

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-100, SUB 101

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Petition for Approval of Revisions to Generator Interconnection Standards	) ) ) ) ) )	ORDER CLARIFYING GENERATOR INTERCONNECTION STANDARDS, REQUESTING COMMENTS, AND REQUIRING FILING OF REMEDIATION INFORMATION
--	----------------------------	--

BY THE COMMISSION: On June 14, 2019, the Commission issued its Order Approving Revised Interconnection Standard and Requiring Reports and Testimony (June 2019 Order), which included revisions to Section 6.5 of the NCIP. Specifically, the June 2019 Order approved Sections 6.5.2 and 6.5.3, which allow the utilities to perform inspections on facilities that were “not inspected prior to commencing parallel operation” (6.5.2), to perform periodic inspections on the “medium voltage AC side” of the facilities (6.2.3), and inspect the facilities if the utilities “become aware of any condition that (1) has the potential to either cause disruption or deterioration of service...(2) or is imminently likely to endanger life or property or cause a material adverse effect on the security of, or damage to” the utilities’ systems or equipment (6.5.4). These sections also state that the Interconnection Customer will be responsible for the cost of these inspections.

On March 1, 2021, Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC (jointly, Duke), filed a report on their Interconnection Fee-Related Work and Post-Commercial Operation Inspections for 2020 (March 2021 Report). In that report, Duke stated that there was confusion among distributed energy resource developers as to the applicability of several inspection-related provisions in the North Carolina Interconnection Procedures, Forms, and Agreements for State-Jurisdictional Generator Interconnections (Interconnection Standards or NCIP).

On March 9, 2021, in response to the March 2021 Report, the Commission issued an Order Seeking Comments Regarding Generator Inspection Provisions of the North Carolina Generator Interconnection Standards. In that Order the Commission sought comments from interested parties regarding the inspection of facilities that were interconnected prior to when Duke implemented an inspection program and were therefore not inspected prior to parallel operations (Uninspected Facilities).

On March 12, 2021, Carolinas Clean Energy Business Association (CCEBA) requested an extension of time to file comments and reply comments, such that comments would be due March 29, and reply comments would be due April 12. The Commission granted the motion.

## **Initial Comments**

On March 29, 2021, initial comments were filed by Duke, the Public Staff, and jointly by CCEBA, Strata Solar, LLC and Strata Solar Development, LLC (CCEBA/Strata).

### **Duke**

Duke began its comments by noting that the need for rigorous inspection of the medium voltage AC side of interconnected generating facilities has been a topic of much discussion before the Commission. Duke noted that in 2016, to address experienced power quality events that originated on certain interconnection customers' medium voltage facilities at the point of interconnection, the Companies partnered with Advanced Energy Corporation (Advanced Energy) to establish a more robust inspection and commissioning program for all new utility-scale solar interconnection customers. Duke also noted that it had retained Advanced Energy to conduct similar inspection studies in 2014 and 2015, which revealed similar safety and reliability issues. Duke commented that in all three inspection studies (2014, 2015, and 2018/2019), the installation of unstudied and unapproved equipment was of particular concern. Duke stated that there are approximately 300 utility-scale Uninspected Facilities interconnected to the Duke distribution systems totaling over 1,000 MW. Duke noted that, in short, since at least 2014, Duke has documented compliance issues with the Interconnection Request and the Interconnection Agreement, as well as construction safety and reliability issues related to the Uninspected Facilities. Duke commented that, throughout this time period, Duke has consistently worked with industry stakeholders to determine the best way to accommodate inspections on a going forward basis.

Additionally, Duke noted its engagement with stakeholders in 2020 to develop the self-inspection plan through the Technical Standards Review Group (TSRG) to achieve the goals of: (1) verifying the equipment installed in the field as compared to the equipment approved through the Interconnection Study process; and (2) ensuring the inverters and protective device settings match the Companies' specifications. Duke noted that confirming this information through utility inspections or through a reasonably developed self-inspection program is necessary to ensure safe and reliable parallel operation of generating facilities in a manner consistent with Duke's standards for operating and maintaining its own distribution system equipment and interconnected facilities.

Duke noted that the Commission's June 2019 Order found that "it is critical that the Utilities be in a position to ensure the safety and integrity of the grid," and that, therefore, the Commission approved additional inspection requirements in Section 6 of the NCIP. In supporting its comment, Duke referred to the revisions adopted in the June 2019 Order, specifically including the following revisions to section 6.5:

#### **6.5 Commissioning and Post-Commissioning Inspections**

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 ~~written~~ 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.

Duke commented that, in its view, "it is clear from the face of Sections 6.5.2, 6.5.3, and 6.5.4 that the Commission intended to require both new and already operating facilities to submit to regular inspections to ensure utilities are 'in a position to ensure the safety and integrity of the grid.'" Duke requested that "to preserve the intent of these sections" the Commission should clarify that the terms of the June 2019 Order apply to Generating Facilities with a fully executed Interconnection Agreement as of June 14, 2019, either by: (1) entering an order explicitly stating that the exclusionary language in Section 1.1.3—i.e., that the 2019 NCIP revisions do not apply to Generating Facilities with a fully executed Interconnection Agreement as of June 14, 2019—does not apply to Section 6.5.2; or (2) adopting minor revisions to Sections 1.1.3 and 6.5.2. Finally, Duke requested that the Commission provide clarification that will allow Duke and stakeholders to proceed with the self-inspection pilot program they have jointly developed with TSRG over the past year.

## Public Staff

The Public Staff filed a letter in lieu of comments. The Public Staff noted that it does have concerns about the safety and reliability issues raised by Duke in its March 2021 Report and recognized that Duke has a regulatory responsibility to operate the grid in a safe and reliable manner. The Public Staff noted that it is particularly interested in how these non-utility owned facilities install and maintain on-site equipment to ensure they do not present a threat to the operation and maintenance of the grid. The Public Staff stated:

Unlike Duke, which must file an outage report in its subsidiaries' annual fuel riders, these non-utility owned facilities are under no obligation to report outages, and therefore, neither the Public Staff nor the Commission know how many outage events occur, the magnitude of the events, or the cause of the outages. The Public Staff is not advocating for a reporting requirement of these facilities at this time, but it is of concern to the Public Staff that so many of the facilities go uninspected and outages can occur, which may or may not affect the safety and reliability of the grid, especially when the grid is increasingly relying on these facilities to provide electricity to Duke's customers.

## CCEBA and Strata

CCEBA and Strata filed joint initial comments in which they point out an apparent inconsistency in the June 2019 Order which is reflected in the position taken by Duke with respect to the Uninspected Facilities. Specifically, CCEBA and Strata noted that Sections 6.5.2 and 6.5.3 should not retroactively apply to the Uninspected Facilities because Section 1.1.3 expressly provides that the revisions to the 2019 NCIP do not apply to facilities that had executed an Interconnection Agreement (IA) prior to the date of the June 2019 Order. Additionally, CCEBA and Strata pointed out that Ordering Paragraph 1 of the June 2019 Order expressly provides that "the changes approved in the [June 2019 Order] will be effective upon issuance of this Order, except that they will not apply to Facilities that have a fully executed Interconnection Agreement as of the date of this Order." In their comments, CCEBA and Strata highlighted three main problems with Duke's proposal to impose a self-inspection regime for generators with Interconnection Agreements that pre-date June 14, 2019.

First, they commented that a mandatory self-inspection program is not authorized by the Commission's June 2019 Order. CCEBA and Strata argued that the June 2019 Order "is clear that the revised 2019 Interconnection Standard does not apply to facilities with existing Interconnection Agreements."

Second, they commented that the scope of Duke's inspection regime is not necessary because the parties are committed to safety and reliability and are already incentivized to be reliable grid contributors, and Duke's inspections would impose unneeded costs on generating facilities.

Third, they commented that Duke overestimates the available supply of inspectors and professional engineers willing to conduct inspections and noted that when RFPs for Duke's pilot inspection program were issued, only Advanced Energy participated.

CCEBA and Strata concluded by requesting that the Commission issue an order restating that the NCIP revisions in its June 2019 Order were not intended to apply to generating facilities with Interconnection Agreements dated prior to June 14, 2019.

### **Reply Comments**

After multiple requests for extensions, which were granted by the Commission, reply comments were filed by Duke, the Public Staff, Strata, and CCEBA on August 5, 2021.

#### **Duke**

Duke reiterated its view that the plain language of the revised 2019 NCIP and the Commission's intent in the June 2019 Order confirm that the Uninspected Facilities are subject to the inspection requirements of Sections 6.5.2, 6.5.3, and 6.5.4. Further, Duke commented that the inspection of medium voltage equipment at the Uninspected Facilities is necessary and appropriate to ensure compliance with the terms of the NCIP and to ensure the Companies are in a position to ensure the safety and reliability of their systems.

Duke commented that following submission of initial comments, Duke and Strata engaged in good faith discussions to resolve concerns regarding implementation of the post-commissioning inspection provisions of the NCIP. Duke explained that in an effort to balance the Duke's safety and reliability concerns and Strata's desire to develop a workable and potentially more cost-effective path for adherence to the requirements of the inspection provisions, Duke and Strata agreed to a process set forth in a d in order to verify such Uninspected Facilities' medium voltage construction in a manner that would comply with the requirements of Sections 6.5.2 and 6.5.3. Duke attached the MOA to its reply comments as Attachment A.

Duke noted its belief that the self-administered compliance program framework described in the MOA achieves the Commission's goals in implementing the post-commissioning inspection requirements and complies with the requirements of Sections 6.5.2 and 6.5.3. Further, Duke noted its belief that, given the robust framework for utility acceptance of the program followed by self-administered implementation, the MOA framework comports with good utility practice and can serve as a path forward for other owners of Uninspected Facilities to implement post-commissioning inspections and take action to ensure the safety and reliability of the grid. Duke commented that without initial action by the Commission clearly mandating that the inspection provisions apply to Uninspected Facilities, owners of Uninspected Facilities may not be incentivized (and certainly will not be compelled) to adopt any self-administered compliance program under the framework set forth in the MOA or to continue to engage with Duke through the

Technical Standards Review Group to reach an appropriate process for implementing post-commissioning inspections as contemplated by Sections 6.5.2, 6.5.3, and 6.5.4 of the 2019 NCIP. For that reason, Duke reemphasized its request that the Commission issue an order making clear that the inspection provisions approved in the June 2019 Order are applicable to all Uninspected Facilities.

### Strata

Strata noted in its reply comments that its belief that the inspection provisions do not apply to “legacy facilities.” Notwithstanding, Strata noted that it engaged with Duke to develop a self-inspection program that would meet the objectives of the NCIP provisions, which program is set forth in the MOA. Strata requests that the Commission “take note” of the self-inspection program “as an appropriate and reasonable mechanism for achieving the aims of Sections 6.5.3 and 6.5.4 of the NCIP, and further, as a responsible result in resolving this dispute between Strata and Duke and avoiding the need for further proceedings.”

Strata stated that it had shared the MOA with CCEBA and the Public Staff and requested the opportunity to file brief supplemental reply comments, if necessary, to address any comments made by other parties in their reply comments.

### CCEBA

In reply comments, CCEBA reiterated its position that neither the June 2019 Order nor the resulting updated NCIP authorize the imposition of a mandatory self-inspection program on generating facilities having fully-executed Interconnection Agreements on or before July 14, 2019.

CCEBA noted that it had reviewed the MOA prior to filing its reply comments and determined that its reply comments were best directed at the provisions of the MOA. CCEBA noted that the MOA makes progress on several issues that divided the parties in March and, for this reason, is a positive development. However, CCEBA noted that there are three areas where further clarification is needed prior to any consideration of the MOA as a document that can apply to the entire industry. Specifically, first, in every area in which the proposed MOA states that standards, lists, or programs will be developed by Duke with participation by Strata, or in good faith collaboration with Strata, CCEBA requested that its members be consulted. CCEBA requested that any approval of the MOA by the Commission be contingent upon such discussion and feedback. Second, CCEBA commented that any resolution of the inspection dispute between stakeholders and Duke is just that, a resolution of a disputed legal matter without determination or concession as to the parties’ legal positions. CCEBA maintained that neither the July 2019 Order nor the NCIP allow for mandatory imposition of an inspection regime of Uninspected Facilities. However, CCEBA pointed out, parties can in good faith reach an agreement for a voluntary inspections regime that promotes the safety and reliability of the grid. Third, CCEBA stated that prior to any Commission approval of the MOA or use of the MOA by Duke as an industry-wide guidance document, further information is

needed as to several specific provisions, including: (1) responsibility for the cost of upgrades if an inspection determines that upgrades are required; (2) 30-day resolution period for deficiencies identified during an audit; (3) responsibility for cost associated with certain equipment remediation determined to be necessary; and (4) the anti-islanding test procedure to be used.

CCEBA concluded its reply comments by stating that without resolution of these issues, the MOA should be seen as only an agreement between the two parties subject to the MOA and should not be made applicable to other parties.

### Public Staff

In reply comments, the Public Staff requested that the Commission clarify that the June 2019 Order and Sections 6.5.2, 6.5.3, and 6.5.4 of the NCIP authorize Duke to inspect the Uninspected Facilities. The Public Staff asserted its view that the revisions to these sections of the NCIP were intended to apply to facilities with Interconnection Agreements prior to the June 2019 Order. The Public Staff further asserted that if Section 6.5.2 does not apply to generating facilities having fully-executed Interconnection Agreements on or before July 14, 2019, it would not apply to any generating facilities, as facilities that did not have executed Interconnection Agreements before the Commission's 2019 NCIP Order could not have commenced parallel operation at the time the sections went into effect. The Public Staff noted that if the Commission finds otherwise, there will be no incentive for Interconnection Customers to inspect these facilities and they will continue to create an unquantifiable risk to the safety and reliability of the grid.

The Public Staff commended the work of Strata and Duke on coming to the agreement embodied in the MOA and provided its view that the self-inspections within the MOA meet the intent of Sections 6.5.2 and 6.5.3. The Public Staff noted that while the initial inspection timelines included in the MOA are products of negotiation, the Public Staff encouraged Strata to complete the initial inspections as quickly as possible. Further, the Public Staff recommended that all other Interconnection Customers with Uninspected Facilities work with Duke to execute similar MOAs to perform self-inspections as soon as possible. The Public Staff recommended that future MOAs between an Interconnection Customer and Duke should be tailored, with regard to the initial inspection timelines, to the particular circumstances of the Interconnection Customer, taking into account the number of facilities that Interconnection Customer is required to inspect. The Public Staff noted that Strata owns a significant portion of the approximately 300 Uninspected Facilities. Further, the Public Staff noted that given that Strata has agreed to complete the initial inspections within three- and five-year timeframes, all other parties should have shorter timelines set out in their MOAs.

Therefore, the Public Staff requested that the Commission set a deadline of January 1, 2022, for the remaining Interconnection Customers with Uninspected Facilities to develop and execute their own MOAs with Duke. Further, the Public Staff recommended that if the remaining Interconnection Customers come to an agreement

with Duke by January 1, 2022, then the Commission should direct Duke to begin inspecting these Uninspected Facilities, at the expense of the Uninspected Facilities.

### Discussion and Decision

The results of the pilot inspections provide clear and compelling evidence that inspection of the Uninspected Facilities is necessary to ensure the safety of those facilities as well as to ensure that the integrity of Duke's electric systems is maintained. The integrity of Duke's electric systems is of critical importance to all North Carolinians. Further, compliance with the NCIP is not a goal but rather is an expectation. Duke and Interconnection Customers shall work together to ensure compliance with the NCIP and to ensure, ultimately, that Duke operates its systems safely and reliably.

In light of the foregoing and notwithstanding the ambiguity of certain provisions of the June 2019 Order, the Commission emphasizes that the provisions of Section 6.5 concerning Post-Commissioning Inspections apply to facilities with Interconnection Agreements executed prior to June 14, 2019. Otherwise, as noted by both the Public Staff and Duke, if the provisions of Section 6.5.2 did not apply to facilities with Interconnection Agreements executed prior to June 14, 2019, they would not apply to any facilities, and the language would have no effect.

The inspection of Generating Facilities, including the Uninspected Facilities, is necessary to ensure the safe and reliable operation of the electric system.

Therefore, the Commission shall revise Section 1.1.3 as shown in Attachment A of this Order to clarify that the 2019 revisions to Section 6.5 apply to all Generating Facilities, regardless of the date of their Interconnection Agreements. As the Commission stated in its June 2019 Order, the Interconnection Standards must provide for post-commissioning inspections of Generating Facilities, and it is appropriate for Interconnection Customers to reimburse the Utilities for periodic inspection costs.

To this end, the Commission determines that the agreement between Duke and Strata regarding a self-inspection program, as memorialized in the MOA, is a reasonable start towards compliance with the requirements of the June 2019 Order and NCIP. Additionally, all other Interconnection Customers with Uninspected Facilities shall work with Duke develop similar self-inspection programs, memorialized in memoranda of agreement. Any future agreements between an Interconnection Customer and Duke should be tailored, with regard to the initial inspection timelines, to the particular circumstances of the Interconnection Customer, taking into account the number of facilities that Interconnection Customer is required to inspect. All Interconnection Customers that own Uninspected Facilities must enter into a self-inspection agreement with Duke by no later than February 1, 2022, and must complete self-inspections of the Uninspected Facilities within three years from the date of execution of the agreement with Duke. Duke shall file a report with the Commission by February 23, 2022, as to the status of the self-inspection agreements entered into and any remaining Uninspected Facilities that are not covered by an agreement.



In addition, given the nature and number of issues cited by Advanced Energy through its inspection work for Duke, the Commission is concerned at this time that self-administered compliance programs might not be sufficient to ensure the safe operation of the Duke systems. Therefore, the Commission shall take additional action, as necessary, with respect to the inspection of the Uninspected Facilities should Interconnection Customers and Duke not be able to reach agreement on the timely self-inspection of the Uninspected Facilities.

Additionally, the Commission directs Dukes to file a report with the Commission, updating the Commission as to the status of each violation found by Advanced Energy during its three rounds of inspection work. Duke shall file its report sixty days from the date of this Order. In this report, Duke must explain its process for inspecting facilities prior to their commencing operation.

IT IS, THEREFORE, ORDERED as follows:

- 1) That the NCIP is revised as indicated in Attachment A of this Order;
- 2) That Duke shall file a report detailing the status of remediation efforts at the 65 generating facilities that have been inspected by Advanced Energy within 60 days of the date of this Order;
- 3) That Duke shall serve a copy of this order on all owners of Uninspected Facilities as soon as reasonably possible; and
- 4) That Duke shall file a report by February 23, 2022, detailing the status of self-inspection agreements with owners of Uninspected Facilities.

IT IS, THEREFORE, SO ORDERED.

ISSUED BY ORDER OF THE COMMISSION.

This the 8th day of October, 2021.

NORTH CAROLINA UTILITIES COMMISSION



Joann R. Snyder, Deputy Clerk

## 1.1.3

The 2019 revisions to this Interconnection Standard shall not apply to Generating Facilities having a fully executed Interconnection Agreement as of the effective date of the 2019 revisions to this Standard, unless the Interconnection Customer proposes a Material Modification, transfers ownership of the Generating Facility, or application of the 2019 revisions to the Commissions Interconnection Standard are agreed to in writing by the Utility and the Interconnection Customer. This Standard shall apply if the Interconnection Customer does not have a fully executed Interconnection Agreement for the Generating Facility as of the effective date of the 2019 revisions. Provision 6.5 shall apply to all Generating Facilities, regardless of the date of their Interconnection Agreement. Revised fees and new deposits will apply to new Interconnection Requests and future transactions involving existing Interconnection Requests occurring after the effective date of the 2019 revisions, except that fees for inspections shall apply to all Generating Facilities, regardless of the date of their Interconnection Agreement.

Any Interconnection Customer that has not executed an Interconnection Agreement with the Utility prior to the effective date of the 2019 revisions to this Standard shall have 45 Business Days following the later of the effective date of the Standards or the posted date of notice in writing from the Utility to make prepayment or provide Financial Security in a form reasonably acceptable to the Utility for any Network Upgrades identified in the Interconnection Customer's System Impact Study Report as required by Section 4.3.9 of the Procedures.