UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

NERC Petition for Approval of PRC-029-1 Frequency and Voltage Ride-through Requirements for Inverter-Based Resources	**)** **)** **)** **)**	**Docket No. RM25-3-000**

COMMENTS OF DOMINION ENERGY SERVICES, INC.

Dominion Energy Services, Inc., on behalf of Virginia Electric and Power Company ("Dominion Energy Virginia" or "DEV") respectfully submits the following comments in response to the December 19, 2024 Notice of Proposed Rulemaking[1] to accept Reliability Standards and related definitions proposed in Petition for Approval of Proposed Reliability Standards PRC-029-1 and PRC-024-4 submitted by the North American Reliability Corporation (NERC) in the above-captioned proceeding on November 4, 2024. Dominion Energy Virginia submits these limited comments to urge the Commission to direct NERC to modify the exemption process in proposed Reliability Standard PRC-029-1 so that it would be available to any project for which primary design, construction, and/or procurement agreements have been executed for the facility as of the effective date of the Reliability Standard.

INTRODUCTION AND SUMMARY OF COMMENTS

DEV supports the development of a balanced portfolio of reliable, affordable, and increasingly clean energy and supports the purpose and goal of the proposed PRC-029-1 Reliability Standard. However, DEV is concerned that the proposed version of PRC-029-1 does not properly address exemptions for existing Inverter Based Resources ("IBR") and should also

1 *Reliability Standards for Frequency and Voltage Protection Settings and Ride-Through for Inverter-Based Resources*, Notice of Proposed Rulemaking, 189 FERC ¶ 61,212 (2024) ("NOPR").

consider exemptions for IBRs in the construction phase. While DEV does not oppose the Petition for approval of PRC-024-4, DEV does not support approval of PRC-029-1 without a revision to the exemption process that accounts for long lead time projects and addresses design limitations for such projects.

DEV owns, operates, and is developing numerous IBR projects. Based on its experience and expertise developing and operating IBRs, DEV is of the opinion that PRC-029-1 fails to appropriately consider the long development cycle of these projects including the design, competitive procurement process, manufacturing, and installation. Moreover, the supply chain research, development, and manufacturing constraints inherent in large IBR projects could jeopardize the viability of many projects that are too far in the development lifecycle to redesign or replace critical equipment to accommodate the requirements of PRC-029-1.

BACKGROUND ON DOMINION ENERGY VIRGINIA

Dominion Energy Virginia is a public service corporation engaged in the generation, transmission, distribution, and sale of electricity to retail and wholesale customers, and is a subsidiary of Dominion Energy, Inc., a holding company under the Public Utility Holding Company Act of 2005. Dominion Energy Virginia furnishes electric service to approximately 2.8 million retail customers in its approximately 30,000 square miles of certificated service territory covering parts of Virginia and North Carolina. It does so by operating a diverse fleet of natural gas, renewable, nuclear, oil, pumped storage, and coal fired power stations, which collectively provide over 23,000 MW of generation capacity. It also owns over 6,800 miles of electric transmission infrastructure and corresponding facilities.

Dominion Energy Virginia is organized under the laws of the Commonwealth of Virginia and is a public utility subject to regulation by the Virginia State Corporation Commission

("VSCC") and by the North Carolina Utilities Commission ("NCUC"), whose regulations establish Dominion Energy Virginia's retail customer rates. Dominion Energy Virginia provides electric service by buying and selling wholesale power in the PJM Interconnection, L.L.C. ("PJM"), a regional transmission organization ("RTO") that Dominion Energy Virginia joined effective May 1, 2005, after obtaining prior approval from FERC, the VSCC, and the NCUC. PJM has operational control over Dominion Energy Virginia's transmission assets.

COMMENTS ON REQUIREMENT R4 OF PRC-029-1

DEV submits these comments to seek a minor modification to the exemption process set forth in proposed Reliability Standard PRC-029-1 R4. In recognition that existing units would likely need modifications to meet the new standards, NERC proposes an exemption process for "IBRs that are in-service on or before the date PRC-029-1 goes into effect"[2]. While DEV agrees that an exemption process is necessary, DEV submits that the exemptions criteria are too narrow and omits facilities that are well into the design and construction phases but will not be in-service within the arbitrary timeframes selected by NERC.

NERC's adoption of an exemption process for in-service facilities disregards the extensive comments and testimony submitted at the NERC technical conference regarding the long development timeline for large IBR projects as well as the 3–5-year timeline the IBR Original Equipment Manufacturers (OEMs) stated is necessary to incorporate new regulatory requirements into their products and make them commercially available[3]. Requiring a unit to be

2 *North American Electric Reliability Corporation*, Docket No. RM5-3-000, "Petition of The North American Electric Reliability Corporation For Approval of Proposed Reliability Standards PRC-029-1 and PRC-024-4 (filed Nov. 4, 2024) ("NERC Petition").

3 NERC Petition, Exhibit G, Transcript from September 4, 2024, Standards Committee and NERC Ride-through Technical Conference.

in-service to qualify for an exemption is contrary to NERC's stated purpose in having an exemption process, which is to avoid the need for IBR owners "having to wholesale retrofit and redesign legacy facilities" [4]. NERC acknowledged that such an outcome would be "unreasonable and unduly burdensome, and it could lead to undesirable impacts on reliability[5]

Although NERC's foregoing comments regarding the exemption apply only to units in operation, the concern is also pertinent to units already in the development process that are needed to address the significant load growth underway. A significant delay in an in-service date or cancellation of a project poses the same risk as existing units having to go offline or resource owners opting to retire units rather than retrofit them. As DEV and other commenters pointed out during the standards development process as well as after the NERC Board of Trustees implemented the Section 321 process,[6] the exemption process should properly account for projects that are well into the development cycle but may not be commissioned and in- service prior to the arbitrary 12-month timeframe currently contained in Requirement R4. Dominion Energy has multiple IBR projects that are in the project development phase, some projects being initiated as far back as 2021. These projects were designed with the PRC-024 criteria as a basis

4 *Id.*, Petition at 38.
5 *Id.*, Petition at 38-39.
6 *See, e.g.*, NERC Petition, Exhibit G, Comments to Question of whether "revisions accurately represent the changes discussed at the September Standards Committee and NERC Ride-through Technical Conference (DEV commenting that the "comment theme at the technical conference was that OEMs need sufficient time periods to design, engineer, and produce equipment that is compliant with new regulatory requirements," and that any exemptions should be available for facilities already contracted and until compliant equipment is commercially available); *id.* (Black Hills Corporation commenting the draft did not "consider exemptions for IBR facilities that are in the procurement process (i.e. 'in flight')" and noting that "[r]esource equipment specifications are typically locked down at the time the interconnection agreement is signed, and a change in requirements/specifications after that point can require changes in the design of the equipment that are impossible to achieve without triggering a material modification, resulting in interconnection restudies and delaying or potentially canceling the project"); *id.* (Grid Strategies commenting that it is "seriously concerned that the revision to R4 we have requested in all three PRC-029-1 comment periods has not been adopted: R4 should allow hardware limitation exemptions for IBRs that have signed interconnection agreements, and not just IBRs that are in-service, as of the effective date of the standard" and similarly noting that the "change is needed because resource equipment decisions are typically locked down at the time the interconnection agreement is signed"). Exhibit G is not paginated. For ease of reference, the above quoted comments and comments from multiple other organizations highlighting the same concern can be found on pages 2,079 through 2,109 of the combined .pdf file.

for ride-through performance. The designs included cables, transformers, and overall equipment specifications that were based on the regulatory requirements in place at the time. Numerous contracts have been executed and equipment is being manufactured and delivered for the over thirteen billion dollars and 3.25 gigawatts of long-lead time IBR projects that are part of Dominion Energy Virginia's pipeline of generation projects intended to satisfy the load growth in its service territory. With design, procurement and construction timelines that can exceed five years for current projects, the designs for these projects in development include equipment that was not specified to meet PRC-029-1. If the PRC-029-1 exemption process is not modified to include long-lead time projects with specific design related limitations and equipment already contracted for, delivered and, in some cases, partially deployed not only could billions of dollars of investment be at risk but much needed capacity for the ever-increasing electric load in the eastern interconnection could also be placed in jeopardy. With multi-year development cycles for large projects that utilize IBR technologies, replacing an inverter and corresponding components to achieve compliance with a NERC Reliability Standard at the end of the development cycle can be very problematic and will of these projects.

Large scale IBR projects are extraordinarily complex and sometimes only an IBR from a specific OEM may be used in the design. Dominion Energy Virginia has multiple large scale IBR projects that are not scheduled to be commissioned until early 2027 that have already been designed and both purchased and taken delivery of hardware that is not compliant with PRC-029-1. Based on the proposed commissioning dates, these projects will not qualify for an exemption under the current Requirements if the proposed PRC-029-1 is approved by the Commission in its current form. At a cost of almost seven million dollars to replace non-compliant hardware for just one of our smaller IBR projects, projects could become non-

economic in addition to delaying the commissioning date to find and acquire a new supply for the non-compliant hardware. Additionally, it may not be as simple as replacing an inverter to achieve compliance with the proposed PRC-029-1 Standard. Many other hardware limitations within the design of the system can impact a project's ability to meet the proposed Standard and may require design re-work or looking for alternate hardware and software in a market with limited vendors and supply chain issues. Many vendors supply an international customer base and may not be incented to re-work their product line to meet requirements that only apply to North American customers. Such delays and additional costs may render a project uneconomical and no longer viable, which may result in the project being withdrawn, to the detriment of customer reliability and affordability.

Dominion Energy's mission is to provide our customers with reliable, affordable, and increasingly clean energy. Consistent with the company's "all of the above" resource strategy, deployment of IBRs is one of the tools Dominion Energy Virginia uses to achieve this mission. Managing the risk of integrating these resources into the generation mix is of crucial importance and our fundamental responsibility as a transmission provider. The continued ability of these resources to ride-through both frequency and voltage excursions is a priority that Dominion Energy Virginia has emphasized with the suppliers that provide this technology. Understanding both the abilities and limitations regarding ride-through capabilities both in the field and currently in the supply chain allows Dominion Energy to provide energy safely and reliably to our customers. Discussions to date with these suppliers indicate that contracted inverters currently provide significant ride-through capabilities, just not to the new criteria determined by NERC in the proposed PRC-029-1. The risk of allowing inverters already deployed and currently in the supply chain for existing projects to operate at the current ride-thru capabilities appears to

be minimal, as these resources have robust capabilities, although not at the level proposed by NERC in PRC-029-1. One example would be a large IBR facility that is currently in-service that can meet all the proposed PRC-029-1 ride-through criteria except that it was built to withstand 1.10PU for up to 15 minutes in emergency cases rather than the 30 minutes specified in the standard.

To avoid the potential loss of clean and reliable IBR resource projects, DEV continues to recommend, as it suggested during the Standard Development cycle, an exemption process that resolves the technical limitations presented with the current proposal. Rather than an arbitrary 12-month window to qualify for an exemption based on technical limitations, the exemption eligibility should also include any project where the primary construction and/or procurement agreements have been executed for the facility [as of the Standard's effective date]. At this stage in the project development lifecycle, most of the project designs have been engineered and approved and actual hardware has already been procured. This change to the exemption process would reduce the risk of IBR resource projects being delayed or cancelled due to technical infeasibility of hardware already committed to and still adhere to societal and state policy goals of continuing to develop clean and reliable energy resources. This proposal would close the technical feasibility gap created by the current arbitrary exemption eligibility period, a gap which results in an unjust and unreasonable Reliability Standard that is not in the public interest.

Conclusion.

For the reasons set forth above, DEV respectfully requests the Commission direct NERC to address the issue of exemptions based on an arbitrary in-service date but rather based on criteria that accounts for projects far into the development life cycle and could be placed at risk due to technical limitations based on the design work and hardware under contract.

Respectfully submitted,

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Date: [March 24, 2025]

CERTIFICATE OF SERVICE

I hereby certify that on this 24th day of March 2025, I have caused to be served a copy of the foregoing upon all parties on the official service list in these proceedings in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010 (2024).

Respectfully submitted,

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