UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	))	**Docket No. RR09-6-003**

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION STANDARDS REPORT, STATUS AND TIMETABLE FOR ADDRESSING REGULATORY DIRECTIVES

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION STANDARDS REPORT, STATUS AND TIMETABLE FOR ADDRESSING REGULATORY DIRECTIVES

The North American Electric Reliability Corporation ("NERC") hereby submits the 2025 NERC Standards Report, Status and Timetable for Addressing Regulatory Directives (the "Directives Report") in accordance with Section 321.6 of the NERC Rules of Procedure ("ROP").[1] This annual report summarizes the progress made and plans for addressing the Reliability Standard-related directives issued by applicable governmental authorities.[2]

Section 321.6 of NERC's ROP requires NERC, on or before March 31 of each year, to file a report with applicable governmental authorities on the status and timetable for addressing each outstanding regulatory directive.

I. SUMMARY

As discussed below, since NERC's 2024 annual directives report filed on March 22, 2024, the Commission has issued seven new directives related to Reliability Standards. In that time, NERC filed petitions with the Commission addressing seven Reliability Standard-related directives.[3] Currently, there are 13 outstanding directives related to Reliability Standards or issued in orders approving Reliability Standards. NERC is addressing eight of these directives through standards development projects. One directive relates to a work plan for ongoing and anticipated

[1] The Federal Energy Regulatory Commission ("FERC" or "Commission") approved Rule 321 on March 17, 2011 in the above captioned docket. *N. Am. Elec. Reliability Corp.*, *Order on Compliance Filing*, 134 FERC ¶ 61,216 (2011).

[2] For completeness, NERC has included directives related to registration of entities in this report. NERC has excluded directives related to financial or governance matters unless specifically related to the Reliability Standards program.

[3] *See* Table 1 below for the directives that were addressed since March 22, 2024.

work. The other outstanding directives relate to data gathering, registration, or the performance of research or studies and are being addressed through other mechanisms.[4]

The 2025-2027 Reliability Standards Development Plan ("RSDP") provides a plan to address the remaining Reliability Standard-related directives. NERC's annual RSDP establishes priorities related to Reliability Standards to help ensure that those issues that most directly impact Bulk-Power System reliability are addressed first. Directives to create new or modify existing Reliability Standards are assigned to existing or future development projects that are prioritized by the NERC Standards Committee and are reflected in the RSDP. The 2025-2027 RSDP was filed with the Commission on December 10, 2024.[5]

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

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III. COMPLETED DIRECTIVES

The tables below contain a status update on the FERC directives. Table 1 contains a complete list of the directives NERC addressed since the 2024 directives report. Table 2 in the next section provides a list of the outstanding directives and an update on NERC's plans to address those directives. FERC Order No. 901 includes six (6) categories of directives, listed below. Please refer to Table 3 in Attachment A for the full details regarding each category and the subset list of elements directed by the Commission.

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[4] *See* Table 2 below for a list of outstanding directives and their status.

[5] *NERC Informational Filing of Reliability Standards Dev. Plan 2025–2027*, Docket Nos. RM05-17-000, RM05-25-000, RM06-16-000 (Dec. 10, 2024), https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/2024-2026%20RSDP%20FERC%20Filing.pdf.

Table 1: Directives Addressed since March 22, 2024

Directive Summary	Date Issued/Docket No.	Standards Project Name	Status
***N. Am. Elec. Reliability Corp.*, Order Directing Informational Filings Regarding NERC Standard Drafting Projects** (170 FERC ¶ 61,109) "NERC is directed to file quarterly status updates on Project 2016-02 and Project 2019-02, on an informational basis, starting 120 days from the date of issuance of this order."	2/20/2020 RD20-2-000	2016-02 Modifications to CIP Standards 2019-02 BES Cyber System Information Access Management	Project 2016-02 filed in Docket No. RM24-8-000 on July 10, 2024. Project 2019-02 completed in 2021 with the development of Reliability Standards CIP-004-7 and CIP-011-3, approved by the Commission on December 7, 2021 in Docket No. RD21-6-000.
Order No. 887, *Internal Network Security Monitoring for High and Medium Impact Bulk Electric System Cyber Systems* (182 FERC ¶ 61,021) **INSM Standard(s)** ¶ 24 "[W]e direct NERC to develop new or modified CIP Reliability Standards that require applicable responsible entities to implement INSM for all high impact BES Cyber Systems with and without external routable connectivity and medium impact BES Cyber Systems with external routable connectivity.... [W]e direct that NERC submit responsive new or modified CIP Reliability Standards within 15 months of the effective date of this final rule."	1/19/2023 RM22-3-000	Project 2023-03 CIP Internal Network Security Monitoring	NERC filed CIP-015-1 in Docket No. RM24-7-000 on June 24, 2024.

ROP IBR Registration compliance filing (187 FERC 61,196) P1: "We also direct NERC to submit a compliance filing, within 60 days of the date of this order explaining whether the NERC proposal would apply to the registration of owners and operators of battery storage resources, fuel cells, and all other IBR technologies, and if not, what NERC's plan is to include such resources." P 42: "While we approve NERC's proposed Rules of Procedure revisions for the reasons discussed above, we note that NERC's proposed revisions to the generator owner and generator operator registry criteria to add Category 2 generator owners and Category 2 generator operators refer to "non-BES inverter based generating resources." However, unregistered IBRs can include battery storage resources that have either an individual or aggregate material impact on the reliability of the Bulk-Power System, which could be excluded from NERC's proposal because of the inclusion of the word "generating" in the term "non-BES inverter based generating resources."" P 43: "For example, the IBR Registration Order provides a non-exhaustive list of IBRs (including battery storage resources)100 identified as examples of the class of technology associated with the reliability concerns described therein. Therefore, it is important to ensure owners and operators of battery storage resources, or any other IBR technologies, are registered. Accordingly, we direct NERC to submit a compliance filing within 60 days of the date of	6/27/2024 RR24-2-000		NERC filed the compliance filing in Docket No. RR24-2-000 on August 26, 2024.

Directive Summary	Date Issued/Docket No.	Standards Project Name	Status
this order explaining whether the NERC proposal would apply to the registration of owners and operators of battery storage resources, fuel cells, and all other IBR technologies, and if not, what NERC's plan is to include such resources."			
Order No. 896, Transmission System Planning Requirements for Extreme Weather (183 FERC ¶ 61,191) ¶ 25 "[W]e… direct NERC to submit a new Reliability Standard or modifications to Reliability Standard TPL-001- 5.1 requiring transmission system planning for extreme heat and cold weather events that impact the Reliable Operation of the Bulk-Power System." ¶ 188 "We direct NERC to submit a new or modified Reliability Standard within 18 months of the date of publication of this final rule in the Federal Register. Further, we direct NERC to propose an implementation timeline for the new or modified Reliability Standard, with implementation beginning no later than 12 months after the effective date of a Commission order approving the proposed Reliability Standard."	6/15/2023 RM22-10-000	Project 2023-07	NERC filed TPL-008-1 in Docket No. RD25-4-000 on December 17, 2024.

Directive Summary	Date Issued/Docket No.	Standards Project Name	Status
Order No. 851, Geomagnetic Disturbance Reliability Standard (165 FERC ¶ 61,124) ¶ 30: "[W]e direct NERC to prepare and submit a report addressing how often and why applicable entities are exceeding corrective action plan deadlines as well as the disposition of time extension requests. The report is due within 12 months from the date on which applicable entities must comply with the last requirement of Reliability Standard TPL-007-2."	11/15/2018 RM10-8-000	2019-01 Modifications to TPL-007-3	NERC filed the Informational Filing in Docket Nos. RM18-8-000 & RD20-3-000 on December 6, 2024.
Order No. 901, Reliability Standards to Address Inverter-Based Resources (185 FERC ¶ 61,042) **2 of 6: IBR Performance Requirements (registered IBRs) Due Nov. 4, 2024** ¶ 7 "[B]y November 4, 2024, NERC must submit new or modified Reliability Standards that establish IBR performance requirements, including requirements addressing frequency and voltage ride through, post-disturbance ramp rates, phase lock loop synchronization, and other known causes of IBR tripping or momentary cessation."	10/19/2023 RM22-12-000	Multiple projects	NERC tracked this deadline as Milestone 2. Filed responsive standards in multiple dockets on November 4, 2024. (RD25-1-000; RD25-2-000; RD25-3-000; RM25-3-000). Full details and subdirectives for all Order No. 901 categories of directives are detailed in Table 3 in Attachment A.

Directive Summary	Date Issued/Docket No.	Standards Project Name	Status
Order No. 901, *Reliability Standards to Address Inverter-Based Resources* (185 FERC ¶ 61,042) **3 of 6: IBR Disturbance Monitoring Data Sharing and Post-Event Performance Validation (registered IBRs) Due Nov. 4, 2024** ¶ 7: "NERC must also submit, by November 4, 2024, new or modified Reliability Standards that require disturbance monitoring data sharing and post-event performance validation for registered IBRs."	10/19/2023 RM22-12-000	Multiple projects	Complete. NERC tracked this directive under Milestone 2. Filed responsive standards in multiple dockets on November 4, 2024. (RD25-1-000; RD25-2-000; RD25-3-000; RM25-3-000). Full details and subdirectives for all Order No. 901 categories of directives are detailed in Table 3 in Attachment A.

Directive Summary	Date Issued/Docket No.	Standards Project Name	Status
Order No. 817, Transmission Operations Reliability Standards and Interconnection Reliability Operations and Coordination Reliability Standards (153 FERC ¶ 61,178) ¶ 27: While it appears that regional discrepancies exist regarding the manner for calculating IROLs, we accept NERC's explanation that this issue is more appropriately addressed in NERC's Facilities Design, Connections and Maintenance or "FAC" Reliability Standards. NERC indicates that an ongoing FAC-related standards development project - NERC Project 2015-09 (Establish and Communicate System Operating Limits) - will address the development and identification of SOLs and IROLs. We conclude that NERC's explanation, that the Project 2015-09 standard drafting team will address the clarity and consistency of the requirements for establishing both SOLs and IROLs, is reasonable. Therefore, we will not direct further action on IROLs in the immediate TOP and IRO standard-related rulemaking. However, when this issue is considered in Project 2015-19, the specific regional difference of WECC's 1,000 MW threshold in IROLs should be evaluated in light of the Commission's directive in Order No. 802 (approving Reliability Standard CIP-014) to eliminate or clarify the "widespread" qualifier on "instability" as well as our statement in the Remand NOPR that "operators do not always foresee the consequences of exceeding such SOLs and thus cannot be sure of preventing harm to reliability."	11/19/2015 RM15-16-000	n/a	While not a formal directive, NERC explained in its June 28, 2021 petition for approval of SOL Standards developed under Project 2015-19, filed in Docket No. RD22-2-000, how it will address this issue going forward (*see* petition at p. 10). A joint NERC/Regional Entity (NERC and all Regional Entities) activity was initiated to review the methods for establishing IROLs. All RCs in the U.S. participated. FERC staff observed the activity. Virtual interviews were held with all participating RCs to gain an in-depth understanding of their IROL methodology and alignment with the MEITF (Methods for Establishing IROLs Task Force) guidance. The report was published on NERC's website here in July 2024.

IV. ONGOING DIRECTIVES

Table 2 below shows the currently outstanding directives from FERC related to Reliability Standards. A full list of directives related to FERC Order No. 901 is collected as Table 3 in Attachment A.

Table 2: Ongoing Directives

Order & Directive Summary	Date & Docket	Standards Project Name	Status
Order No. 706, *Mandatory Reliability Standards for Critical Infrastructure Protection* (122 FERC ¶ 61,040) (S-Ref 10820) ¶ 51: "[The Commission] believe[s] 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 Bulk-Power System…. 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."	1/18/2008 RM06-22-000	n/a	Ongoing. The ERO Enterprise is reviewing this question, and the potential impact that Distributed Energy Resources ("DERs") and demand side aggregators may have on reliability of the Bulk-Power System. The DER Aggregator Study, anticipated to be released Q2 of 2025, discusses the comparison of the demand response aggregation entity with the additional introduction of the DER Aggregator as defined in FERC Order 2222. This analysis took information from the Independent System Operators and Regional Transmission Organizations ("ISOs" and "RTOs") in a voluntary survey with a complete response from all ISOs and RTOs.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
***N. Am. Elec. Reliability Corp.*, Order Approving Extreme Cold Weather Reliability Standards EOP-011-3 and EOP-012-1 and Directing Modification of Reliability Standard EOP-012-1** (182 FERC ¶ 61,094) **2 of 2: EOP-012 Reporting Work Plan** ¶ 94: "[W]e direct that NERC… work with Commission staff to develop and submit a plan within 12 months of the issuance of this order explaining how it will gather data and submit an analysis that will allow the Commission to understand the efficacy of, and monitor the ongoing risk posed by: (1) proposed technical, commercial, or operational constraint provisions in EOP-012-1, Requirements R1, R6, and R7; and (2) actual performance of freeze protection measures during future extreme cold weather events." ¶ 95: "To provide the Commission with an ongoing assessment of the risk to the Bulk-Power system, NERC's plan should include an annual informational filing to the Commission beginning 12 months after the mandatory and enforceable date of the Standard." [details included in PP 94-96]	2/16/2023 RD23-1-000	n/a	P 94: NERC submitted a Cold Weather Data Collection compliance filing on February 16, 2024 in Docket No. RD23-1-002. P 95: Implementation of work plan is on track; NERC will submit the initial annual informational filing on October 1, 2025.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
Registration of Inverter-Based Resources (181 FERC ¶ 61,124) **2 of 2: Progress Updates, Implementation of Work Plan** ¶ 35: "Once the Commission approves the work plan, we direct NERC to file progress updates every 90 days from the date of approval documenting NERC's progress. We direct NERC to complete implementation of the work plan (whether by working with stakeholders to change the BES definition, changes to its registration program, or some other solution) within 12 months from the date of Commission approval of the work plan and to complete the identification of unregistered IBR owners and operators within 24 months from the date of Commission approval, so that they are registered and required to comply with applicable Reliability Standards within 36 months from the date of Commission approval of the work plan."	11/17/2022 RD22-4-000	n/a	Ongoing. NERC submitted its IBR Registration Work Plan, which was approved by the Commission on May 18, 2023 in Docket No. RD22-4-001. NERC filed 90-day updates on 5/10/24, 8/9/24, 11/7/24, and 2/5/25 in Docket No. RD22-4-001. The next update will be filed May 6, 2025. NERC submitted proposed revisions to the NERC Rules of Procedure to address the registration of inverter-based resources on March 19, 2024 in Docket No. RR24-2-000.
Order No. 901, *Reliability Standards to Address Inverter-Based Resources* (185 FERC ¶ 61,042) **4 of 6: Data Sharing (all IBRs)** **Due Nov. 4, 2025** ¶ 7: "[B]y November 4, 2025, NERC must submit new or modified Reliability Standards addressing the interrelated directives concerning: (1) data sharing for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate; and (2) data and model validation for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate."	10/19/2023 RM22-12-000	Multiple projects	Ongoing. NERC is tracking this directive under Milestone 3. Standards are being developed under Projects 2020-06, 2021-01, and 2022-02. Full details and subdirectives for all Order No. 901 categories of directives are detailed in Table 3 in Attachment A.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
Order No. 901, *Reliability Standards to Address Inverter-Based Resources* (185 FERC ¶ 61,042) **5 of 6: Data and Modeling Validation (all IBRs)** **Due Nov. 4, 2025** ¶ 7: "[B]y November 4, 2025, NERC must submit new or modified Reliability Standards addressing the interrelated directives concerning: (1) data sharing for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate; and (2) data and model validation for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate."	10/19/2023 RM22-12-000	Multiple projects	Ongoing. NERC is tracking this directive under Milestone 3. Standards are being developed under Projects 2020-06, 2021-01, and 2022-02. Full details and subdirectives for all Order No. 901 categories of directives are detailed in Table 3 in Attachment A.
Order No. 901, *Reliability Standards to Address Inverter-Based Resources* (185 FERC ¶ 61,042) **6 of 6: Planning and Operational Studies (all IBRs)** **Due Nov. 4, 2026** ¶ 7: "[B]y November 4, 2026, NERC must submit new or modified Reliability Standards addressing planning and operational studies for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate."	10/19/2023 RM22-12-000	Multiple projects	Ongoing. NERC is tracking this directive under Milestone 4. Two Reliability Standards Projects will be created to address the operational and planning study directives. Full details and subdirectives for all Order No. 901 categories of directives are detailed in Table 3 in Attachment A.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
***N. Am. Elec. Reliability Corp.*, Order Accepting Revisions to the NERC Rules of Procedure regarding Reliability Standards Development** (185 FERC 61,146) ¶ 28: "[T]o determine the effectiveness of NERC's revisions to address "important reliability in a timely manner," we direct NERC to submit an informational report with the Commission no later than 18 months after the date of this order. NERC's filing should discuss the effectiveness of the new provisions in addressing important reliability issues in a timely manner and whether any further refinements are needed. Specifically, the informational report should contain: (1) statistical and numerical data such as comparison of development times for Reliability Standards before and after implementation; (2) a discussion of how NERC, with the revised procedures, has been able to expedite the successful development and approval of Reliability Standards addressing priority topics such as changing resource mix, extreme weather, and cybersecurity; (3) alternatively, the cause of delays or inability to move forward with a needed Reliability Standard; (4) recommended solutions to address identified concerns with the Reliability Standards development process; and (5) a discussion of how NERC's transparency measures, with the revised procedures including the removal of the ANSI standard requirements, have been sufficient to ensure that NERC continues to meet the Commission's requirements that the standards process be open and fair, appropriately balances the interest of stakeholders, includes steps to evaluate the effects of standards on competition, and meets the due process requirements."	11/28/2023 RR23-4-000	n/a	Ongoing. NERC will file the directed informational report by the May 28, 2025 deadline.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
EOP-012-2 Modifications (1/5) **187 FERC 61,204** P 3: "(1) develop and submit modifications to proposed Reliability Standard EOP-012-2 to address concerns related to the ambiguity of the newly defined term Generator Cold Weather Constraint to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Standard are objective and sufficiently detailed so that applicable entities understand what is required of them and to remove all references to "reasonable cost," "unreasonable cost," "cost," and "good business practices" and replace them with objective, unambiguous, and auditable terms;" P 47: "we direct NERC to ensure that the Generator Cold Weather Constraint declaration criteria included within the proposed Reliability Standard are objective and sufficiently detailed so that applicable entities understand what is required of them.	RD24-5-000; RD24-1-000 June 27, 2024	Project 2024-03	On March 20, 2025 NERC filed a Motion for Extension of Time to file proposed Reliability Standard EOP-012-3. On March 26, 2025 the Commission granted the extension request. The NERC Board will be considering its approval of EOP-012-3 on April 4, 2025. NERC will file with the Commission no later than April 14, 2025.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
EOP-012-2 Modifications (2/5) P 3: "(2) develop and submit modifications to proposed Reliability Standard EOP-012-2 for NERC to receive, review, evaluate, and confirm the validity of each Generator Cold Weather Constraint invoked by a generator owner, in a timely fashion, to ensure that such declaration cannot be used to avoid mandatory compliance with the proposed Reliability Standard or obligations in a corrective action plan;" P 54: Accordingly, we again direct NERC, pursuant to section 215(d)(5) of the FPA, to modify proposed Reliability Standard so that NERC receives, reviews, evaluates, and confirms for validity the Generator Cold Weather Constraint declarations in a timely manner. We also direct NERC to include in its compliance filing, a plan to timely review such declarations to verify compliance with proposed Reliability Standard EOP-012-2 and its successors or obligations in a corrective action plan and take corrective action where necessary.	RD24-5-000; RD24-1-000 June 27, 2024	Project 2024-03	On March 20, 2025 NERC filed a Motion for Extension of Time to file proposed Reliability Standard EOP-012-3. On March 26, 2025 the Commission granted the extension request. The NERC Board will be considering its approval of EOP-012-3 on April 4, 2025. NERC will file with the Commission no later than April 14, 2025.
EOP-012-2 Modifications (3/5) P 3: "(3) develop and submit modifications to proposed Reliability Standard EOP-012-2 to shorten and clarify the corrective action plan implementation timelines and deadlines in Requirement R7, as further directed below;" P 68: "[W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to require shorter deadlines to implement corrective actions for existing or new equipment or the freeze protection measures for those generating units that experience a Generator Cold Weather Reliability Event."	RD24-5-000; RD24-1-000 June 27, 2024	Project 2024-03	On March 20, 2025 NERC filed a Motion for Extension of Time to file proposed Reliability Standard EOP-012-3. On March 26, 2025 the Commission granted the extension request. The NERC Board will be considering its approval of EOP-012-3 on April 4, 2025. NERC will file with the Commission no later than April 14, 2025.

EOP-012-2 Modifications (4/5) P 3: "(4) develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the Standard is pre-approved by NERC and to ensure that the generator owner informs relevant registered entities of operating limitations in extreme cold weather during the period of the extension;" P 70: [W]e direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP 012 2 to ensure that any extension of a corrective action plan implementation deadline beyond the maximum implementation timeframe required by the proposed Reliability Standard is pre-approved by NERC… P 72: We…find that generators that are commercially operational after October 1, 2027, should have freeze protection measures either designed into their generating systems, or, if a corrective action plan is needed, then it should be completed by the time that such generating units go into commercial operation. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to clarify that any Requirement R2 corrective action plans must be completed prior to the generating unit's commercial operation date. P 76: We believe that proposed Reliability Standard EOP-012-2, Requirement R7's corrective action plan implementation deadlines have remaining ambiguities that need to be addressed. As noted above, the Commission has previously expressed similar concerns regarding the	RD24-5-000; RD24-1-000 June 27, 2024	Project 2024-03	On March 20, 2025 NERC filed a Motion for Extension of Time to file proposed Reliability Standard EOP-012-3. On March 26, 2025 the Commission granted the extension request. The NERC Board will be considering its approval of EOP-012-3 on April 4, 2025. NERC will file with the Commission no later than April 14, 2025.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
vagueness and enforceability of Reliability Standards language. Specifically, we agree with the concerns raised by the ISO/RTO Council that Requirement R7 of proposed Reliability Standard EOP-012-2 does not provide clear direction as to the required corrective action plan implementation timeline that applies to certain generator owners. For example, it is unclear how the corrective action plan implementation timeline would apply if a generator owner had combinations of both existing and new equipment for freeze protection measures. Accordingly, we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R7 of proposed Reliability Standard EOP-012-2 to address these ambiguities by expanding on Requirement R7.1.1 and 7.1.2 to make it clear which corrective action plan implementation deadline applies to which generator owner.			
EOP-012-2 Modifications (5/5) P 3: "(5) develop and submit modifications to Requirement R8, part 8.1 of proposed Reliability Standard EOP-012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the constraint declaration remains valid." P 94: "we direct NERC, pursuant to section 215(d)(5) of the FPA, to develop and submit modifications to Requirement R8, Part 8.1 of proposed Reliability Standard EOP 012-2 to implement more frequent reviews of Generator Cold Weather Constraint declarations to verify that the declaration remains valid. NERC may propose to develop modifications that address the Commission's concerns in an equally efficient and effective manner, however, NERC must explain how its proposal addresses the Commission's concerns.	RD24-5-000; RD24-1-000 June 27, 2024	Project 2024-03	On March 20, 2025 NERC filed a Motion for Extension of Time to file proposed Reliability Standard EOP-012-3. On March 26, 2025 the Commission granted the extension request. The NERC Board will be considering its approval of EOP-012-3 on April 4, 2025. NERC will file with the Commission no later than April 14, 2025.

ORDER ON FIVE-YEAR PERFORMANCE ASSESSMENT 189 FERC ¶ 61,211 P 34 "we direct NERC to design, submit in a compliance filing, and report in future performance assessments metrics related to two key areas: (1) the Reliability Standards development program, and (2) the implementation and oversight of the CMEP." P 38 "we direct 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." **Reliability Standards:** P39 "we direct NERC to develop and report in future performance assessments metrics that demonstrate the efficacy of NERC's Reliability Standards development program, such as: (1) the time NERC takes between the identification of a reliability risk and the initiation of a process to address that risk, such as lessons learned, data requests, industry guidance, or a standards authorization request, if needed; and (2) the time it takes to develop a new or modified Reliability Standard once a standards authorization request has been approved. We understand that NERC has already developed metrics for its internal tracking of standards development" **CMEP:** P 40 "we direct NERC to develop and report in future performance assessments metrics to track: (1) the implementation and consistency of risk-based compliance monitoring practices, (i.e., compliance oversight plans, inherent risk assessments, and internal controls); (2) timeliness of	RR24-4-000 12/19/2024	n/a	In progress, will be submitted by the June 17, 2025 deadline.

Order & Directive Summary	Date & Docket	Standards Project Name	Status
noncompliance processing; and (3) reduction in subsequent serious risk violations stemming from same or similar root cause as prior noncompliance." P41 "NERC is directed to submit a compliance filing within 180 days of the date of this order" [Tuesday, June 17, 2025]			

In addition to the above-listed directives from FERC related to Reliability Standards, NERC was directed by Congress in the Fiscal Responsibility Act of 2023 to submit a study of the total transfer capability between transmission planning regions to FERC by December 2, 2024. NERC filed the Interregional Transfer Capability Study in Docket No. AD25-4-000 on November 19, 2024.

V. CONCLUSION

NERC is continuing to work closely with industry stakeholders and FERC to resolve all outstanding directives. NERC respectfully requests that the Commission accept this informational filing.

Respectfully submitted,

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Date: March 28, 2025

CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in the above-referenced proceeding.

Dated at Washington, D.C. this 28th day of March, 2025.

/s/ Lauren A. Perotti

Lauren A. Perotti

Counsel for North American Electric Reliability Corporation

Attachment A

Table 3:

Status of FERC Order No. 901 Directives

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Development Mapping of FERC Order 901 Directives and Other Guidance to Standards Development Projects, Draft SARs, and Pending SARs

March 2025

Background

The Federal Energy Regulatory Commission (FERC) issued Order No. 901 on October 19, 2023, which included directives on new or modified NERC Reliability Standard projects. FERC Order No. 901 addresses a wide spectrum of reliability risks to the grid from the application of Inverter-Based Resources (IBR); including both utility scale and behind-the-meter or distributed energy resources. Within the Order, there are four milestones that include sets of directives to NERC. The first milestone was achieved on January 17, 2024, as NERC filed its initial work plan to address all aspects of FERC Order No. 901 throughout the next three years[1]. The filed work plan includes extensive detail on Standards Development approach and next steps to accomplish the suite of directives addressing IBR. The work plan was intended to be an initial roadmap to guide development for each of the Reliability Standards Projects identified as a 901-related project.

Milestone 2 Projects

All Reliability Standards Projects associated with directives for Milestone 2 are identified in the table below. Milestone 2 projects include 2021-04, 2020-02, and 2023-02, which have passed industry comment and ballot. NERC filed the Standards associated with the Milestone 2 projects with the Federal Regulatory Authorities on November 4, 2024.

[1] INFORMATIONAL FILING OF THE NORTH AMERICAN RELIABILITY CORPORATION REGARDING THE DEVELOPMENT OF RELIABILITY STANDARDS RESPONSIVE TO ORDER NO. 901; 01/17/2024; https://www.nerc.com/FilingsOrders/us/NERC%20Filings%20to%20FERC%20DL/NERC%20Compliance%20Filing%20Order%20No%20901%20Work%20Plan_packaged%20-%20public%20label.pdf

Milestone 3 Projects

All Reliability Standards Projects associated with directives for Milestone 3 are identified in the table below. Standards Authorization Requests (SARs) were created and submitted by NERC staff to the Standards Committee in May 2024 and were posted for comment. The projects include 2020-06, 2021-01, and 2022-02 and are anticipated to be filed with the Federal Regulatory Authorities by November 4, 2025.

Milestone 4 Draft SARs

Finally, two Reliability Standards Projects will be created to address the operational and planning study directives from FERC Order No. 901. Two SARs are anticipated to be drafted and completed by Q1 of 2025. Consideration will be needed with other active transmission planning-related Reliability Standards Projects to ensure any potential overlapping requirements are effectively coordinated between drafting teams(DTs). These projects are anticipated to be filed by November 4, 2026.

Resources

FERC Order No. 901 – Final Rule Reliability Standards to Address Inverter-Based Resources

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1A	7	3	"**Second, by November 4, 2025, NERC must submit new or modified Reliability Standards addressing the interrelated directives concerning: (1) data sharing for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate;** and (2) data and model validation for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate."	Project 2022-02 Uniform Modeling Framework for IBR.
1B	7	3	"**Second, by November 4, 2025, NERC must submit new or modified Reliability Standards addressing the interrelated directives concerning:** (1) data sharing for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate; **and (2) data and model validation for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate.**"	Project 2020-06 Verifications of Models and Data for Generators.
2	7	2	"NERC must also submit, by November 4, 2024, new or modified Reliability Standards that require disturbance monitoring data sharing and post-event performance validation for registered IBRs."	Project 2021-04 Disturbance Monitoring Data Capabilities and Data Sharing from Generator Owners.
3A	7	4	"**Finally, by November 4, 2026, NERC must submit new or modified Reliability Standards addressing** planning and **operational studies for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate**."	Pending Operational Studies SAR (Anticipated Q1 2025).
3B	7	4	"**Finally, by November 4, 2026, NERC must submit new or modified Reliability Standards addressing planning** and operational **studies for registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate**."	Pending Transmission Studies SAR (Anticipated Q1 2025).

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4	76	3	**"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require registered IBR generator owners and operators to provide IBR-specific modeling data and parameters (e.g., steady-state, dynamic, and short circuit modeling information, and control settings for momentary cessation and ramp rates**) that accurately represent the registered IBRs **to their planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities that are responsible for planning and operating the Bulk-Power System**."	Project 2022-02 Uniform Modeling Framework for IBR.
5	77	3	"Nevertheless, to support accurate modeling and performance, we direct NERC to consider during its standards development process AEU and ACP/SEIA's suggested data sharing requirements when developing the framework, criteria, and necessary data exchange requirements to meet the registered IBR data sharing directive."	Project 2022-02 Uniform Modeling Framework for IBR.
6	78	3	"**As discussed in more detail in section IV.C of this final rule, we are also directing NERC to develop new or modified Reliability Standards that require the use of approved industry IBR models** that accurately reflect the behavior of all IBRs during steady state, short-circuit, and dynamic conditions."	Project 2022-02 Uniform Modeling Framework for IBR.
7	80	4	"The Commission did not propose in the NOPR to address new cyber or physical security protections of IBRs beyond those in existing applicable Reliability Standards. Therefore, while we decline to direct NERC to develop IBR-specific cyber or physical security Reliability Standards for IBRs in this effort, NERC should evaluate whether there are gaps that must be addressed."	Ongoing coordination with NERC Staff and RSTC.

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8A	85	2	"**Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal to direct NERC to include in the new or modified Reliability Standards technical criteria to require registered IBR generator owners to install disturbance monitoring equipment at their buses and elements, to require registered IBR generator owners to provide disturbance monitoring data to Bulk-Power System planners and operators for analyzing disturbances on the Bulk-Power System**, and to require Bulk-Power System planners and operators to validate registered IBR models using disturbance monitoring data from installed registered IBR generator owners' disturbance monitoring equipment."	Project 2021-04 Disturbance Monitoring Data Capabilities and Data Sharing from Generator Owners.
8B	85	3	"**Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal to direct NERC to include in the new or modified Reliability Standards** technical criteria to require registered IBR generator owners to install disturbance monitoring equipment at their buses and elements, to require registered IBR generator owners to provide disturbance monitoring data to Bulk-Power System planners and operators for analyzing disturbances on the Bulk-Power System**, and to require Bulk-Power System planners and operators to validate registered IBR models using disturbance monitoring data from installed registered IBR generator owners' disturbance monitoring equipment**."	Project 2020-06 Verifications of Models and Data for Generators.
9	85	2	"We further agree with the findings in NERC reports (e.g., a lack of high-speed data captured at the IBR or plant-level controller and low-resolution time stamping of inverter sequence of event recorder information has hindered event analysis) and direct NERC through its standard development process to address these findings."	Project 2021-04 Disturbance Monitoring Data Capabilities and Data Sharing from Generator Owners.

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10	86	2	"Thus, in developing the directed data collection requirements, we direct NERC to consider the burdens of generators collecting and providing data, while assuring that Bulk-Power System operators and planners have the data they need for accurate disturbance monitoring and analysis."	Project 2021-04 Disturbance Monitoring Data Capabilities and Data Sharing from Generator Owners.
11	86	3	"Likewise, regarding CAISO's request that the Commission direct NERC to consider requiring registered IBRs to provide additional data, we agree that such data collections may be warranted, and direct NERC to consider through its standards development process whether additional IBR data points (e.g., telemetry collections or other automated platform integrations) are needed to further enhance real-time visibility of Bulk-Power System operations."	Project 2022-02 Uniform Modeling Framework for IBR.
12	102	3	"Specifically, as proposed in the NOPR, we direct NERC to submit to the Commission for approval one or more new or modified Reliability Standards that require: (1) transmission owners to provide to Bulk-Power System planners and operators modeling data and parameters for unregistered IBRs in their transmission owner areas that, individually or in the aggregate, materially affect the reliable operation of the Bulk-Power System and (2) distribution providers to provide to Bulk-Power System planners and operators modeling data and parameters for IBR-DERs in the aggregate in their distribution provider areas where the IBR-DERs in the aggregate materially affect the reliable operation of the Bulk-Power System."	Project 2022-02 Uniform Modeling Framework for IBR.
13	104	3	"Recognizing that there may be instances in which transmission owners are unable to gather adequate unregistered IBR modeling data and parameters to create and maintain unregistered IBR models in their	Project 2022-02 Uniform Modeling Framework for IBR.

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			transmission owner areas, we modify the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require each transmission owner, if unable to gather accurate unregistered IBR data or unable to gather unregistered IBR data at all, to provide instead to the Bulk-Power System planners and operators in their areas: (1) an estimate of the unregistered IBR modeling data and parameters, (2) an explanation of the limitations of the availability of data, (3) an explanation of the limitations of any data provided by unregistered IBRs, and (4) the method used for estimation."	
14	104	3	"To support this data collection, we further direct NERC to consider commenters suggestions to implement a process or mechanism by which transmission owners would receive modeling data and parameters."	Project 2022-02 Uniform Modeling Framework for IBR.
15	105	3	"Accordingly, to account for instances in which distribution providers are unable to gather adequate modeling data and parameters of IBR-DERs to create and maintain IBR-DER models, we modify the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require that each distribution provider, if unable to gather accurate IBR-DERs data in the aggregate or unable to gather IBR-DERs data in the aggregate at all, provide instead to the Bulk-Power System planners and operators in their areas: (1) an estimate of the modeling data and parameters of IBR-DERs in the aggregate, (2) an explanation of the limitations of the availability of data, (3) an explanation of the limitations of the data provided by IBR-DERs, and (4) the method used for estimation."	Project 2022-02 Uniform Modeling Framework for IBR.
16	105	3	"In support of above, we further direct NERC to consider commenters' suggestions to implement a process or mechanism by which distribution providers would receive modeling data and parameters."	Project 2022-02 Uniform Modeling Framework for IBR.

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17	106	3	"For those areas with IBR-DERs that in the aggregate materially affect the reliable operation of the Bulk-Power System but do not have an associated registered distribution provider, we direct NERC to determine the appropriate registered entity responsible for providing data of IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, or, when unable to gather such accurate IBR-DERs data, to provide instead to the Bulk-Power System planners and operators in their areas: (1) an estimate of the modeling data and parameters of IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, (2) an explanation of the limitations of the availability of data, (3) an explanation of the limitations of any data provided by the IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, and (4) the method used for estimation."	Project 2022-02 Uniform Modeling Framework for IBR.
18A	108	3	"Regarding CAISO's concern regarding the potential "compliance trap" where planners and operators rely on third-party data and IRC's request that the final rule specify the data to be submitted by all IBRs (i.e., registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate) and transmission devices using similar technologies, **we direct NERC to determine through its standards development process the minimum categories or types of data that must be provided to transmission planners, transmission operators, transmission owners, and distribution providers** necessary to predict the behavior of all IBRs **and to ensure that compliance obligations are clear.**"	Project 2022-02 Uniform Modeling Framework for IBR.
18B	108	3	"Regarding CAISO's concern regarding the potential "compliance trap" where planners and operators rely on third-party data and IRC's request that the final rule specify the data to be submitted by all IBRs (i.e., registered IBRs, unregistered IBRs, and IBR-DERs in the aggregate) and	Project 2022-02 Uniform Modeling Framework for IBR.

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			transmission devices using similar technologies, **we direct NERC to determine through its standards development process the minimum categories or types of data** that must be provided to transmission planners, transmission operators, transmission owners, and distribution providers **necessary to predict the behavior of all IBRs and to ensure that compliance obligations are clear**."	
19	108	3	"**As discussed in more detail in section IV.C of this final rule, we are also directing NERC to develop new or modified Reliability Standards that require the use of approved industry IBR models** that accurately reflect the behavior of all IBRs during steady state, short-circuit, and dynamic conditions."	Project 2022-02 Uniform Modeling Framework for IBR.
20	122	3	"**Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require the use of approved industry generic library IBR models** that accurately reflect the behavior of IBRs during steady state, short-circuit, and dynamic conditions when developing planning, operations, and interconnection-wide models."	Project 2022-02 Uniform Modeling Framework for IBR.
21	124	3	"We direct NERC to determine through its standards development process which nation-wide approved component models are needed to build IBR plant models for steady state, short-circuit, and dynamics studies."	Project 2022-02 Uniform Modeling Framework for IBR.
22	125	3	"Accordingly, we direct NERC to develop new or modified Reliability Standards that require the sole use of nation-wide approved component generic library models for system models to facilitate the exchange of neighboring entities' respective planning and operation models and to build interconnection-wide models."	Project 2022-02 Uniform Modeling Framework for IBR.

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23	126	3	"With respect to NERC's recommendation for model benchmarking, we direct NERC to determine through its standards development process whether the development of benchmark cases to test model performance and a subsequent report comparing model performance are needed and at what periodicity."	Project 2020-06 Verifications of Models and Data for Generators.
24	140	3	"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require the generator owners of registered IBRs, transmission owners that have unregistered IBRs on their system, and distribution providers that have IBR-DERs on their system to provide models that represent the dynamic behavior of these IBRs at a sufficient level of fidelity to provide to Bulk-Power System planners and operators to perform valid interconnection-wide, planning, and operational studies on a basis comparable to synchronous generation resources."	Project 2020-06 Verifications of Models and Data for Generators.
25A	141	3	"**We also direct NERC to require** the generator owners of registered IBRs and **the transmission owners that have unregistered IBRs on their system to provide to the Bulk-Power System planners and operators (e.g., planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities) dynamic models that accurately represent the dynamic performance of** registered and **unregistered IBRs, including momentary cessation and/or tripping, and all ride through behavior**."	Project 2022-02 Uniform Modeling Framework for IBR.
25B	141	3	"**We also direct NERC to require the generator owners of registered IBRs and the transmission owners that have unregistered IBRs on their system to provide to the Bulk-Power System planners and operators (e.g., planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities)**	Project 2020-06 Verifications of Models and Data for Generators.

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			dynamic models that accurately represent the dynamic performance of registered and unregistered IBRs, including momentary cessation and/or tripping, and all ride through behavior."	
26	141	3	"Recognizing that there may be instances in which transmission owners are unable to gather accurate unregistered IBR modeling data and parameters to create and maintain accurate unregistered IBR dynamic models in their transmission owner areas, we modify the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require each transmission owner, if unable to gather accurate unregistered IBR data or unable to gather unregistered IBR data at all, to provide instead to the Bulk-Power System planners and operators in their areas, dynamic models of unregistered IBRs using estimated data in accordance with this final rule's section IV.B.3 data sharing directives."	Project 2022-02 Uniform Modeling Framework for IBR.
27	141	3	"Further, we direct NERC to require distribution providers to provide to the planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities aggregated dynamic models that adequately represent the dynamic performance of IBR-DERs on their systems that in the aggregate have a material impact on the Bulk-Power System, including momentary cessation and/or tripping, and all ride through behavior (e.g., IBR-DERs in the aggregate modeled by interconnection requirements performance to represent different steady-state and dynamic behavior)."	Project 2022-02 Uniform Modeling Framework for IBR.
28	141	3	"Recognizing that there may be instances in which distribution providers are unable to gather data that accurately represents IBR-DERs in the aggregate, we modify the NOPR proposal and direct NERC to include in the proposed new or modified Reliability Standards a requirement that the distribution provider, if unable to gather data of IBR-DERs that in the	Project 2022-02 Uniform Modeling Framework for IBR.

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			aggregate have a material impact on the Bulk-Power System, provide to the Bulk-Power System planners and operators (i.e., the data recipients) a dynamic model using estimated data for IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, in accordance with this final rule's section IV.B.3 data sharing directives."	
29	141	3	"Furthermore, we acknowledge that there may be areas with IBR-DERs in the aggregate that materially impact the reliable operation of the Bulk-Power System but do not have an associated registered distribution provider. Therefore, we modify the NOPR proposal and direct NERC to determine the appropriate registered entity responsible for providing adequate data and parameters of IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, and to identify the registered entities for coordinating, verifying, and keeping up to date the respective dynamic models."	Project 2022-02 Uniform Modeling Framework for IBR.
30	141	3	"Finally, NERC must ensure that the proposed new or modified Reliability Standards account for the dynamic performance of IBR-DERs that in the aggregate have a material impact on the Bulk-Power System."	Project 2022-02 Uniform Modeling Framework for IBR.
31	143	3	"While we decline to include this level of detail in the directive to NERC, we nonetheless direct NERC to establish a standard uniform model verification process."	Project 2020-06 Verifications of Models and Data for Generators.
32	143	3	"Therefore, we direct NERC to define the model verification process and to require consistency among the model verification processes for existing Reliability Standards (e.g., FAC-002, MOD-026, and MOD-027) and any new or modified Reliability Standards."	Project 2020-06 Verifications of Models and Data for Generators.

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33	146	3	"Accordingly, we direct NERC to develop new or modified Reliability Standards that require the use of the DER_A model or successor models to represent the behaviors of IBR-DERs that in the aggregate have a material impact on the Bulk-Power System at a sufficient level of fidelity for Bulk-Power System planners and operators to create valid planning and operations and interconnection-wide models and to be able to perform respective system studies."	Project 2022-02 Uniform Modeling Framework for IBR.
34	149	3	"Moreover, although the Reliability Standards will apply to a different (albeit overlapping) set of entities than Order No. 2023, we believe consistency is needed between the complimentary proceedings and therefore direct NERC to include in the new or modified Reliability Standards a similar model verification process timeline consistent with Order No. 2023 modeling deadline requirements."	Project 2020-06 Verifications of Models and Data for Generators.
35	156	3	"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and **direct NERC to submit new or modified Reliability Standards that require Bulk-Power System planners and operators to validate,** coordinate, and update in a timely manner the system models by comparing all generator owner, transmission owner, and distribution provider verified IBR models (i.e., models of registered IBRs, unregistered IBRs, and IBR-DERs that in the aggregate have a material impact on the Bulk-Power System) and **resulting system models against actual system operational behavior**."	Project 2021-01 System Model Validation with IBRs.
36A	157	3	"**Furthermore, for those areas with IBR-DERs in the aggregate that materially impact the reliable operation of the Bulk-Power System but do not have an associated registered distribution provider, we modify the NOPR proposal to direct NERC to determine the appropriate registered entity responsible for the data and parameters of IBR-DERs in**	Project 2022-02 Uniform Modeling Framework for IBR.

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			the aggregate and to establish a process that requires identified registered entities to coordinate, validate, and keep up to date the system models."	
36B	157	3	"**Furthermore, for those areas with IBR-DERs in the aggregate that materially impact the reliable operation of the Bulk-Power System but do not have an associated registered distribution provider, we modify the NOPR proposal to direct NERC to** determine the appropriate registered entity responsible for the data and parameters of IBR-DERs in the aggregate and to **establish a process that requires identified registered entities to coordinate, validate, and keep up to date the system models**."	Project 2020-06 Verifications of Models and Data for Generators.
37A	161	3	"**Specifically, we direct NERC to develop new or modified Reliability Standards that require planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities to establish for each interconnection a uniform framework with modeling criteria, a registered modeling designee, and necessary data exchange requirements both between themselves and with the generator owners, transmission owners, and distribution providers to coordinate the creation of transmission planning, operations, and interconnection-wide models (i.e., system models)** and the validation of each respective system model."	Project 2022-02 Uniform Modeling Framework for IBR.
37B	161	3	"**Specifically, we direct NERC to develop new or modified Reliability Standards that require** planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities to establish for each interconnection a uniform framework with modeling criteria, a registered modeling designee, and necessary data exchange requirements both between themselves and with the generator owners,	Project 2021-01 System Model Validation with IBRs.

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			transmission owners, and distribution providers to coordinate the creation of transmission planning, operations, and interconnection-wide models (i.e., system models) and **the validation of each respective system model**."	
38	161	3	"Further, we direct NERC to include in the new or modified Reliability Standards a requirement for generator owners, transmission owners, and distribution providers to regularly update and communicate the verified data and models of registered IBRs, unregistered IBRs, and IBR-DERs by comparing their resulting models against actual operational behavior to achieve and maintain necessary modeling accuracy for inclusion of these resources in the system models."	Project 2020-06 Verifications of Models and Data for Generators.
39	161	3	"For those areas with IBR-DERs in the aggregate that have a material impact on the reliable operation of the Bulk-Power System but do not have an associated registered distribution provider, we modify the NOPR proposal to direct NERC to determine the appropriate registered entity responsible for the models of those IBR-DERs and to determine the registered entities responsible for updating, verifying, and coordinating models for IBR-DERs in the aggregate to meet the system models directives."	Project 2020-06 Verifications of Models and Data for Generators.
40	161	3	"NERC may implement this directive by **modifying Reliability Standards** MOD-032-1 and **MOD-033-2 or by developing new Reliability Standards** to establish requirements mandating an annual process **to coordinate, validate, and keep up-to-date the transmission planning, operations, and interconnection-wide models.**"	Project 2021-01 System Model Validation with IBRs
41	174	4	"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop and submit to the Commission for approval new or modified Reliability Standards that require planning coordinators	Pending Transmission Studies SAR

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			and transmission planners to include in their planning assessments the study and evaluation of performance and behavior of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, under normal and contingency system conditions in their planning area."	(Anticipated Q1 2025).
42	174	4	"These Reliability Standards should require planning coordinators and transmission planners to include in their planning assessments the study and evaluation of the ride through performance (e.g., tripping and momentary cessation conditions) of IBRs in their planning area for stability studies on a comparable basis to synchronous generation resources."	Pending Transmission Studies SAR (Anticipated Q1 2025).
43	174	4	"The new or modified Reliability Standards should also require planning coordinators and transmission planners to study the Bulk-Power System reliability impacts of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, in their planning models of their area and in their interconnection-wide area planning models."	Pending Transmission Studies SAR (Anticipated Q1 2025).
44	174	4	"Further, the new or modified Reliability Standards should also require planning coordinators and transmission planners to study the Bulk-Power System reliability impacts of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, in adjacent and other planning areas that adversely impacts a planning coordinator's or transmission planner's area during a disturbance event."	Pending Transmission Studies SAR (Anticipated Q1 2025).
45	175	4	"Accordingly, we direct NERC to consider in its standards development process whether to include in new or modified Reliability Standards a requirement that planning coordinators and transmission planners	Pending Transmission Studies SAR

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			include a wide set of grid stress performance conditions (i.e., both typical and extreme conditions) in planning assessments."	(Anticipated Q1 2025).
46	175	4	"Likewise, with regards to NERC's comments related to on-peak and off-peak studies, we direct NERC to consider in the standards development process whether to require planning coordinators and transmission planners to account in planning assessments for both on-peak and off-peak conditions, normal and abnormal (contingency) conditions with high penetration levels of IBRs (i.e., registered IBRs, unregistered IBRs, and IBR-DERs that in the aggregate have a material impact on the Bulk-Power System), and normal and abnormal conditions with low inertia."	Pending Transmission Studies SAR (Anticipated Q1 2025).
47	176	4	"We adopt the NOPR proposal and direct NERC to submit to the Commission for approval one or more new or modified Reliability Standards that require reliability coordinators and transmission operators to include the performance and behavior of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs in the aggregate, (e.g., IBRs tripping or entering momentary cessation individually or in the aggregate) in their operational planning analyses, real-time monitoring, and real-time assessments, including non-bulk electric system data and external power system network data identified in their data specifications."	Pending Operational Studies SAR (Anticipated Q1 2025).
48	176	4	"Further, we agree with commenters and direct NERC to submit to the Commission for approval new or modified Reliability Standards requiring reliability coordinators and transmission operators, when performing operational studies, as well as operational planning analyses, real-time monitoring, real-time assessments, and other analyses, to include in these studies all generation resources (i.e., all generation resources	Pending Operational Studies SAR (Anticipated Q1 2025).

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			including all IBRs) necessary to adequately assess the performance of the Bulk-Power System for normal and contingency conditions."	
49	177	4	"We adopt the NOPR proposal and direct NERC to submit to the Commission for approval one or more new or modified Reliability Standards that require balancing authorities to include the performance and behavior of registered and unregistered IBRs individually and in the aggregate, as well as IBR-DERs that in the aggregate have a material impact on the Bulk-Power System, (e.g., resources tripping or entering momentary cessation individually or in the aggregate) in their operational analysis functions and real-time monitoring to support the reliable operation of the Bulk-Power System during normal and contingency conditions."	Pending Operational Studies SAR (Anticipated Q1 2025).
50	190	2	"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop new or modified Reliability Standards that require registered IBR generator owners and operators to use appropriate settings (i.e., inverter, plant controller, and protection) to ride through frequency and voltage system disturbances and that permit IBR tripping only to protect the IBR equipment in scenarios similar to when synchronous generation resources use tripping as protection from internal faults."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
51	190	2	"The new or modified Reliability Standards must require registered IBRs to continue to inject current and perform frequency support during a Bulk-Power System disturbance."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
52	190	2	"Any new or modified Reliability Standard must also require registered IBR generator owners and operators to prohibit momentary cessation in the no-trip zone during disturbances."	Project 2020-02 Modifications to

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				PRC-024 (Generator Ride-through).
53	190	2	"NERC must submit new or modified Reliability Standards that establish IBR performance requirements, including requirements addressing frequency and voltage ride through, post-disturbance ramp rates, phase lock loop synchronization, and other known causes of IBR tripping or momentary cessation."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
54	193	2	"Therefore, we direct NERC through its standard development process to determine whether the new or modified Reliability Standards should provide for a limited and documented exemption for certain registered IBRs from voltage ride through performance requirements."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
55	193	2	"Further, we direct NERC to ensure that any such exemption would be applicable for only existing equipment that is unable to meet voltage ride-through performance. When such existing equipment is replaced, the exemption would no longer apply, and the new equipment must comply with the appropriate IBR performance requirements specified in the Reliability Standards (e.g., voltage and frequency ride through, phase lock loop, ramp rates, etc.)."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
56	193	2	"Finally, we direct NERC, through its standard development process, to require the limited and documented exemption list (i.e., IBR generator owner and operator exemptions) to be communicated with their respective Bulk-Power System planners and operators (e.g., the IBR generator owner's or operator's planning coordinator, transmission planner, reliability coordinator, transmission operator, and balancing authority)."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
57	199	2	"Pursuant to section 215(d)(5) of the FPA, we modify the NOPR proposal. To the extent NERC determines that a limited and documented	Project 2020-02 Modifications to

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			exemption for those registered IBRs currently in operation and unable to meet voltage ride-through requirements is appropriate due to their inability to modify their coordinated protection and control settings, we direct NERC to develop new or modified Reliability Standards to mitigate the reliability impacts to the Bulk-Power System of such an exemption."	PRC-024 (Generator Ride-through).
58	208	2	"Pursuant to section 215(d)(5) of the FPA, we adopt the NOPR proposal and direct NERC to develop and submit to the Commission for approval new or modified Reliability Standards that require post-disturbance ramp rates for registered IBRs to be unrestricted and not programmed to artificially interfere with the resource returning to a pre-disturbance output level in a quick and stable manner after a Bulk-Power System."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
59	208	2	"Further, the Reliability Standards must require generator owners to communicate to the relevant planning coordinators, transmission planners, reliability coordinators, transmission operators, and balancing authorities the actual post-disturbance ramp rates and the ramp rates to meet expected dispatch levels (i.e., generation-load balance)."	Project 2023-02 Analysis and Mitigation of BES Inverter-Based Resource Performance Issues.
60	209	2	"We direct NERC to submit to the Commission for approval new or modified Reliability Standards that would require registered IBRs to ride through any conditions not addressed by the proposed new or modified Reliability Standards that address frequency or voltage ride through, including phase lock loop loss of synchronism."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
61	209	2	"The proposed new or modified Reliability Standards must require registered IBRs to ride through momentary loss of synchronism during Bulk-Power System disturbances and require registered IBRs to continue to inject current into the Bulk-Power System at pre-disturbance levels during a disturbance, consistent with the IBR Interconnection	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).

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			Requirements Guideline and Canyon 2 Fire Event Report recommendations."	
62	209	2	"Related to ACP/SEIA's comment recommending to revise the directive to require generators to maintain synchronism where possible and continue to inject current to support system stability, we direct NERC, through its standard development process, to consider whether there are conditions that may limit generators to maintain synchronism."	Project 2020-02 Modifications to PRC-024 (Generator Ride-through).
63	222-223	1	"Pursuant to § 39.2(d) of the Commission's regulations, we modify the NOPR proposal and direct NERC to submit an informational filing within 90 days of the issuance of the final rule in this proceeding… NERC's informational filing should include a detailed, comprehensive standards development plan and explanation of how NERC will prioritize the development of new or modified Reliability Standards directed in this rule… NERC should take into account the risk posed to the reliability of the Bulk-Power System, standard development projects already underway, resource constraints, its ongoing registration of Bulk-Power System-connected IBR generator owners and operators, and other factors as necessary."	Completed and filed with FERC on January 17th, 2024 Link to: Order No. 901 Workplan Informational Filing (NERC).
64A	226	2	"Further, we believe that there is a need to have all of the directed Reliability Standards effective and enforceable well in advance of 2030 and direct NERC to ensure that the associated implementation plans sequentially stagger the effective and enforceable dates to ensure an orderly industry transition for complying with the IBR directives in this final rule prior to that date."	Each of the identified Reliability Standards Projects in Milestone 2 will include implementation plans that assure all new or modified Reliability Standards

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				are effective and enforceable before 2030.
64B	226	3	"Further, we believe that there is a need to have all of the directed Reliability Standards effective and enforceable well in advance of 2030 and direct NERC to ensure that the associated implementation plans sequentially stagger the effective and enforceable dates to ensure an orderly industry transition for complying with the IBR directives in this final rule prior to that date."	Each of the identified Reliability Standards Projects in Milestone 3 will include implementation plans that assure all new or modified Reliability Standards are effective and enforceable before 2030.
64C	226	4	"Further, we believe that there is a need to have all of the directed Reliability Standards effective and enforceable well in advance of 2030 and direct NERC to ensure that the associated implementation plans sequentially stagger the effective and enforceable dates to ensure an orderly industry transition for complying with the IBR directives in this final rule prior to that date."	Each of the identified Reliability Standards Projects in Milestone 4 will include implementation plans that assure all new or modified Reliability Standards are effective and

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				enforceable before 2030.