedure change authorizing the NERC Board of Trustees to take action to assure that NERC is responsive to a FERC directive.[253] A second change retired the rule requiring that NERC maintain ANSI certification, thereby allowing NERC to use

247. *See generally* NERC, AGENDA: STANDARDS COMMITTEE AND NERC RIDE-THROUGH TECHNICAL CONFERENCE (Sept. 4, 2024), https://www.nerc.com/pa/Stand/Documents/Agenda-Standards%20Committee%20and%20NERC%20Ride-through%20Technical%20Conference.pdf.

248. *See* Reliability Standards NOPR, *supra* note 244, at P 18 & n.36.

249. *See* NERC, 2023 ERO RELIABILITY RISK PRIORITIES REPORT 24-27 (July 24, 2023), https://www.nerc.com/comm/RISC/Related%20Files%20DL/RISC_ERO_Priorities_Report_2023_Board_Approved_Aug_17_2023.pdf.

250. *See* 16 U.S.C. § 824o(a)(1), (a)(3), (i)(2).

251. *NERC*, 185 FERC ¶ 61,146 (2023).

252. *See id*. at P 8.

253. *See generally* 134 FERC ¶ 61,216.

alternative processes that still allow for stakeholder participation. NERC averred that "participation in the ANSI standards approval process does not yield any additional reliability benefit given NERC's current Reliability Standards framework."[254]

FERC accepted the rule changes, explaining that FERC had never required an ANSI-certified process but had simply recognized ANSI as one means to satisfy the statutory requirement for an open stakeholder process in standards development.[255] Moreover, while FERC stated its support for the added flexibility to the standards development process, FERC also expressed concern regarding "the ongoing need for a timely and responsive Reliability Standards development process given the rapid pace of change in the reliability and security of the Bulk-Power System."[256]

Based on the foregoing, NERC has recognized and embraced the need to act fluidly to address the anticipated issues pertaining to grid reliability. Whether NERC's process changes to date will suffice remains to be seen. What is also demonstrated by the record to date is that when NERC and its stakeholders are unable to proactively develop reliability standards in a timely manner, FERC will step into the breach and exercise its statutory authority to issue directives to NERC to develop the needed standards.

But collaboration is the preferred approach. Ideally, collaboration would involve FERC, NERC, industry stakeholders and other interested persons engaging formally (e.g., FERC or NERC-led technical conferences) or informally (as permitted, to engage in discussions and public meetings) to achieve a common understanding of reliability concerns and acceptable solutions. Initiating the standards development process with such common understanding would likely result in better defined goals and direction for the standards drafting team, which could then focus on developing the detailed provisions of a new or modified reliability standard consistent with such goals and direction. Successful collaboration would pay off in timeliness, efficiency, and solution-oriented substance, which is more likely to achieve FERC approval without follow-up directives for improvement.

Collaboration is not a novel approach and has been a strategic aim of NERC for years. The matter is worth emphasis, however, given the wave of changes affecting grid reliability and the need for timely action. A lack of common understanding can and has led to break downs in the standards development process and

254. 185 FERC ¶ 61,146, at P 12 (citing *NERC*, FERC Docket No. RR23-4-000, at 16 (Sept. 15, 2023))

255. *Id*. at P 27 (citing Order No. 672, *supra* note 34, at P 269).

256. *Id*. at P 28. In a more recent filing, NERC articulated additional measures intended to improve standards process efficiency, working within the current rules. *See NERC Supplemental Filing to the Five-Year ERO Performance Assessment Report*, FERC Docket No. RR24-4-001, at 13 (Nov. 8, 2024) (In particular, NERC explained that that the desire to minimize compliance risk can stall standards development at times. To counter this cause of slow down, NERC plans to allow an "abeyance period" after the implementation of select new and modified standards. According to NERC, the compliance abeyance period would minimize concerns about compliance risk, "thereby streamlining the consensus-building process and focusing it" on developing needed reliability standards). Other aspects of this NERC initiative are discussed below under the topic of compliance and enforcement.

untimely or diminished results with FERC stepping into the breach. While express statutory authority authorizes FERC to direct the development of new or modified reliability standards,[257] the discussion above indicates that this is not FERC's preferred approach. Moreover, when delay or inaction at NERC compels FERC to direct new or modified standards, FERC's description of the issue and guidance on how to address the matter — while allowing for the development of equally effective and efficient alternatives — necessarily drives potential solutions. Therefore, all entities with a role in the standards development and approval process would benefit from a collaborative approach to addressing electric grid reliability concerns.

C. From Prescription to Risk—The Evolution of the ERO Compliance and Enforcement Program and FERC's Careful Balance

The ERO compliance and enforcement program, as envisioned by Congress in section 215 of the FPA and as implemented by FERC's regulations, operates through a hierarchical structure: FERC oversees NERC (the ERO), which in turn delegates certain authorities to the Regional Entities.[258] These Regional Entities directly monitor and enforce compliance with mandatory reliability standards by registered entities — the users, owners, and operators of the bulk-power system.[259]

The petitions of NERC and the orders of FERC over the last twenty years show an evolution of the ERO compliance and enforcement program from a rigid, uniform approach to a risk-based program that balances efficiency with robust oversight. While the development of mandatory reliability standards established the foundation for the ERO regime, an effective compliance and enforcement program has also proven crucial to achieving reliability goals. This program reflects an ongoing effort to balance rigorous oversight with efficient use of industry and regulatory resources and reveals FERC's careful approach to balancing efficiency in processing violations with ensuring continuing improvement to the reliability of the bulk-power system. Through two decades of decisions, FERC has developed clear priorities for evaluating proposed changes to the program that align with the principles FERC established in Order No. 672 while allowing innovation.[260]

1. The Original Trinity — the Foundation of Reliability Compliance and Enforcement

Section 215(e) of the FPA authorizes the ERO to impose a penalty on a user, owner, or operator of the bulk-power system for violating a mandatory reliability standard. The statute further provides that before a penalty imposed by the ERO can take effect, the ERO must first file a "notice of penalty" with FERC, allowing

257. 16 U.S.C. § 824o(d)(5).

258. *See, e.g.*, *id.* § 824o(e)(4); 18 C.F.R. § 39.8; *see also* Order No. 672, *supra* note 34, at P 772 ("in general, the Commission oversees the ERO and the ERO oversees any approved Regional Entity").

259. *See, e.g.*, 16 U.S.C. § 824o(b); 18 C.F.R. § 39.2; *see also supra* Section III.A.1.

260. *See* Order No. 672, *supra* note 34.

a thirty-day window for either the alleged violator or FERC on its own motion to seek review of the penalty. FERC also has independent enforcement authority to impose a penalty on an entity for noncompliance with a reliability standard.[261] Moreover, by statute, the ERO can contract with Regional Entities to delegate enforcement authority. While the statute requires that a reliability penalty "bear a reasonable relation to the seriousness of the violation" and consider the violators' timely remediation efforts, FERC applied an upper limit of $1,000,000 per day per violation in Order No. 672, which NERC now increases periodically to reflect FERC's annual increases pursuant to the Federal Civil Penalties Inflation Adjustment Act.[262]

As a part of Order No. 672, FERC added regulations governing the enforcement of reliability standards by NERC, its Regional Entities, and FERC.[263] In doing so, FERC constructed a three-pillared framework to define the essential elements for compliance and enforcement: (1) a penalty program,[264] (2) a compliance program including proactive compliance audits,[265] and (3) prompt notification to FERC of possible violations.[266] This trinity of enforcement tools balances deterrence, prevention, and oversight, which have guided the program's evolution over the last two decades. From this trinity, another three core requirements emerges for meaningful FERC oversight: (1) transparency, (2) verification, and (3) consistency.

Transparency is a cornerstone of meaningful oversight. As included in Order No. 672, FERC's requirements for ERO transparency of its enforcement actions cover prompt notification of all violations,[267] maintenance of complete violation records,[268] and preservation of FERC and the ERO's ability to review Regional Entity decisions.[269] This public transparency of enforcement actions (where appropriate) ensures accountability to both FERC and stakeholders.[270]

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261. 16 U.S.C. § 824o(e)(3).

262. *See id.* §§ 824o(e)(6), 825o-1(b); *see also* 16 U.S.C. § 824o(a)(1).

263. Order No. 672, *supra* note 34, at P 3.

264. *See* 18 C.F.R. § 39.7(c)-(g); *see also* Order No. 672, *supra* note 34, at P 47 ("the ERO and Regional Entities must establish uniform Rules that provide adequate due process to an alleged violator when the ERO or Regional Entity is determining whether to assess a penalty"); *see also id.* at P 49 (requiring "the ERO to develop, and submit to the Commission for approval, penalty guidelines that identify a range of non-monetary and monetary penalties to be applied by the ERO for determining the appropriate penalty for violation of a Reliability Standard").

265. *See* 18 C.F.R. § 39.7(a); *see also* Order No. 672, *supra* note 34, at PP 45-46.

266. *See, e.g.*, 18 C.F.R § 39.7(b); Order No. 672, *supra* note 34, at P 45. In Order No. 672, FERC rejected commenters' suggestions that only violations that have a material impact on reliability should be reported, or to allow reporting of "less urgent" violations on a quarterly basis vs. promptly. *Id.* at P 583. FERC explained that classifying some violations as "less significant" would send the wrong signal and is "ultimately subjective." *Id.* at P 584.

267. Order No. 672, *supra* note 34, at P 583.

268. *Id.* at P 587.

269. *Id.* at P 452.

270. *Id.* at P 535. FERC excepted from the general expectation of transparency for noncompliance where public dissemination could jeopardize system security. *See id*. at P 538.

Verification makes up the second element of meaningful FERC oversight. FERC required the ERO to "retain oversight responsibility" and required each Regional Entity to "report periodically to the ERO on how it carries out its delegated enforcement authority."[271] As part of NERC's oversight of the Regional Entities, FERC required that NERC "audit each Regional Entity's ongoing compliance with relevant statutory and regulatory criteria and performance in enforcing Reliability Standards and report the results to the Commission."[272] FERC maintained authority to review penalty determinations.

Consistency forms the third leg of the FERC oversight role — with requirements for uniform processes across Regional Entities, standardized documentation, and consistent applications of sanctions.[273] After certifying NERC as the ERO, FERC also approved the NERC Rules of Procedure, including the Compliance Monitoring and Enforcement Program contained in Appendix 4C to those rules, to ensure uniform processes.[274] In approving NERC's compliance and enforcement program, FERC reiterated several key concepts. Among these were uniformity among Regional Entity programs to ensure fairness,[275] the independence of ERO and Regional Entity compliance staff from undue industry influence,[276] and the fundamental goal of promoting behavior that supports and improves bulk-power system reliability.[277]

FERC explained that "a strong ERO is critical to maintaining Bulk-Power System reliability" and placed the ERO between it and the Regional Entities as the primary point of contact.[278] FERC required the regional delegation agreements between NERC and the Regional Entities to list all statutory functions the Regional Entity would perform on behalf of the ERO,[279] explaining that the "primary authority" for enforcing reliability standards responsible for all enforcement activities should be a strong ERO.[280] Further, even after delegation, the ERO would keep its "responsibility to ensure that a Regional Entity implements its enforcement program in a consistent manner."[281] FERC stated its expectation that "regional processes should be uniform unless regional facts, other than custom, require a difference."[282]

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271. Order No. 672, *supra* note 34, at P 47.

272. *Id.* at P 773.

273. *See, e.g.*, *id.* at P 47 (explaining that the Regional Entity reports to the ERO to "ensure consistency" while requiring that "the ERO and Regional Entities must establish uniform Rules" for enforcement).

274. 116 FERC ¶ 61,062; *see also* 117 FERC ¶ 61,126, at P 3.

275. 116 FERC ¶ 61,062, at PP 313, 350.

276. *Id.* at P 315.

277. *See id.* at P 405; Order No. 672, *supra* note 34, at P 455; *NERC,* 125 FERC ¶ 61,212 at P 24 (2008).

278. Order No. 672, *supra* note 34, at P 140.

279. *Id.* at P 230.

280. *Id.* at P 654.

281. *Id*.

282. Order No. 672, *supra* note 34, at P 737.

2. Rigorous to a Fault — When Every Violation Demanded a Novel

As described in detail below, in the initiation of the compliance and enforcement program, FERC emphasized thorough documentation of all violations, regardless of severity, and the importance of uniform processes across regions. Public posting requirements ensured transparency of all enforcement actions. While FPA section 215 required the ERO to submit to FERC a "notice and record" of an ERO enforcement proceeding,[283] FERC's regulations elaborated on the required content of a penalty filing. Along with the name of the violator and the reliability standard and requirement violated a notice of penalty had to include an explanation of the "findings of fact with respect to the act or practice resulting in the violation," a description of the penalty, and the "record of the proceeding."[284]

FERC focused on effective audit programs to demonstrate that the ERO could develop *and enforce* reliability standards as required by section 215 of the FPA.[285] Any Regional Entity enforcing those standards on behalf of the ERO through a delegation of authority needed a compliance audit program in place.[286] FERC stated its expectation that the audit programs should be "a single program applicable to both the ERO and Regional Entities unless there is a compelling reason for a difference between the ERO and a particular Regional Entity. Such programs must not vary significantly from region to region unless good cause is shown for such differences."[287] FERC explained early on that "uniformity among Regional Entity [audit] programs is important to provide fairness"[288] And that the need for "rigorous audits" is a "crucial element of ensuring the reliability of the Bulk-Power System."[289] Thus, under NERC's early audit program, all registered entities were audited on the same applicable reliability standards regardless of size, location, or potential impact to the reliability of the bulk-power system.

In a similar vein, NERC and the Regional Entities treated every violation with the same level of rigor (differentiated only by the registration function of each entity (e.g., transmission operator or generator owner)) with little discretion. As the ERO's program matured, FERC allowed NERC to implement certain efficiency measures while carefully preserving essential oversight. In its April 2008 administrative policy statement, FERC indicated general criteria it would consider in determining whether to further review submitted notices of penalty, including: (1) seriousness of the violation, (2) risk to bulk-power system reliability and actual harm, (3) consistency in penalty application, and (4) the penalty's impact on improving compliance and improving reliability.[290]

283. 16 U.S.C. § 824o(e)(1).

284. 18 C.F.R. § 39.7(d).

285. 16 U.S.C. § 824o(a)(2).

286. Order No. 672, *supra* note 34, at P 463.

287. *Id.* at P 464.

288. 116 FERC ¶ 61,062, at P 313.

289. *See* 132 FERC ¶ 61,217, at P 125.

290. *Statement of Administrative Policy on Processing Reliability Notices of Penalty and Order Revising Statement in Order No. 672*, 123 FERC ¶ 61,046 at P 11 (2008).

Perhaps most significant to the ERO and Regional Entity workload, the 2008 Notices of Penalty Policy Statement reversed the policy in Order No. 672 that the ERO must submit settlement agreements that resolve alleged reliability standard violations for information purposes only.[291] FERC stated that, going forward, it would also substantively review settlements submitted by the ERO because "we do not believe it reasonable to treat settlements as categorically different than other notices of penalty."[292] Where the number of contested enforcement actions before the ERO can be counted on two hands, the vast majority of all violations are resolved through settlements.[293]

In the 2008 Notice of Penalty Policy Statement, FERC also advised that when reviewing a notice of penalty, it would conduct a *de novo* review of the record of the proceeding. FERC explained that it would take an independent review to determine whether the record provides adequate evidence that the proposed penalty determination aligns with FPA section 215(e)(6) that a penalty imposed for a violation of a reliability standard "shall bear a reasonable relation to the seriousness of the violation and shall take into consideration the efforts of [the registered entity] to remedy the violation in a timely manner."[294] Thus, FERC's decision to scrutinize settlements in a manner equivalent to contested proceedings profoundly impacted FERC and ERO workloads and the level of documentation the Regional Entities needed to provide for violations.

Later in 2008, FERC issued a guidance order in response to the first batch of notices of penalty NERC submitted after the Policy Statement.[295] Acknowledging that "there is substantial room for improvement in future records associated with notices of penalty," FERC provided guidance "to assure that future notice of penalty filings contain the appropriate level of information to help the Commission accurately gauge the nature and seriousness of violations and the reasonableness of any penalty assessment."[296] Regarding the completeness of the record, FERC stated its expectations that Regional Entities request, receive, and provide detailed

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291. Order No. 672, *supra* note 34, at P 598.

292. 123 FERC ¶ 61,046, at P 16.

293. *See, e.g.*, NERC, ENFORCEMENT AND MITIGATION, https://www.nerc.com/pa/comp/CE/Pages/Enforcement-and-Mitigation.aspx (last visited Apr. 20, 2025) (showing that only 44 of the 1,025 public violations posted as spreadsheet notices of penalty from 2011 to 2020 did not have associated settlement agreements). All public NERC-filed violations are available here.

294. *NERC*, 124 FERC ¶ 61,015 at P 8 (2008) (citing 16 U.S.C. § 824o(e)(6)). FERC has conducted a *de novo* review in a single proceeding. *See NERC*, 150 FERC ¶ 61,212 (2015) (affirming a $52,000 penalty). FERC has reviewed a handful of other penalty assessments that involved a legal dispute, but the underlying facts were not contested. See *e.g.*, *NERC*, 129 FERC ¶ 61,033 (2009).

295. 124 FERC ¶ 61,015, at P 2 (Regarding the thirty-seven penalties themselves, FERC explained "[b]ased on our careful review of the Notices of Penalty that were submitted to us, we have decided not to engage in further review of these first Notices of Penalty by instituting any formal proceedings on our own motion."). Thus began a long "tradition" of NERC submitting a monthly batch of notices of penalty, while FERC would conduct an informal "careful review" to determine whether a formal review proceeding is warranted. Although not required by law (as FPA section 215(e) provides that a notice of penalty takes effect after lodged with FERC for 30-days without challenge), FERC has consistently issued a notice of no further review following each NERC monthly submission of notice of penalties.

296. *Id.* at P 15.

information about the duration, nature, and penalty assigned to violations. For the duration, such information would need to identify the entire violation period — in days — to support the sanction guidelines use of per violation, per day calculations.[297] For nature of the violation, there must be sufficient information to determine whether a violation occurred.[298] And for penalty, FERC expected that there be a discussion of specific facts of each violation and how those facts relate to each relevant penalty factor.[299] FERC also required that future penalty filings include additional information on an entity's mitigation actions, the Regional Entity's verification of mitigation completion, and consideration of whether multiple violations indicate a more widespread compliance failure.[300]

So once NERC or the Regional Entities identified violations — whether self-identified by the registered entity or found during a compliance audit — they applied the same level of rigor and documentation for each instance of noncompliance, regardless of the level of risk posed to the reliability of the bulk-power system. For example, a single minimal risk noncompliance with an associated settlement and no penalty would be filed as part of a package that included the settlement agreement, disposition documents (that restated the terms of the settlement agreement over again in a standard templated form), original discovery documents (e.g., a self-report or audit report), formal mitigation plans, certifications, verifications, etc.[301] Considering that over 1,200 violations were reported in 2008 *alone*, NERC and the Regional Entities soon experienced sizeable backlogs in processing all violations regardless of risk or impact to the bulk-power system.[302] By 2009, there were extensive stakeholder concerns about the number of violations already in the queue yet to be processed and filed with FERC.[303]

3. Risk and Reward — NERC's Journey to a Risk-Based Model

In 2009, NERC faced a critical junction — a growing backlog threatened to undermine the enforcement program's effectiveness. Processing the backlog diverted NERC and Regional Entity resources needed for immediate compliance matters. Stakeholders too experienced limbo on their outstanding violations and pending settlement discussions without more timely resolution. The tension between maintaining rigorous oversight and enabling efficient processing became increasingly apparent as the enforcement caseload grew. NERC's response to this challenge marked the beginning of a systematic shift toward risk-based approaches — occasionally testing the boundaries established by FERC's core oversight requirements.

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297. *Id.* at P 22.

298. *Id.* at P 31.

299. 124 FERC ¶ 61,015, at P 34.

300. *Id.* at PP 37-38.

301. *See, e.g.*, *NERC Notice of Penalty*, FERC Docket No. NP08-7-000 (June 4, 2008).

302. *See, e.g.*, NERC, NERC COMPLIANCE MONITORING AND ENFORCEMENT PROGRAM — 2008 ANNUAL REPORT 2 (Aug. 2009), https://www.balch.com/files/upload/NERC_CMEP_Annual_Report_2008.pdf.

303. *NERC Three-Year Electric Reliability Organization Performance Assessment Report*, FERC Docket No. RR09-7-000, at 36 (July 20, 2009).

To address the rapidly growing enforcement backlog, NERC filed an Omnibus Notice of Penalty (Omnibus Filing) with FERC in October 2009, seeking approval of 564 proposed penalties from 140 registered entities.[304] The Omnibus Filing was NERC's first major step toward risk-based processing. NERC explained that it was using this new approach to address "older, relatively minor" violations that had minimal to moderate impacts on bulk-power system reliability and did not pose serious risks to the reliability of the bulk-power system.[305] This approach suggested that administrative efficiency could coexist with effective oversight when properly structured.

In October 2009, in response to NERC's three-year performance assessment filing and the first Omnibus Filing, FERC issued a second guidance order allowing the use of abbreviated notices of penalty for violations that "did not pose a significant risk to the reliability of the Bulk-Power System."[306] FERC did so because "an excessive backlog may undermine the statutory goals of FPA section 215."[307] Noting the 2008 Guidance Order's requirement for sufficient documentation and facts describing each violation, FERC clarified that the record in each notice of penalty "should be proportional to the complexity and relative importance of the violations it addresses" and "need not include more information than necessary to support the rationale for the penalty, given the nature of the violations at issue."[308]

A month later, FERC accepted NERC's Omnibus Filing and reiterated its expectations regarding notice of penalty filings.[309] FERC emphasized that it expected NERC to "provide *appropriately detailed information* about the nature and circumstances of each violation to allow the Commission to determine whether further review of a Notice is necessary."[310] Moreover, FERC indicated its receptivity to a streamlined format for notice of penalty filings with the goal of limiting future backlogs.[311] FERC's approval proved pivotal. While accepting the filing, FERC established a crucial principle — that the extensiveness of the submitted record should parallel the violation's impact. This proportionality principle would guide the future evolution of a risk-based approach.

When it issued its order on NERC's Three-Year Performance Assessment, FERC reiterated these proportionality and streamlining themes by encouraging NERC and the Regional Entities to "align the record and format of notices of penalty to the relative significance of violations," such as in "parking ticket[s]" or

304. *NERC Omnibus Notice of Penalty*, FERC Docket No. NP10-2-000 (Oct. 14, 2009).

305. *NERC*, 129 FERC ¶ 61,119 at PP 5-6 (2009); *see id.* at P 1 (Of these violations, 541 penalties were zero-dollar assessments, while twenty-three penalties against eight entities included monetary amounts ranging from $1,000 to $15,000, totaling $91,000.).

306. *NERC*, 129 FERC ¶ 61,069 at P 2 (2009).

307. *Id.* at P 8.

308. *Id.* at P 9.

309. 129 FERC ¶ 61,119, at P 38.

310. *Id.* at P 39 (emphasis added).

311. *Id.* at P 40.

"speeding ticket[s]."[312] Although encouraging an alignment of the record, the order cautioned that "documentation is necessary to establish a reasonably auditable demonstration of compliance and may reinforce focus on attaining the performance required by a Reliability Standard."[313]

Taking FERC's cue, NERC soon introduced "abbreviated notices of penalty" and "deficiency notices of penalty" formats that were successful at increasing efficiency.[314] So NERC soon segued to developing an "administrative citation of penalty," which provided specific information in a spreadsheet format, and which it used only for violations of reliability standard requirements with a violation risk factor of "lower" or "medium."[315] In its notice on the filing, FERC commented on this first submission of administrative citations of penalty, recognizing that "NERC and the Regional Entities expend substantial efforts and resources monitoring compliance . . . and building adequate records to support findings of violations" and stated its belief that the administrative citation of penalty format would be a "successful tool in improving efficiency of NERC's enforcement process."[316] Even with the support of FERC, however, the limitation of administrative citations of penalty by violation risk factor and violation severity level significantly reduced the potential use of this format and was quickly dropped.[317]

In the same 2011 timeframe, NERC and the Regional Entities moved towards a comprehensive "risk-based approach to the standards and compliance."[318] NERC's Planning Committee issued a draft *Risk-Based Reliability Compliance White Paper* that:

> set[] forth 18 specific recommendations to NERC and regional entities on how to incorporate a risk-based approach . . . to allow registered entities to focus more on reliability and less on administrative aspects of compliance . . . recogniz[ing] that the degree of monitoring and enforcement should be commensurate with the degree of impact the standards and violation has on the [bulk electric system].[319]

Consistent with this recalibration, NERC developed the "Find, Fix, Track, and Report" (FFT) processing method, which represented a significant step toward

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312. 132 FERC ¶ 61,217, at P 218.

313. *Id.*

314. 129 FERC ¶ 61,069, at P 10.

315. *See NERC*, 134 FERC ¶ 61,045 at P 2 (2011) (Every Reliability Standard is assigned a single violation risk factor (representing the potential risk to the reliability of the bulk-power system of a violation of a given Reliability Standard) and a range of violation severity levels (representing the degree to which an entity has violated the Reliability Standard based on the facts of the violation). NERC and the Regional Entities use violation risk factors and violation severity levels to calculate penalties for Reliability Standard violations). NERC's first administrative citation of penalty filing occurred on February 1, 2011, which included forty-one violations. *See NERC Administrative Citation Notice of Penalty*, FERC Docket No. NP11-104-000 (Feb. 1, 2011).

316. *NERC,* 134 FERC ¶ 61,157 at P 7 (2011).

317. The administrative citation notice of penalties process was only in place from January to August 2011. *See NERC's Report on the Compliance Enforcement Initiative*, FERC Docket No. RC11-6-000, at 7 (May 14, 2012).

318. *See Transcript of the Feb. 8, 2011 Technical Conference on Priorities for Addressing Risks to the Reliability of the Bulk-Power System*, FERC Docket No. AD11-6-000, at 61:2-3 (Feb. 2, 2011).

319. *Id.* at 57:14-24 (the referenced white paper is no longer available online).

risk-based enforcement while testing the limits of FERC's tolerance for streamlined documentation. And so, on September 30, 2011, NERC submitted to FERC a description of its plan to expand enforcement processing discretion in the form of "informational" filings of FFT spreadsheets for "possible violations" posing a minimal risk to the reliability of the bulk-power system and which the registered entity had already mitigated and remediated.[320] The program introduced three key innovations: (1) a risk-based treatment where FFT processing was available for minimal-risk violations; (2) streamlined documentation requirements to reduce paperwork filing requirements for minimal-risk violations; and (3) expedited resolution for faster processing for minimal-risk violations. To illustrate its program, NERC concurrently submitted 117 possible violations for "informational purposes only."[321] Concurrently, NERC also filed notices of penalty in a spreadsheet format (SNOPs), while stating NERC's expectation that FERC would "process all of those [notices of penalty] in accordance with the Commission's regulations set forth in 18 C.F.R. part 39.7."[322]

In March 2012, FERC conditionally accepted NERC's petition requesting approval of the initiative but also directed NERC to file on compliance additional implementation details for the FFT program.[323] FERC's acceptance came with important caveats. First, there must be clear criteria for FFT eligibility. Second, NERC must maintain transparency through public posting. Third, the mitigation of violations must be verified. And finally, NERC must demonstrate consistency in implementation across Regional Entities. FERC agreed with NERC and the Regional Entities that they "should have the flexibility to more efficiently process and track lesser risk violations in order to focus their resources on issues that pose the greatest risk to reliability."[324] Notably, FERC indicated that acceptance of the FFT program would "be the first step to a more efficient and effective compliance and enforcement process. As we gain further experience with the FFT program and review the data provided by NERC in its compliance and informational filings, we will consider and evaluate ways to improve the program."[325] FERC also directed NERC to provide the "principles it [would] employ in evaluating an entity's compliance history"[326] and how Regional Entity compliance staff would decide whether FFT treatment was appropriate during compliance monitoring activities (e.g., audits).[327]

NERC's May 2012 compliance filing in response to the March 15 FFT Order explained how it would consider compliance history and how NERC and the Regional Entities would determine which noncompliance matters deserve FFT processing. FERC accepted NERC's compliance filing but expressed concern

320. *NERC,* FERC Docket No. RC11-6-000, at 1 (Sept. 30, 2011).
321. *Id.* attach. 2, at 1.
322. *Id.* at 2.
323. *See* 138 FERC ¶ 61,193.
324. *Id*. at P 2.
325. *Id.* at P 41.
326. *Id.* at P 66.
327. 138 FERC ¶ 61,193, at PP 79-80.

whether the initiative could "be implemented in a consistent manner across the various Regional Entities."[328] FERC went on to state its expectations that "the Regional Entities will consistently apply the conditions outlined in the [March 15] FFT Order relating to qualification for FFT treatment, documentation of possible violations as FFTs, accountability and deterrence."[329]

The third attempt at streamlining being the charm, NERC has maintained the FFT program with the format of NERC recording FFTs in a spreadsheet that briefly describes each violation and related mitigation activities. NERC submits FFT spreadsheets monthly to FERC and publicly posts the spreadsheets on NERC's website.[330]

FERC's response to FFTs reflected its now familiar pattern of supporting efficiency while maintaining robust oversight. While accepting the FFT initiative as the first step to a more "efficient and effective compliance and enforcement process,"[331] FERC required NERC to provide additional implementation details to ensure consistent application across regions.

Subsequent to the initial petition, FERC accepted five modifications in 2013 and 2014 that expanded the FFT program.[332] First, in June 2013, FERC accepted NERC's first compliance filing directed by the March 15 FFT Order and approved four of the five NERC-proposed enhancements to the FFT program.[333] Specifically, FERC approved NERC's proposals to: (1) allow FFT treatment for some moderate risk possible violations, subject to NERC reporting on its implementation within one year; (2) remove the requirement that possible violations must be completely mitigated prior to submitting or posting possible violations as FFTs by the Regional Entities; (3) allow Regional Entities to publicly post FFTs on a public website on the last day of each month instead of NERC submitting a monthly informational filing to the Commission; and (4) review a representative sample of FFTs during the sixty day window following Regional Entities' monthly posting of FFTs on NERC's website.[334]

Even in approving expansions to the FFT program, FERC continued to focus on consistent implementation of the program across Regional Entities. This focus on regional consistency echoed FERC's earlier statement in Order No. 672 that "regional processes should be uniform unless regional facts, other than custom, require a difference."[335]

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328. *NERC*, 140 FERC ¶ 61,215 at P 12 (2012).

329. *Id.*

330. *See* NERC, ENFORCEMENT AND MITIGATION, https://www.nerc.com/pa/comp/CE/Pages/Enforcement-and-Mitigation.aspx (last visited Apr. 20, 2025).

331. 138 FERC ¶ 61,193, at P 41.

332. *NERC,* 143 FERC ¶ 61,253 at P 2 (2013) (Order accepting first annual FFT report and approving four of NERC's five proposed enhancements to FFT program); *NERC,* 148 FERC ¶ 61,214 (2014) (Order accepting second FFT annual report, approving expansion to moderate risk meeting certain criteria).

333. 143 FERC ¶ 61,253, at P 2. FERC rejected NERC's proposal to eliminate the requirement that senior officers attest that possible violations have been fully mitigated. *Id.* at P 26.

334. *Id.* at P 26.

335. Order No. 672, *supra* note 34, at P 737.

Regarding the various tools Regional Entities had implemented, FERC noted in the June 2013 order that, according to NERC, "it appears these efforts have not been sufficiently coordinated to produce consistent results."[336] FERC emphasized that "NERC should continue to work with the Regional Entities to further assure consistent implementation of the FFT program among the regions."[337] And in approving some extension of the FFT program to moderate risk possible violations, FERC noted that its decision "does not mean all moderate risk possible violations will be afforded FFT treatment."[338] As NERC sought to expand the FFT program, FERC orders continued to balance support for efficiency with insistence on consistent implementation.

A year later, NERC submitted its second FFT annual report.[339] FERC accepted the report and approved the continued FFT treatment of moderate risk possible violations and the inclusion of FFT candidates with longer mitigation timeframes. But it added that while "the FFT program has produced efficiencies in NERC's processing of compliance and enforcement matters, . . . it is difficult to gauge the direct benefit of the FFT program to Bulk-Power System reliability."[340]

In a November 2014 order[341] addressing NERC's second performance assessment,[342] FERC identified the need for NERC to improve enforcement processing and continue to reduce the caseload. The order noted that "the average violation age has only marginally improved, from 11.86 months in 2012 to 11.2 months in 2013."[343] FERC stated that "[i]n light of increased enforcement staffing and improved enforcement processes at NERC and the Regional Entities, we expect that violation processing times and the average violation age will continue to decline."[344] FERC also encouraged NERC to "continue to promote transparency in its enforcement programs . . . given the value of transparency in . . . providing assurance to the Commission, registered entities, and the public that the program is being fairly and consistently implemented across all regions."[345] Finally, to oversee the Regional Entities' delegated functions and ensure that the enforcement program would inform and improve reliability standards, FERC encouraged NERC to develop common performance measures and to tie metrics to ongoing reliability standards development in a "feedback loop," which, FERC asserted,

336. 143 FERC ¶ 61,253, at P 29.

337. *Id.*

338. *Id.* at P 32.

339. *See, e.g.*, 148 FERC ¶ 61,214, at P 1.

340. *Id.*

341. *See NERC,* 149 FERC ¶ 61,141 (2014).

342. 18 C.F.R. § 39.3(c).

343. 149 FERC ¶ 61,141, at P 38 (citing *NERC,* FERC Docket No. RR14-5-000, at 49, attach. 3 at 63 (July 21, 2014)).

344. *Id.*

345. *Id.* at P 72.

would "further support NERC's goal of developing results-based Reliability Standards."[346]

4. Reliability Assurance Initiative — The Next Step in the ERO's Journey Toward Risk-Based Compliance

Despite incremental improvements, NERC recognized the need for a more comprehensive transformation of its compliance and enforcement approach. So in 2014, NERC incorporated various risk-based elements into a consolidated risk-based program it referred to as the "Reliability Assurance Initiative" or RAI, which it described in a filing to FERC.[347] RAI represented NERC's most comprehensive attempt to embed risk-based principles not just in enforcement processing but throughout its compliance and enforcement program. This ambitious attempt to implement risk-based principles across all aspects of NERC and Regional Entity compliance and enforcement programs would also test the boundaries of FERC's willingness to accept reduced oversight in exchange for greater efficiency.

In its RAI Petition, NERC explained it was transitioning to a holistic and risk-based approach to its compliance and enforcement program that consisted of compliance monitoring, deterrence through enforcement, and (as a nod to FERC's phrasing in the 2014 Performance Assessment) a "feedback loop" to improve reliability standards.[348] For compliance monitoring, NERC and the Regional Entities would: (1) identify and prioritize risks to reliability based on "significance, likelihood, vulnerability, and potential impact";[349] (2) begin developing inherent risk assessments that would consider various entity-specific factors to "scope" monitoring activities, e.g., spot checks and audits, to the entity-specific risk;[350] and (3) begin evaluating registered entity volunteer's internal controls to further refine audit scopes and reviews.[351]

For enforcement, NERC added a new processing method — yet another layer of streamlined processing in addition to (not in lieu of) FFTs — called "compliance exceptions" for minimal risk noncompliance. NERC also proposed to implement a self-logging program that would allow certain registered entities to self-identify and mitigate noncompliance without subsequently reporting such noncompliance to Regional Entities, NERC, or the Commission.[352] NERC explained it planned to *not* publicly post compliance exceptions, which would instead stay as records with the Regional Entities. The Regional Entities would then provide

346. *Id.* at PP 52, 55.

347. *Informational Filing of the NERC Regarding Implementation of the Reliability Assurance Initiative*, FERC Docket No. RR15-2-000 (Nov. 3, 2014) [hereinafter RAI Petition].

348. *Id.* at 1.

349. *Id.* at 24.

350. *Id.* at 7.

351. RAI Petition, *supra* note 347, at 7.

352. *See id.* at 43 (Compliance exceptions are intended to identify "minimal risk instances of noncompliance that do not warrant a penalty and which would be recorded and mitigated . . . without triggering a formal enforcement action."); *see also id.* at 44 (NERC refers to compliance exceptions as "an alternative disposition method [that is] essentially the exercise of enforcement discretion.").

NERC with a non-public "summary of the record."[353] NERC asserted that "posting of individual accounts of trivial instances of noncompliance does not provide a benefit and diverts resources . . . that should be allocated elsewhere."[354] The self-logging program, NERC averred, would allow registered entities "with demonstrated effective management practices to self-identify, assess, and mitigate instances of noncompliance to self-log minimal risk noncompliance that would otherwise be individually self-reported. Properly logged items are entitled to the presumption of being resolved as compliance exceptions unless there are additional risk factors involved."[355]

In February 2015, FERC ushered in the new risk-based era of compliance and enforcement by conditionally accepting NERC's RAI while also directing NERC to revise its Rules of Procedure to "articulate the RAI concepts and programs."[356] FERC also set forth conditions on the implementation and continued development of RAI to ensure it was implemented in "a reasonable and transparent manner, and that the [FERC] will maintain a meaningful oversight role."[357] FERC added that it supported additional flexibility and that "NERC's continued experience with compliance monitoring and enforcement . . . supports the significant shift to the risk-based approach" and that FERC would continue to "support an approach to compliance monitoring and enforcement that focuses time and effort on higher-risk issues while still identifying, correcting, and tracking lesser-risk issues."[358]

As for the revisions to the Rules of Procedure, FERC did not consider existing language in NERC's Rules of Procedure to be "an adequate basis for implementing the major shift in approach represented by the RAI framework."[359] FERC instead required that the NERC Rules of Procedure "at a minimum, recognize the existence of the RAI processes, articulate basic RAI concepts and define fundamental RAI elements, and require Commission approval for significant changes in RAI as NERC further develops and implements its risk-based approach."[360]

FERC's conditional acceptance of RAI established clear parameters for future program evolution. In the 2015 RAI Order, FERC patently rejected NERC's assertion that it would not publicly file or post compliance exceptions, finding it counter to FERC's "consistent view with regard to transparency in compliance

353. *Id.* at 44.

354. *Id.* at 53.

355. RAI Petition, *supra* note 347, at 40.

356. *NERC,* 150 FERC ¶ 61,108 at PP 1, 2 (2015).

357. *Id.* at P 26.

358. *Id.* at P 27.

359. *Id.* at P 29 (NERC had submitted its RAI Petition for informational purposes only, not seeking FERC approval. FERC, however, opted to issue an order as it disagreed with NERC's premise that the RAI initiative fit completely within the existing Rules of Procedure and that there was no need for FERC to weigh in on the matter).

360. 150 FERC ¶ 61,108, at P 30.

monitoring and enforcement matters."[361] FERC added that "transparency in compliance and enforcement matters is beneficial to educate industry and provide additional oversight of the ERO."[362] FERC also conditioned its approval of compliance exceptions on Regional Entities "assessing any subsequent noncompliance of the same or closely-related Standards and Requirements to determine whether the registered entity should continue to qualify for compliance exception treatment regarding the subject of the repeat noncompliance."[363] Finally, FERC found it "unreasonable to grant the flexiblity [sic] inherent in self-logging without some level of formal review of an entity's internal controls" and conditioned its approval of RAI on "NERC requiring some level of formal review of an entity's internal controls before granting the flexibility to self-log instances of noncompliance."[364]

NERC's subsequent compliance filings demonstrate the iterative nature of developing a comprehensive risk-based program. While FERC had supported incremental improvements through FFT and other mechanisms, the wholesale transformation proposed by RAI required careful attention to maintaining appropriate oversight and transparency.

In May and then July of 2015, respectively, NERC submitted details on its oversight processes and metrics that it would use to track RAI implementation and revisions to its Rules of Procedure articulating its RAI concepts[365] in accordance with FERC's RAI Order.[366] In late 2015, FERC conditionally accepted the compliance filings and directed further modifications to NERC's Rules of Procedure.[367] FERC found that while NERC had described its measures of success for the program, it did not include the "types of data driven metrics it will track as the RAI program develops" to allow evaluation of the program over time.[368] Again, FERC concentrated on consistency — directing that NERC "provide its assessment of the Regional Entities' consistency in the implementation of [a] risk-based [compliance and enforcement program]" in its annual reports.[369]

For NERC's incorporation of RAI concepts into its Rules of Procedure, FERC approved revisions that defined key RAI terms (compliance exceptions, self-logging, internal controls evaluations, etc.) and revisions that would "(1) highlight the types of data NERC uses to identify annual risk elements; (2) explain that the type and frequency of the compliance monitoring tools appropriate for a particular entity is based on that entity's specific reliability risk; and (3) include the

361. *Id.* at PP 37-38.

362. *Id.* at P 36.

363. *Id.* at P 45 (citing *NERC*, 132 FERC ¶ 61,182 at PP 5-8 (2010) (giving guidance on the assessment of compliance history for prior violations of the same or closely-related reliability standards and requirements)).

364. 150 FERC ¶ 61,108, at PP 41-42.

365. *See, e.g.*, *NERC*, FERC Docket No. RR15-2-001 (May 20, 2015); *NERC*, FERC Docket No. RR15-2-002 (July 6, 2015).

366. 150 FERC ¶ 61,108, at PP 30, 32, 39, 42-43.

367. *NERC,* 153 FERC ¶ 61,130 (2015).

368. *Id.* at P 32.

369. *Id.* at P 21.

principles related to the exercise of enforcement discretion."[370] But FERC noted several gaps where NERC had failed to make conforming changes reflecting the risk-based program. Thus, FERC directed NERC to make additional modifications to its Rules of Procedure, most notably to require the public posting of compliance exceptions.[371]

While to this point FERC had approved most of NERC's proposals to improve the efficiency and risk-based focus of its compliance and enforcement program, in more recent years FERC has rejected certain NERC proposals as insufficient. These orders began to stake the boundaries of acceptable streamlining more clearly. Two key decisions in 2017 and 2021 would crystallize the limits of FERC's flexibility regarding core oversight functions and transparency requirements.

In 2017, NERC proposed changes to its compliance and enforcement program that began to find the limit to FERC's willingness to allow a gain in efficiency at the expense of core oversight functions. That year FERC denied two proposed changes contained in NERC's annual compliance and enforcement program report filing: (1) eliminating public posting of compliance exceptions identified through self-logging and (2) allowing compliance exceptions to be used for certain moderate risk violations, which NERC would otherwise likely process as FFTs.[372] FERC rejected NERC's proposal to end the public posting of self-logged compliance exceptions, explaining the benefits of public postings. FERC added that it had already considered and rejected NERC's claim that "[p]ublic posting of self-logged noncompliance potentially diverts the public's attention from the review of higher risk matters" and found it had "no reason to reconsider that argument."[373] FERC also rejected NERC's proposed expansion of the compliance exception program to include some moderate risk noncompliance stating that "[c]onsistent with prior orders regarding the [compliance and enforcement program], the compliance response should generally reflect to some extent the difference in reliability risks between serious, moderate, and minimal risk instances of noncompliance."[374]

Despite the limitations set by FERC in denying the two proposals, NERC continued seeking ways to enhance the efficiency of its compliance and enforcement program within FERC's established parameters. Most recently, in 2021, NERC sought approval of revisions to the NERC Rules of Procedure to "enhance various [compliance and enforcement] practices to allow for greater attention to the highest risk noncompliance and entities while also removing some of the unintended or unnecessarily burdensome administrative limitations in the current

370. *Id.* at P 10.

371. 153 FERC ¶ 61,130, at P 41.

372. *See NERC,* 161 FERC ¶ 61,187 at P 10 (2017).

373. *Id.* at P 30 n.50.

374. *Id.* at P 37.

rules."[375] Its proposal to modify audit frequency and compliance exception processing tested whether the accumulated experience with risk-based approaches had earned greater flexibility in oversight requirements.

NERC described its proposal to change compliance audits as a shift from an "arbitrary, time-based approach" to a more flexible, "real-time" risk-based approach.[376] Among other things, NERC proposed changes to "increase the efficiency of resolving minimal risk noncompliance" by (1) exempting self-logged items from the timing requirements for initial reviews and reporting to FERC[377] and (2) eliminating the monthly submission and review process for compliance exceptions, replacing it with NERC and FERC reviews by periodic sampling.[378]

FERC denied the above proposed changes (while approving other revisions).[379] Specifically, FERC found some of the changes would "remove from [FERC's] review much of the ERO's enforcement of Reliability Standards" and thus was inconsistent with FERC's oversight obligations.[380] Moreover, FERC rejected eliminating minimum periodicity of audits for reliability coordinators, balancing authorities, and transmission operators as inconsistent with the requirement for "rigorous audits of compliance."[381] According to FERC, its concerns were "further exacerbated by the proposed reduction in evidence retention and no set audit period."[382] FERC also rejected eliminating reporting of self-logged noncompliance as inconsistent with the requirement for promptly reporting violations and alleged violations.[383] FERC explained that NERC had failed to address precedent requiring visibility of all noncompliance, including multiple prior attempts to reduce transparency.[384]

5. The Current State of Compliance and Enforcement Affairs

Just as FERC has supported risk-based approaches while maintaining core oversight requirements, it has allowed Regional Entities greater discretion in compliance and enforcement while insisting on consistency of implementation. This shift toward greater Regional Entity discretion is particularly evident in risk assessment and audit scoping. Where Regional Entities once followed rigid annual implementation plans that specified which standards to audit for each registered entity type, they now have substantial discretion in how they conduct inherent risk assessments, develop and implement compliance oversight plans, determine audit scope and frequency beyond minimum requirements, select monitoring tools, and

375. *NERC,* FERC Docket No. RR21-10-000, at 2 (Sep. 29, 2021).

376. *Id.*

377. *Id.* at 3.

378. *Id.*

379. *NERC,* 179 FERC ¶ 61,129 (2022).

380. *Id.* at P 16.

381. *Id.* (citing 18 C.F.R. § 39.7(a)).

382. *Id.*

383. 179 FERC ¶ 61,129, at P 17 (citing 18 C.F.R. § 39.7(b)).

384. *Id.* at PP 45-47 (citing *e.g.*, 161 FERC ¶ 61,187, at P 32; 150 FERC ¶ 61,108, at PP 16, 47; 149 FERC ¶ 61,141, at P 38).

evaluate registered entity internal controls. FERC has remained insistent, however, on the need for a strong ERO and its central role since the beginning, emphasizing that "the ERO may delegate its enforcement responsibilities to a Regional Entity, but the ERO must retain oversight responsibility for enforcement authority that is delegated."[385] FERC maintains important guardrails on Regional Entity discretion such as continuing to require reporting of all noncompliance to NERC and FERC—illustrating the ongoing tension and need to balance regional flexibility, ERO-wide consistency, and NERC and FERC oversight.

FERC's firm rejection of reduced oversight measures in 2022 reinforced the boundaries established in its previous orders. While supporting risk-based approaches that maintained robust oversight, FERC remained unwilling to accept changes that would "remove from [FERC's] review much of the ERO's enforcement of Reliability Standards."[386] This context has informed NERC's next round of proposed improvements.

At the end of 2024, NERC filed a new set of initiatives for continuing enforcement efficiency improvements. Specifically, in a November 2025 supplement to its 2024 five-year performance assessment, NERC offered three key proposals: (1) an abeyance periods for certain newly modified reliability standards; (2) streamlining compliance exception practices; and (3) analysis of data to identify trends, themes, and recommendations.[387] First, NERC explained that it would introduce an abeyance period after certain[388] new and modified reliability standards become effective in order to "encourage entities to share observations and experiences through implementation of new standards without fear of potential noncompliance."[389] NERC asserted that improvements to the processing of compliance exceptions are needed to improve the feedback loop between the compliance and enforcement program and reliability standards development. Specifically, ensuring that information on noncompliance and underlying causes can identify needed improvements to or new reliability standards, i.e., the "feedback loop" that has appeared as a consistent theme to NERC's risk-based initiatives.[390]

Notably, NERC has not proposed reduced oversight since the 2017 and 2022 rejections and has assured FERC that it will continue to receive and review all minimal risk noncompliance — albeit in an abbreviated format.[391] FERC issued an order accepting NERC's 2024 performance assessment filing but did not discuss in detail the initiatives set forth in NERC's supplemental filing.[392]

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385. 116 FERC ¶ 61,062, at P 294; 179 FERC ¶ 61,129, at P 50.

386. 179 FERC ¶ 61,129, at P 16.

387. *NERC,* FERC Docket No. RR24-4-001, at 3 (Nov. 8, 2024) (NERC Supplemental Filing).

388. *Id.* at 12-13 (NERC explains it will consult with the Regional Entities on "well-defined criteria" such as priority of projects, new and emerging issues, and the number of significant revisions to identify, prior to any ballot periods, which draft standards maybe good candidates for abeyance.).

389. *Id.* at 10.

390. *Id.* at 23, 25.

391. FERC Docket No. RR24-4-001, at 26.

392. *See NERC*, 189 FERC ¶ 61,211 at P 24 (2024).

6. Threading the Needle — Balancing Regional Autonomy and ERO Oversight

The current risk-based era reflects FERC's approach to meaningful oversight within a risk-based framework. FERC allows efficiency measures that maintain visibility into all violations while preserving its ability to assess NERC and Regional Entity decisions. Transparency through public posting remains, as FERC has consistently denied multiple proposals to lessen transparency. The trend toward NERC granting greater Regional Entity autonomy also appears likely to continue. Success will likely depend on ensuring that transparency and consistency remain a priority and maintaining appropriate balance through clear frameworks for regional discretion, robust oversight mechanisms, effective coordination tools, consistent reliability outcomes, and transparent decision-making processes.

Because FERC has supported elements of the risk-based compliance and enforcement program that increase efficiencies over the last two decades, that does not mean that FERC will approve additional expansion without corresponding oversight.[393] On the contrary, as discussed in the preceding section and in FERC orders going back to Order No. 672, FERC has been clear on the need for improvements relating to oversight of the Regional Entities: consistency between Regional Entities, balanced transparency, and NERC audits of the Regional Entities to provide reasonable assurance that Regional Entities are consistently and effectively implementing the compliance and enforcement program.[394]

Occasionally overlooked is the importance that FERC has attached to the need for metrics to evaluate success of the risk-based compliance monitoring and enforcement processes. For example, in its response to NERC's RAI compliance filing, FERC directed NERC to develop success factors and metrics enabling NERC and FERC to evaluate the success of the RAI program: (1) a thorough analysis of lessons learned; (2) metrics showing how NERC intends to measure the success of the risk-based approach, in particular, how it has enhanced reliability; and (3) metrics showing "improvements to reliability, such as faster detection and remediation times for minor violations."[395] FERC issued similar directives in its

393. *See, e.g.*, 138 FERC ¶ 61,193, at P 73 (discussing Commission plans to survey a random sample of FFTs submitted each year to gather information on how the FFT program is working); *NERC*, FERC Docket No. RC11-6-004, at 1 (Nov. 13, 2015) (delegated letter order) (accepting NERC's proposal to combine the evaluation of compliance exceptions with the annual sampling of FFT noncompliance); *Notice of Staff Rev. of Enf't Programs*, FERC Docket No. RC11-6-018 (Aug. 16, 2024). Docket No. RC11-6 contains the record of annual sampling of compliance exceptions and FFT noncompliance performed since 2011.

394. *See, e.g.*, *NERC,* 174 FERC ¶ 61,030 at PP 18-21 (2021) (finding that the ERO had failed to complete oversight audits of the Regional Entities and that a replacement approach to auditing the Regional Entities "would appear to erode the ERO/Regional Entity structure required by Order No. 672").

395. *See, e.g.*, Order No. 672, *supra* note 34, at P 187 (explaining that NERC's periodic performance assessments should employ "regular and systematic measurement and reporting" of the ERO's performance); 150 FERC ¶ 61,108, at P 32 (finding that NERC did not include data-driven metrics adequate for FERC or NERC to evaluate the RAI program and directing NERC to develop such success factors and metrics); 153 FERC ¶ 61,130, at P 33 (requiring NERC to demonstrate that risk-based approaches enhance reliability through metrics showing "improvements to reliability, such as faster detection and remediation times for minor violations").

2014 and 2024 orders on NERC's performance assessments.[396] FERC attaches value to such metrics because — with consistent reporting — they provide an objective and systematic measure of the effectiveness of the compliance and enforcement program reforms.

Based on FERC's orders and NERC's historical progression, several potential developments in the risk-based compliance and enforcement program may emerge. NERC will likely seek further streamlining of minimal-risk violation processing, although future proposals will need robust data demonstrating that efficiency gains have not compromised effectiveness and that there have been some improvements to reliability. The ERO could provide this data by developing better metrics for measuring the effectiveness of compliance and enforcement oversight activities, moving beyond simple violation counts to more meaningful indicators of reliability improvement.

NERC may propose expanding the self-logging program and compliance exception treatment to apply to a broader range of noncompliance. But given FERC's denial of NERC proposals that would reduce oversight measures[397] NERC should gauge whether such future proposals maintain meaningful Commission oversight and NERC's oversight of the Regional Entities. Success metrics and consistent Regional Entity implementation are likely to be crucial prerequisites.

The success of future reforms will likely depend on NERC's ability to show that efficiency gains directly correlate with enhanced reliability outcomes, rather than simply reduced administrative burden.

The distinction between administrative efficiency versus reliability improvements is important because FERC has consistently emphasized that the fundamental purpose of the enforcement program is to improve grid reliability, not just quickly process violations.[398] For example, in rejecting certain program revisions, FERC expressed concern that NERC was focusing too much on administrative efficiency without demonstrating corresponding reliability benefits.[399] This is rooted in Order No. 672's statement that "the fundamental goal of mandatory, enforceable Reliability Standards and related enforcement programs is to promote behavior that supports and improves Bulk-Power System reliability."[400]

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396. *See, e.g.*, 149 FERC ¶ 61,141, at PP 54-56 (finding that future assessments "could be improved by including regular and systematic measurements of [NERC's] performance, including setting performance targets" and directed NERC report on metrics, among other things, on consistency, coordination, and efficiency in the NERC CMEP); 189 FERC ¶ 61,211, at P 38 (directing "NERC to develop a comprehensive suite of metrics that would allow for the objective, consistent, and transparent assessment of ERO performance over the course of each five-year reporting period in two key areas: (1) the Reliability Standards development program, and (2) the implementation and oversight of the CMEP").

397. *See, e.g.*, 179 FERC ¶ 61,129, at P 18.

398. 153 FERC ¶ 61,130, at P 33 (Specifically, FERC directed NERC to develop metrics showing: (1) a thorough analysis of lessons learned; (2) how the risk-based approach enhanced reliability; and (3) concrete improvements like faster detection and fix times for violations).

399. 179 FERC ¶ 61,129, at P 32.

400. Order No. 672, *supra* note 34, at P 455.

IV. FINAL WORD

The twentieth anniversary of EPAct 2005 is a worthy milestone to reflect on the implementation of the electric grid reliability oversight program set forth in section 215 of the FPA. NERC as the certified ERO has developed, and FERC has approved, a comprehensive suite of mandatory and enforceable standards designed to protect the reliable operation of the bulk-power system. Proactive compliance oversight through a risk-based model ensures that electric grid stakeholders engage in the proper actions to assure grid reliability — and take mitigating action upon discovering noncompliance. As anticipated by statute, the reliability oversight processes are dynamic, allowing for the development of new and modified standards as proven necessary to address reliable concerns as they emerge.

This is not to say that all is perfect, as there have certainly been fits and starts over the past two decades in the development and implementation of the reliability program. One pronounced concern is the ongoing tensions between the roles of FERC, NERC as the ERO, and the electric grid stakeholders that both participate in standards development and ultimately comply with the mandatory requirements of those standards. While FERC precedent addressing these roles has partially resolved such tensions, they tend to flare as reliability challenges emerge that demand creative and timely solutions. This can be observed as NERC seeks to address the reliability challenges associated with the changing resource mix and extreme weather. As NERC convenes its standards development process, FERC asserts itself with directives. Stakeholders seek their say in shaping the standards before NERC and FERC. While naysayers can complain, and certain incremental improvements to the process can be made, this three-way tension is, to a large extent, a product of the underlying statutory text of section 215 of the FPA, which assigns related roles to FERC, the ERO, and stakeholders.

Working with the statute as enacted by Congress, FERC's initial reliability rulemaking, Order No. 672, along with FERC's orders certifying NERC as the ERO and approving the first suite of mandatory reliability standards, provide a sound foundation for the underlying policies that underpin the reliability program. While subsequent FERC orders have refined these policies, the early precedents remain valid today, and continue to provide a consistent approach to administering the mandatory reliability program. Certainty is never guaranteed. However, one who minds the FERC precedent as assessed in this article is likely to discern with some predictability the Commission's approach to addressing future grid reliability concerns as they arise.

From NERC's initial transformation of voluntary operating guidelines into mandatory reliability standards, through the current challenges of addressing extreme weather and proliferation of inverter-based resources across the country, the standards development process reflects an ongoing balance between technical expertise and the need for decisive and timely action. While FERC respects NERC's role as a technical standard-setter, FERC has not hesitated to assert its statutory authority to direct new or modified standards when necessary to address reliability gaps. This dynamic — established in FERC's early reliability orders and refined through two decades of precedent — continues to shape how the ERO regime adapts to emerging reliability challenges.

Emerging challenges like cybersecurity threats and the integration of new technologies may require more flexible approaches to jurisdiction, reliability standards, and compliance and enforcement focused on individual and aggregate entities while maintaining transparency and consistency across the Regional Entities. The success of these future adaptations will depend on NERC's ability to demonstrate concrete reliability improvements through clear metrics while preserving the core principles of meaningful FERC oversight and consistent Regional Entity implementation.