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VIA Electronic Filing

Ms. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
Dobbs Building
430 North Salisbury Street
Raleigh, North Carolina 27603

*Re: Dominion Energy North Carolina's Comments on Compliance with NCIP
Section 6.5
Docket No. E-100, Sub 101*

Dear Ms. Dunston:

Enclosed for filing on behalf of Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina (the "Company") is *Dominion Energy North Carolina's Comments on Compliance with NCIP Section 6.5.*

Thank you for your assistance with this matter. Feel free to contact me should you have any questions.

Very truly yours,

/s/ Nick A. Dantonio

NAD:sbc

Enclosure

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 101

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)	DOMINION ENERGY NORTH
Petition for Approval of Revisions to)	CAROLINA’S COMMENTS ON
Generator Interconnection Standards)	COMPLIANCE WITH NCIP
)	SECTION 6.5
)	
)	

NOW COMES Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina (“DENC” or the “Company”) to file comments in response to Ordering Paragraph 2 of the North Carolina Utilities Commission’s (“Commission”) April 27, 2022, *Order Requesting Comments Regarding Comprehensive Compliance with NCIP Section 6.5* (“Order”).

Background & Introduction

The Commission’s Order explains that in the 2019 Commission-approved revisions to the North Carolina Interconnection Procedures (“NCIP”), NCIP Section 6.5 was modified to allow Duke Energy Carolina, LLC and Duke Energy Progress, LLC (together, “Duke”) and the Company (together with Duke, the “Utilities”) and the authority to conduct post-commissioning inspections of Interconnection Customer’s facilities.¹ After disagreement between Duke and certain Interconnection Customers, in October 2021, the Commission issued a clarifying order explaining that NCIP Sections 6.5.2, 6.5.3, and 6.5.4 apply to “all Generating Facilities, regardless of the date of their Interconnection Agreement.”² These NCIP provisions either “authorize” or “entitle” the Utilities to conduct

¹ Order at 1.
² Order at 2.

certain post-commissioning inspections. In its entirety, NCIP Section 6.5—
Commissioning and Post-Commissioning Inspection—has four subsections that state:

- 6.5.1 Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards. If the Interconnection Customer is not proceeding under Section 2.3.2, the Utility must be given at least ten (10) Business Days' notice, or as otherwise mutually agreed to in writing by the Parties, of the tests and may be present to witness the commissioning tests.
- 6.5.2 In the case of any Generating Facility that was not inspected prior to commencing parallel operation, the Utility shall be authorized to conduct an inspection of the medium voltage AC side of each Generating Facility (including assessing that the anti-islanding process is operational). The Interconnection Customer shall pay the actual cost of such inspection within 30 Business Days after the Utility provides a written invoice for such costs.
- 6.5.3 The Utility shall also be entitled, on a periodic basis, to inspect the medium voltage AC side of each Interconnected Generating Facility on a reasonable schedule determined by the Utility in accordance with the inspection cycles applicable to its own distribution system. The Interconnection Customer shall pay the actual cost of such inspection within 30 Business Days after the Utility provides a written invoice for such costs.
- 6.5.4 The Utility shall also be entitled to inspect the medium voltage AC side of an Interconnected Generating Facility in the event that the Utility identifies or becomes aware of any condition that (1) has the potential to either cause disruption or deterioration of service to other customers served from the same electric system or cause damage to the Utility's System or Affected Systems, or (2) is imminently likely to endanger life or property or cause a material adverse effect on the security of, or damage to the Utility's System, the Utility's Interconnection Facilities or the systems of others to which the Utility's System is directly connected. The Interconnection Customer shall pay the actual cost of such inspection within 30 Business Days after the Utility provides a written invoice for such costs.

The Company has interpreted NCIP Section 6.5.1 as a mandatory requirement and NCIP Sections 6.5.2, 6.5.3, and 6.5.4 as providing discretionary

authority. The following comments provide additional detail with respect to the Company's practices on these mandatory and discretionary provisions.

NCIP Section 6.5.1 Compliance

DENC interprets NCIP Section 6.5.1's "shall" language as requiring the Company to conduct commissioning tests once an Interconnection Customer's facilities have been fully installed. Currently, DENC requires all utility scale distributed generation ("DG") to pass a commissioning test before DENC will issue a formal permission to operate ("PTO") letter. This test is scheduled between DENC and the Interconnection Customer and occurs at the point of common coupling ("PCC"). During this test, the Interconnection Customer is required to have all inverters at the facility online and producing electricity for the duration of the test.

The commissioning test has two parts. The first part is a low output test where all inverters are producing 15% of the facility's maximum output. The second part requires all inverters to run at 100% of the facility's maximum output. With all inverters running at 15% of the site's max output, a single-phase trip is issued for each phase, followed by a three-phase trip. Each inverter must clear all three phases within 160 milliseconds of the single-phase and three-phase operations, respectively, as documented in the respective Small Generator Interconnection Agreement. This 160 millisecond total clearing time is derived from IEEE 1547a-2014 (Amendment to IEEE Standard 1547-2003). After the utility source voltage is restored, all inverters must have a 5-minute delay prior to re-energizing which is also consistent with requirements in IEEE 1547. If the IC passes the low output (15%) test, DENC continues the same single-phase and three-phase test with each inverter running at maximum output. If at any point during the low or high output

test, the inverters fail to meet the described criteria, the facility does not pass the commissioning test and will not receive a PTO letter. If the facility fails the commissioning test, the Interconnection Customer can make any necessary changes and request to reschedule the test.

In addition to passing the commissioning test, DENC also performs a site Visual Configuration Control Verification Inspection (“VCCV”) during the final commissioning process before a PTO letter is issued. The main purpose of the site VCCV is to confirm that the configuration of the facility, based on the documentation on file, is consistent with the existing field conditions of the distribution voltage connected generating facility. The field conditions need to match the documentation on file to establish proper configuration control.

Specifically, this inspection consists of capturing inverter settings and taking pictures of (1) nameplates and connections of generators, converters, transformers, grounding transformers/banks, and neutral grounding resistors, (2) inverter internals/externals, and (3) point-of-interconnection construction (metering pole, recloser pole, disconnect pole). The visual inspection also requires the solar site to be energized to verify inverter settings locally and then de-energized to safely open field equipment cabinets to take pictures of nameplates and connections. If energization and de-energization of the solar site cannot be achieved on the same day, then the site VCCV inspection may have to be scheduled for two separate visits. The facility cannot be commercially operated unless the VCCV has been completed satisfactorily.

NCIP Sections 6.5.2, 6.5.3, & 6.5.4

DENC interprets NCIP Sections 6.5.2, 6.5.3, & 6.5.4 as providing the Utilities with discretionary authority to inspect the medium voltage AC side of the interconnected generating facility.

As an initial matter, the Company notes that Article 1.5 of the *pro forma* Interconnection Agreement requires that each Party be responsible for the construction, operation, and maintenance of its Interconnection Facilities. While DENC requires each interconnected generating facility to obtain an electrical inspection by the local inspection authority—in accordance with Section III of DENC’s Terms and Conditions—prior to energizing a facility’s medium voltage facilities, DENC does not currently require an Interconnection Customer to build its private, medium voltage facilities to DENC’s standards. DENC also does not currently inspect the Interconnection Customer’s medium voltage facilities for compliance with applicable building codes and regulations for which the Interconnection Customer is responsible under the provisions of the Interconnection Agreement. This practice of each Interconnection Customer being responsible for the construction, operation, maintenance, and inspection of its own Interconnection Facilities is also consistent with the provision of medium voltage service to retail and wholesale customers in DENC service territory.

Should an interconnected generating facility create an issue on DENC’s system, Article 3 of the Interconnection Agreement provides a protocol for addressing the source of the issue with the Facility, up to and including temporary disconnection to protect DENC’s system. When there is a fault at the Interconnection Customer’s facility, a DENC point-of-interconnection recloser will lock out and prevent potential damage to DENC’s

system. The DENC Regional Operations Center (“ROC”) will immediately notify the Interconnection Customer of the fault and engage a serviceman to inspect DENC’s equipment. The Interconnection Customer will also be directed to inspect its equipment and notify DENC of any cause of the fault that it finds. Once fault is remediated, the site is cleared and the ROC will re-energize the facility.

If there are repeated faults of the same nature on the Interconnection Customer’s equipment, the ROC will leave the site de-energized until such time that the Interconnection Customer can repair and/or replace the equipment at issue and provide DENC with a detailed written account of what work has been performed to mitigate the issue.

While DENC recognizes and reserves the right to implement a medium voltage inspection program as described in Sections 6.5.2, 6.5.3, and 6.5.4, Articles 1 and 3 of the Interconnection Agreement are currently DENC’s primary methods of addressing the impact to the grid from an interconnected generating facility’s medium voltage facilities and this approach has proved to appropriately balance effective protection of DENC’s system while treating all Interconnection Customers equally.

Respectfully submitted, this the 26th day of May, 2022.

/s/ Nick A. Dantonio

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing *Dominion Energy North Carolina's Comments on Compliance with NCIP Section 6.5*, filed in Docket No. E-100, Sub 101, was served upon all parties of record electronically or via U.S. mail, first-class postage prepaid.

This the 26th day of May, 2022.

/s/Nick A. Dantonio

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