UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

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North American Electric Reliability Corporation **Docket No. RD22-4-001**

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION INVERTER BASED RESOURCES WORK PLAN PROGRESS UPDATE

On May 18, 2023, the Federal Energy Regulatory Commission ("Commission"), issued an order ("Order")¹ approving the North American Electric Reliability Corporation ("NERC") Work Plan filed on February 15, 2023, as amended on March 13, 2023,² to address registration of Inverter-Based Resources ("IBRs") that are connected to the Bulk-Power System ("BPS") but not within NERC's definition of the bulk electric system ("BES") (referred to hereafter as "Category 2 GO/GOP").³ As directed in the Order and prior IBR Order,⁴ NERC hereby submits a progress update on activities by the ERO Enterprise (NERC and the Regional Entities⁵) to execute the Work Plan and initiate revisions to the NERC Registry Criteria⁶ to address owners and operators of IBRs that are not currently required to register but that, in the aggregate, have a material impact on BPS reliability. As detailed below, the proposed Registry Criteria revisions posted on the NERC

¹ Order Approving Registration Work Plan, 183 FERC ¶ 61,116 (2023) [hereinafter Order]; and Registration of Inverter-Based Resources, 181 FERC ¶ 61,124 (2022) [hereinafter IBR Order] (directing the Work Plan).

N. Am. Elec. Reliability Corp., Docket No. RD22-4-001 (Feb. 15, 2023) [hereinafter Work Plan Filing].
 As detailed below, the new category is included as a subset of the definitions for Generator Owner ("GO") and Generator Operator ("GOP"). See NERC, Glossary of Terms Used in NERC Reliability Standards (Dec. 1, 2023), <u>https://www.nerc.com/pa/Stand/Glossary%200f%20Terms/Glossary_of_Terms.pdf</u> (NERC Glossary). The BES definition is a subset of the BPS. Reliability Standards support an adequate level of reliability of the BES. Revisions to Elec. Reliability Org. Definition of Bulk Elec. Sys. & Rules of Proc., Order No. 773, 141 FERC ¶ 61,236 (2012), order on reh'g, Order No. 773-A, 143 FERC ¶ 61,053 (2013), rev'd sub nom. People of the State of N.Y. v. FERC, 783 F.3d 946 (2d Cir. 2015).

⁴ Order at PP 21 and 35; *IBR Order* at P 52 (directing NERC to provide Work Plan updates every 90 days detailing NERC's progress toward identifying and registering owners and operators of unregistered IBRs).

⁵ The Regional Entities are (i) Midwest Reliability Organization ("MRO"); (ii) Northeast Power Coordinating Council, Inc. ("NPCC"); (iii) ReliabilityFirst Corporation ("ReliabilityFirst"); (iv) SERC Reliability Corporation ("SERC"); (v) Texas Reliability Entity, Inc. ("Texas RE"); and (vi) Western Electricity Coordinating Council ("WECC").

⁶ The Registry Criteria are within NERC's Rules of Procedure ("ROP"). Per ROP Appendices 5A and 5B, owners, operators, or users of the BPS are candidates for Registration in the NERC Compliance Registry.

website in September have been revised with a draft final version posted January 22, 2024 to reflect clarifying edits based on feedback from stakeholders and will be presented to the NERC Board of Trustees ("Board") on February 15, 2024. NERC plans to request Board approval of the draft proposal in the first quarter of 2024. NERC has also begun efforts to identify candidates for registration under the revised Registry Criteria.

I. <u>SUBMITTING REGISTRATION REVISIONS TO THE NERC BOARD OF</u> TRUSTEES

As detailed in the previous Work Plan update,⁷ NERC engaged in extensive stakeholder outreach and posted proposed revisions to the NERC Registry Criteria that would satisfy the IBR Registration directives issued by the Commission. These revisions have been further revised to provide additional clarity based on stakeholder comments and feedback and will be presented to the Board in February.

The January posting is available on NERC's Rules of Procedure ("ROP") website.⁸ The posting included clean copies of proposed ROP Appendix 2, 5A, and 5B, as well as redlines to the currently approved versions and to the September posting version. The posting also included a document considering comments received by stakeholders from the September posting.

In particular, the final draft proposes to revise the Registry Criteria definitions for "Generator Owner" and "Generator Operator" in order to add a new category for owners and operators of unregistered BPS connected, non-BES, IBRs. These new criteria for what is proposed in the draft online as Category 2 Generator Owners ("GO") or Generator Operators ("GOP") would apply to owners and operators of IBRs that i) aggregate to nameplate capacity equal or greater than

⁷ *N. Am. Elec. Reliability Corp.*, Docket No. RD22-4-001 (Nov. 14, 2023).

⁸ Available here: https://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx.

20 MVA; at ii) a common point of connection at a voltage greater than or equal to 60 kV, are material to the Reliable Operation of the interconnected BPS.

NERC will present the draft to the Board at its February 15, 2024 meeting and looks forward to continuing to discuss the proposal. NERC plans to request Board approval in the first quarter of 2024.

II. <u>NEXT STEPS AND CONTINUED OUTREACH</u>

Subject to Board approval this quarter, NERC plans to submit the revised Registry Criteria to the Commission for approval. The revised Registry Criteria were discussed at the December 7, 2023 Reliability and Security Technical Committee and the January 24 Compliance and Certification Committee. At the January 24, 2024 Organization Registration and Certification Subcommittee Meeting, NERC staff presented an overview on the updated proposal and answered questions. The discussion included review of comments from the September posting and a plan to review expected new registrations resulting from the ROP changes in accordance with Phase II of the Work Plan.⁹ (Work Plan Att. 1 Updated)

Finally, NERC and Regional Entities are working on an updated, comprehensive, communications outreach program to dovetail with the work associated with Registration with the efforts related to Reliability Standards revisions. NERC anticipates that this updated communications program will aid new entrants with integrating with the section 215 program as well as existing entrants in their understanding of next steps. (Communication Plan Att. 2)

⁹ NERC, *ORCS Meeting Agenda Package* (Jan. 24, 2024) at item 3 (NERC Activities Related to Inverter-Based Resources),

https://www.nerc.com/comm/CCC/Organization%20Registration%20and%20Certification%20Sub1/Organization% 20Registration%20and%20Certification%20Subcommittee%20(ORCS)%20Agenda%20Package%20-%20January%202024.pdf.

III. <u>CONCLUSION</u>

The ERO Enterprise looks forward to continuing to work with industry stakeholders and the Commission to: (i) develop Registry Criteria that address owners and operators of unregistered IBRs, and (ii) later integrate new registrants subject to Commission approval of the eventual ROP filing in this proceeding. As stated above, NERC plans to present the proposed ROP revisions to the NERC Board in February of 2024. For the reasons set forth above, NERC respectfully requests that the Commission accept this Work Plan update.

Respectfully submitted,

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Counsel for the North American Electric Reliability Corporation

Date: February 12, 2024

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 this proceeding. Dated at Washington, D.C. this 12th day of February 2024.

/s/ Candice Castaneda

Candice Castaneda Counsel for the North American Electric Reliability Corporation



Attachment 1

NERC Work Plan Progress Update February 12, 2024

RELIABILITY | RESILIENCE | SECURITY

Registration of Inverter Based Resources – Docket No. RD22-4-000 NERC Work Plan Progress Update February 12, 2024

On November 17, 2022, in order to respond to concerns regarding the reliability impacts from inverterbased resources (IBRs)¹ on the Bulk Power System² (BPS), the Federal Energy Regulatory Commission (FERC or Commission) directed the North American Electric Reliability Corporation (NERC) to submit a work plan to address registration of IBRs.³ Regulatory consideration differs based on whether the IBRs meet NERC's Bulk Electric System (BES) definition and are registered with NERC for compliance purposes (registered IBRs), whether the IBRs are connected directly to the BPS but are not registered with NERC (unregistered IBRs), or whether the IBRs are distributed energy resources (i.e. connected to the distribution system) (IBR-DER). The Commission directed NERC to file a Work Plan within 90 days detailing how the ERO Enterprise plans to identify and register owners and operators of unregistered IBRs.

The Commission stated that the work plan should include the following:

- Explanation of how NERC will modify its processes to address unregistered IBRs (whether by working with stakeholders to change the BES definition, a change to its registration program, or some other solution) within 12 months of approval of the work plan, and
- Implementation milestones ensuring that owners and operators meeting the new registration criteria are identified within 24 months of the approval date of the work plan, and
- Implementation milestones ensuring that owners and operators meeting the new registration criteria are registered and thereby required to comply with applicable Reliability Standards within 36 months of the approval date of the work plan.

On May 18, 2023, the Commission accepted NERC's Work Plan and directed NERC to provide updates every 90 days detailing progress to date. This document reflects the updated Work Plan. NERC anticipates further revisions to its May 2024 Work Plan update. This Work Plan update reflects NERC's intent to discuss the draft proposed revisions to the ROP at the NERC Board of Trustees ("Board") February meeting. NERC continues planning to submit ROP revisions to the Commission during the first quarter of 2024.

Section I. Introduction

NERC recognizes that the landscape of the electric power system across North America is experiencing a substantial transformation. Conventional generation fueled in large part by coal, nuclear, and, in recent years, natural gas turbines are being rapidly replaced by decentralized generation consisting of IBRs. These

¹ The Order states "This order uses the term IBRs to include 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. This order does not address IBRs connected to the distribution system."

² The Bulk Power System (BPS) is defined in the Glossary of Terms Used in NERC Reliability Standards 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 term does not include facilities used in the local distribution of electric energy. (Note that the terms "Bulk-Power System" or "Bulk Power System" shall have the same meaning.)

³ Registration of Inverter-Based Resources, 181 FERC ¶ 61,124 (2022) [hereinafter IBR Order].

energy resources are primarily battery energy storage systems (BESS), solar photovoltaic (i.e., solar PV), and wind that are installed on the BPS and distribution systems. As stated in NERC's recent document Inverter-Based Resource Strategy Ensuring Reliability of the Bulk Power System with Increased Levels of BPS-Connected IBRs⁴ (IBR strategy), "[t]he rapid interconnection of bulk power system (BPS)-connected inverter-based resources (IBR) is the most significant driver of grid transformation and poses a high risk to BPS reliability."

Evidence examined by NERC and the six Regional Entities (together the ERO Enterprise) over the 2017 - 2021 five-year timeframe reveals that the total capacity supplied by fossil-fired and nuclear resources on the BPS has decreased by 29 GW and the total generation supplied by IBRs has increased by 73 GW. IBRs accounted for over 15% of total resource capacity on the BPS in 2021 but only 84% of these IBRs are registered with NERC. Further, the large majority of the non-registered IBR capacity on the BPS is located at plants 20 MW and greater – approx. 24.3 GW (2021), and this total is expected to continue its rapid increase in the foreseeable future.⁵

As recognized by the IBR Order, this transformation has created a present and ongoing risk to the Reliable Operation of the BES. As a result, the ERO Enterprise plans to develop revisions to its Registration Criteria as reflected in Sections 500, Appendix 5A, and Appendix 5B of the NERC Rules of Procedure (ROP) under the milestones set forth below.

Section II. Proposed Registration Criteria Revisions for BPS Connected Generator Owners and Operators

NERC plans to modify its process to encompass presently unregistered IBRs through changes to its registration program. In particular, NERC proposes to revise its Registry Criteria under the ROP by including two new functions comprised of owners and operators of unregistered IBRs interconnected to the BPS as these resources and their owners/operators have a material aggregate impact on reliability of the BES according to the thresholds reflected in the proposed Registry Criteria. Proposed revisions to the Registry Criteria would be developed through the process applicable under the ROP, NERC Bylaws, and applicable Commission regulation.

The draft proposal would include revisions to Appendices 2, 5A, and 5B of the ROP to address unregistered IBRs. The draft was posted on September 13, 2023 for 45 day public comment period on NERC's ROP webpage.⁶ Supporting materials were also posted on the NERC Registration webpage.⁷ On January 22, 2024, NERC posted a final draft version of the ROP revisions on its website and plans to discuss those revisions with the Board at its February meeting. The draft proposal includes clarifying revisions based on comments to the September posting, for example, renaming the new entrants Category 2 GOs and GOPs (rather than GO-IBRs and GOP-IBRs) and moving the detailed criteria on this type of GO/GOP more directly into the GO/GOP Registry Criteria definitions. NERC also presented the draft revisions to stakeholders in December and January as reflected in the transmittal filing.

⁴ Available at: <u>https://www.nerc.com/comm/Documents/NERC_IBR_Strategy.pdf</u>

⁵ To help avoid potential confusion, NERC clarifies that in referring to IBRs, this Work Plan does not include distributed energy resources. Rather it only includes IBRs that are interconnected to the BPS. Nonetheless, NERC is reviewing potential impacts associated with DERs on the BPS.

⁶ https://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx.

⁷ https://www.nerc.com/pa/comp/Pages/Registration.aspx

Registering the entrants identified under NERC's draft Category 2 GO/GOP criteria would lead to application of results-based Reliability Standards to address issues such as facility interconnection, data sharing, modeling, ride-through, and performance. As elaborated in the IBR Order, "Unregistered IBRs often have small individual generation capacities, are connected to the Bulk-Power System at less than 100 kV transmission or sub-transmission voltages, and do not meet one of the inclusions in the BES definition."⁸ As the Commission concludes, "events and disturbances have shown that IBRs, regardless of size and transmission or sub-transmission voltage, have a material impact on Bulk-Power System reliability....until unregistered IBRs are registered, they will not be required to comply with the Reliability Standards."⁹

Please see the accompanying transmittal, prior filings in this proceeding, and the materials posted on the Registration webpage for more details regarding the rationale underlying the present proposal.

Section III. Milestones to Implement Work Plan¹⁰

In addition to the milestones below, the ERO Enterprise will also continue to consider whether revisions to the BES Definition might also support continued reliability of the BPS as the grid transforms. NERC will update the milestones as appropriate in future update filings.

TIMEFRAME	ACTIVITIES	STATUS
Month 1 (June 2023)	• ERO Enterprise to complete review and draft proposed revisions of Section 500 and Appendices 5A and 5B of the ROP.	 ✓ Completed draft ROP revisions ✓ Stakeholder meeting with industry volunteers June 2, 2023.
Month 2 (July 2023)	 ERO Enterprise to coordinate with the Organization Registration and Certification Subcommittee (ORCS) of the Compliance and Certification Committee (CCC) on proposed revisions.¹² ERO Enterprise to present proposed revisions to the CCC. 	 ✓ Presented proposed revisions to CCC/ORCS July 19, 2023 ✓ Received comments from ORCS on proposed ROP revisions.
Month 3 (August 2023)	• ERO Enterprise to present proposed revisions to other key stakeholder organizations in North America.	 Presented proposed revisions to SEIA leadership on August 3, 2023.

The Commission approved the work plan on May 18, 2023. Within 12 months of this date, NERC will do the following to revise its Registration Program:¹¹

⁸ IBR Order, at P 23. See also, id., at P 32-33.

¹⁰ Throughout this period and as directed in the IBR Order, once the Commission approves the proposed work plan, NERC would also submit progress updates every 90 days thereafter. Please also refer to NERC's filings in Docket No. RM22-12-000 for more information regarding matters pertaining to IBR affiliated Reliability Standards.

⁹ IBR Order, at P 30.

 $^{^{11}}$ \checkmark Indicates the activity status is complete.

¹² The CCC and ORCS work plans for 2023 contemplate providing comments on proposed revisions to the ROP related to IBRs and the Registration Program.

TIMEFRAME	ACTIVITIES	STATUS
	 NERC to present proposed revisions to the MRC. NERC to file work plan update with FERC. 	 ✓ File Work Plan Update August 16, 2023. ✓ Present/Discuss ROP revisions at the Board meeting.
Month 4-5 (September – October 2023)	 ERO Enterprise to complete revisions to initial draft ROP proposal to address informal stakeholder feedback. NERC to post ROP revisions for public comment period on NERC website for 45 days. 	 ✓ NERC completed and posted the proposed ROP revisions for comment on September 13, 2023. ✓ NERC received comments on the posted ROP revisions from September 13 through October 30, 2023.
Month 6 (November 2023)	 NERC to file work plan update with FERC. 	 ✓ Filed Work Plan Update November 14, 2023.
Month 7 (December 2023)	 ERO Enterprise to incorporate any further revisions to the ROP to the extent determined appropriate to address comments. ERO Enterprise to prepare matrix summarizing proposal, comments, and responses thereto. ERO Enterprise to present initial consideration of applicable Reliability Standards at the Reliability and Security Technical Committee December Meeting. 	 Posted final draft January 22, 2024 Presented December 7, 2023.
Month 8-10 (January – March 2024)	 ERO Enterprise to request NERC Board approval of the ROP revisions. NERC to file the proposed ROP revisions with FERC, subject to Board approval, and Request expedited notice, comment, and review over a 3-month period. 	 Discussion at Board Meeting will be February 15-16, 2024. Anticipated request for approval in Quarter 1, 2024
Month 11-12 (April – May 2024)	 ERO Enterprise to continue considering applicable Reliability Standards including a possible subset list of Standards, as appropriate with stakeholder feedback.¹³ 	• TBD

¹³ This work will coordinate with broader Reliability Standards revisions.

Within 24 months of Commission approval of the work plan NERC will do the following to identify candidates for registration that meet the updated Registry Criteria:

TIMEFRAME	ACTIVITIES
Month 12-13	 ERO Enterprise to cross reference Energy Information Administration (EIA) Form 860 Database with the NERC Compliance Registry (NCR) to identify unregistered owners of IBRs as potential candidates under revised Registry Criteria. NERC to initiate information technology (IT) updates to extent necessary. ERO Enterprise to issue requests for information to Reliability Coordinators, Planning Coordinators, Transmission Owners, Transmission Planners, and Distribution Providers regarding potential Category 2 GOs/GOPs in their footprints. ERO Enterprise to issue bulletins and other communication materials to support registration. NERC to file work plan update with FERC.
Month 13-14 Month 14-20	 ERO Enterprise to compare identified unregistered owners of IBRs to the revised Registry Criteria to identify candidates. ERO Enterprise to develop approach for implementation of revised Registry Criteria and applicable Reliability Standards, including a possible subset list of Standards, as appropriate. ERO Enterprise to send communication to candidates for Registration. ERO Enterprise to issue notice of webinar on Registration. ERO Enterprise to hold workshops across
	 Regional Entities and at NERC regarding registration and implementation. NERC to file work plan update(s) with FERC.
Month 20-22	 ERO Enterprise to examine any updates to EIA Form 860 Database. NERC to file work plan update with FERC.

TIMEFRAME	ACTIVITIES
Month 23-24	 ERO Enterprise to send communication to any newly identified candidates for registration, as needed. NERC to continue IT transitions as necessary.

Within 36 months of Commission approval of the work plan, NERC will do the following to register new candidates:

TIMEFRAME	ACTIVITIES
Month 25-26	 ERO Enterprise to hold training for newly registering entities on the Centralized Organization Registration ERO System (CORES).¹⁴ ERO Enterprise to provide ERO Enterprise 101 Informational Package, ERO Enterprise Entity Onboarding Checklist, and guidance.¹⁵ NERC to file work plan update with FERC.
Month 26-27	 NERC to complete IT transition for expansion of registration for new entities.
Month 27-36	 NERC to file work plan update(s) with FERC. ERO Enterprise to issue notification letters to newly registered entities that will provide notice of registration and responsibility for compliance with applicable NERC Reliability Standards.

¹⁴ The ERO Enterprise anticipates the need to update its IT, external facing communications, and systems to accommodate the registration of the new entities. This may impact the milestones reported on during 90-day progress reports.

¹⁵ The ERO Enterprise has already been providing such materials to stakeholder groups, and is examining further opportunities for dissemination and update to facilitate a smooth transition if Registry Criteria revisions are approved.



NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Attachment 2

Communication Plan

RELIABILITY | RESILIENCE | SECURITY

Communication Plan

Registry Criteria Revisions for Owners and Operators of Inverter-Based

Resources

February 12, 2024

Communication Goals

NERC plans the following overarching communication strategies to begin identifying and informing Generator Owner (GO) and Generator Operator (GOP) candidates of the proposed revised registry criteria. This proposed communication plan includes activities during the three phases of activity outlined in the Work Plan filed with the Commission in Docket No. RD22-4-000. Please note that NERC is preparing an updated Communication Plan to accompany the May 2024 Work Plan.

The communication plan would help ensure that all stakeholders (including non-registered entities) become informed and engaged with the ERO Enterprise. The following table outlines the overarching communication activities to support the registration work plan.

TIMEFRAME	ACTIVITIES
Month 1-6	 Communicated to industry stakeholder groups* based on approved work plan activities that support the overall effort. Sought feedback from generation industry. Sought feedback from IBR industry associations. Hosted informational webinar(s) regarding the work plan to make revisions the NERC ROP, including an overview of the ERO organization, Reliability Standards, and current activities. Hosted informational webinar(s) regarding proposed ROP revisions to generation industry and trade associations.
Month 6-12	 Hosted informational session(s) on proposed ROP revisions. Began outreach to identify candidates through various channels (e.g., EIA 860 information, NERC functional entities, and industry stakeholders). Began engaging identified candidates for introduction to NERC and ERO Enterprise. Begin discussing initial triage of potential applicable Reliability Standards.
Month 12-14	 Issue requests for information to Reliability Coordinators, Planning Coordinators, Transmission Owners, Transmission Planners, and Distribution Providers regarding potential candidates in their footprints. Issue bulletins and other communication materials announcing the revisions and obligation to register, including the list of applicable Reliability Standards, or a subset list, as appropriate. This list may be

TIMEFRAME	ACTIVITIES
	revised as Reliability Standards are further modified in accordance with the Standards Process Manual.
Month 14-24	 Hold workshops across Regional Entities and at NERC regarding registration and implementation. Share ERO Enterprise 101 Informational Package,¹ ERO Enterprise Entity Onboarding Checklist, and onboarding guidance with newly identified candidates.² Send communication(s) to candidates, as needed.
Months 24-36	 Issue notification letters to newly registered entities that will provide notice of registration and responsibility for compliance with applicable NERC Reliability Standards.

*Stakeholders

The following is an example list of the stakeholders that the ERO Enterprise may communicate with during the various activities associated with the work plan.

- American Clean Power Association (APC)
 - American Wind Energy Association (AWEA) (2020)
 - US Energy Storage Association (ESA) (2022)
 - American Public Power Association (APPA)
- American Wind Energy Association (AWEA)
- Canada Energy Regulator (CER)
- Canadian Association of Utility Commissioners (CAMPUT)
- Electricity Canada (EC)
- Electric Producers (EPSA)
- Edison Electric Institute (EEI)
- Electric Power Supply Association (EPSA)
- Energy Systems Integration Group (ESIG)
- National Association of Regulatory Utility Commissioners (NARUC)
- National Rural Electrification Cooperative Association (NRECA)
- North American Generator Forum (NAGF)
- North American Transmission Forum (NATF)
- Regional Transmission Organizations (RTO) & Independent System Operators (ISO)
- Solar Energy Industries Association (SEIA)
- Transmission Access Policy Study Group (TAPS)
- Western Interconnection Compliance Forum (WICF)

¹ <u>ERO Enterprise Informational Package | New Registered Entities: 101, April 7, 2023</u>

² Initial information has already been shared, and NERC is continuing to seek opportunities to further disseminate materials and update the materials to support the transition as any revisions to Registry Criteria are implemented.