INFORMATION SHEET

PRESIDING: Chairman Finley, Presiding; and Commissioners Brown-Bland, Dockham, Patterson, Gray, Clodfelter, and Mitchell
PLACE: Dobbs Building, Room 2115, Raleigh, NC
DATE: Wednesday, January 30, 2019
TIME: 2:15 p.m. to 4:59 p.m.
DOCKET NO.: E-100, Sub 101; E-2, Sub 1159; E-7, Sub 1156
VOLUME NUMBER: 6
COMPANIES: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC
DESCRIPTION: Petition for Approval of Generator Interconnection Standard and Joint Petition of Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC, for Approval of Competitive Procurement of Renewable Energy Program

APPEARANCES
Please see attached.

WITNESSES
Please see attached.

EXHIBITS

Please see attached.

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CONFIDENTIAL: Kells (CANNOT RECEIVE DUKE CONFIDENTIAL); Jirak, Breitschwerdt, Kemerait, Ledford, Smith, Dodge, Cummings, Harrod and Townsend
REPORTED BY: Joann Bunze
DATE FILED: February 13, 2019

TRANSCRIPT PAGES: 137
PREFILED PAGES: 97
TOTAL PAGES: 234

PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Wednesday, January 30, 2019

TIME: 2:15 p.m. - 4:59 p.m.

DOCKET NO.: E-100, Sub 101

E-2, Sub 1159

E-7, Sub 1156

ORIGINAL

BEFORE: Chairman Edward S. Finley, Jr., Presiding

Commissioner ToNola D. Brown-Bland

Commissioner Jerry C. Dockham

Commissioner James G. Patterson

Commissioner Lyons Gray

Commissioner Daniel G. Clodfelter

Commissioner Charlotte A. Mitchell

IN THE MATTER OF:

Petition for Approval of Generator

Interconnection Standard

and

Joint Petition of Duke Energy Carolinas, LLC,

and Duke Energy Progress, LLC, for

Approval of Competitive Procurement of

Renewable Energy Program

Volume 6

Noteworthy
Reporting Services, LLC

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Special Deputy Attorney General
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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/28/2019
DOCKET #: E-100 Sub 101
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TITLE Counsel
FIRM NAME McGuireWoods LLP
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CITY Raleigh NC
ZIP 27601

APPEARING FOR: Dominion Energy NC

APPLICANT ✓ **COMPLAINANT** ____ **INTERVENOR** ____

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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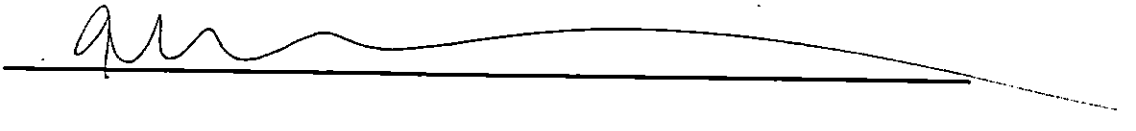
Signature: 

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/28
DOCKET #: E100 Sub 1091
NAME OF ATTORNEY Jack Jirak
TITLE Associate General Counsel
FIRM NAME Duke Energy
ADDRESS
CITY
ZIP

APPEARING FOR: Duke Energy

APPLICANT ✓ **COMPLAINANT** ____ **INTERVENOR** ____

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1-28-16
DOCKET #: E-100 Sub 101
NAME OF ATTORNEY E Brett Breitschwerdt
TITLE McGuire Partner
FIRM NAME McGuire Woods
ADDRESS
CITY
ZIP

APPEARING FOR: Duke Energy

APPLICANT X **COMPLAINANT** ____ **INTERVENOR** ____

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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Signature: E Brett Breitschwerdt

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/29/2019
DOCKET #: E-100 Sub 101
NAME OF ATTORNEY Karen Kemerait
TITLE attorney for NCLEUN
FIRM NAME
ADDRESS
CITY
ZIP

APPEARING FOR:

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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Signature: Karen Kemerait

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE January 28, 2019
DOCKET #: E-100 Sub 101
NAME OF ATTORNEY Peter Ledford
TITLE General Counsel
FIRM NAME NC Sustainable Energy Association
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CITY Raleigh, NC
ZIP 27609

APPEARING FOR: NC Sustainable Energy Association

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** X

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/28/2019
DOCKET #: E-100 Sub 101
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APPEARING FOR: North Carolina Sustainable Energy Association

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1-28-2019
DOCKET #: E 100 Sub 101
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APPEARING FOR: Interstate Renewable Energy Council, Inc.

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE E-100 Sub 151
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NAME OF ATTORNEY Lauren Bowen
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ZIP 27516

APPEARING FOR: Interstate Renewable Energy Council

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/28/19
DOCKET #: E-100 Sub 101
NAME OF ATTORNEY Kurt Olson
TITLE Counsel
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APPEARING FOR: North Carolina Pork Council

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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Signature: Kurt J. Olson

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 1/28/2019
DOCKET #: E-100, Sub 101
NAME OF ATTORNEY Benjamin Snowden
TITLE Counsel
FIRM NAME Kilpatrick Townsend Stockton LLP
ADDRESS 4208 Six Forks Rd., Suite 1400
CITY Raleigh
ZIP 27609

APPEARING FOR: Cypress Creek Renewables

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 01/28/19
DOCKET #: E-100, Sub 101
NAME OF ATTORNEY Tom Dodge & Layla Cummings
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FIRM NAME Public Staff
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CITY ~~Durham~~ Raleigh NC
ZIP ~~27~~ 27699-4300

APPEARING FOR: Public Staff

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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NORTH CAROLINA UTILITIES COMMISSION
APPEARANCE SLIP

DATE 4/28/19
DOCKET #: E-100, Sub 101
NAME OF ATTORNEY Teresa Townsend Jennifer Harrod
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FIRM NAME DOJ - AGO "
ADDRESS 114 W. Edenton St. "
CITY Raleigh, NC "
ZIP 27603

APPEARING FOR: Using + Consuming public + on behalf of State of NC and in the matter that affects the public interest

APPLICANT ____ **COMPLAINANT** ____ **INTERVENOR** ✓

PROTESTANT ____ **RESPONDENT** ____ **DEFENDANT** ____

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☑ Yes, **I have signed the confidentiality agreement** and would like an electronic copy of the **confidential transcript(s)**

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Signature: Teresa Townsend

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NCCEBA Panel Cross Examination
Exhibit Number 1
DEC/DEP
Exhibit No.

I/A

NCCEBA
Data Request No. 1
Docket No. E-100, Sub 101
NCIP
Item No. 1-6

DUKE ENERGY CAROLINAS, LLC and DUKE ENERGY PROGRESS, LLC

Request:

On page 38 of his direct testimony, Witness Gajda states that while changes to the DC portion of a facility do not impact several components of a System Impact Study, failure to account for the production profile of a facility could produce grossly inaccurate study results. It is our understanding that the System Impact Study considers peak loading and minimum daylight loading cases to evaluate thermal. In the System Impact Study, is the use of these two load cases the only area in which the production profile of a generation facility is considered? If not, in what other portions of the System Impact Study is the production profile relevant?

Response:

As background, the primary study elements of System Impact Study are as follows:

- Thermal/Voltage study (which includes the Flicker/RVC analysis for distribution only)
- Stability analysis (generally analyzed for transmission only)
- Short circuit analysis
- Protection study

Thermal/Voltage Study

In the case of distribution-connected solar facilities (with no storage), the Companies' historic practice for the thermal/voltage study has been to evaluate two study scenarios: (1) historical peak level between 9 AM and 5 PM against full generating facility output; and (2) historical minimum load level between 9 AM and 5 PM against full generating facility output.

In the case of transmission-connected solar facilities (with no storage), the Companies' historic practice for thermal/voltage study differs slightly between DEP and DEC. Thermal/voltage studies for transmission-connected projects in DEC evaluate two study scenarios: (1) peak customer load level, with the proposed solar generating facility at full output and existing solar projects at 80% output; and (2) 12,000 MW customer load level, with the proposed solar generating facility at full output and existing solar projects at full output. Thermal/voltage studies for transmission-connected projects in DEP evaluate 90% of peak customer load level, with proposed and existing solar projects at full output.

In summary, a 24/7, 8760 production profile has not historically been used for the thermal/voltage study of solar only generating facilities. Use of a production profile has not been necessary because the Companies have a relatively high degree of certainty regarding the production profile of a solar only facility. In fact, one of the assumptions that the Companies make is that it is only necessary to study the solar generating facility during the "daylight hours" (defined for study purposes as 9 AM – 5 PM) because the Companies understand that a solar only facility will not be producing significant output beyond 5 PM. Therefore, for the sake of efficiency in order to process solar only projects, the Companies select discrete time periods for study.

This more focused study process applied to solar only Interconnection Requests stands in contrast to the study process that would be applied in the case of other generating facility fuel types that have the capability to generate output at maximum capacity 24/7, 8760, such as gas, hydro or biomass facilities. These generating facility fuel types are studied based on the capacity to produce at full capacity 24/7, 8760.

As discussed above, while the production profile of a solar only facility is relatively certain (thereby allowing the Companies to utilize the thermal/voltage study methodologies described above), the production profile of a solar plus storage facility is not certain, given that, depending on the size of the battery, the facility could be generating at full max capacity at any time of the day. In fact, the potential production profile of a solar plus storage facility has more similarities to a gas, hydro or biomass facility, though it should be noted that concerns remain regarding identifying precisely how battery plus storage resources will be operated.

On a related note, the assumption described above that the facility will not operate at significant capacity after 5 PM is no longer valid in the case of a solar plus storage facility (which concern is reinforced by the fact that many of the existing solar facilities that may add storage are under PPAs that have on-peak pricing that extends past 5 PM, thereby creating an economic incentive to produce additional output later than 5 PM).

RVC (rapid voltage change) and/or flicker analyses could be impacted as well. Of particular concern with energy storage facilities are the transition states between discharging, charging, and anywhere in between. Energy storage facilities changing output too sharply or rapidly could present a serious impact to RVC and/or flicker. This characteristic could present itself, for example, in energy shifting applications or in frequency regulation applications.

The Companies are still in the process of determining how to appropriately study the voltage/thermal impacts (along with RVC/flicker) of solar plus storage facilities. The Companies could elect to study solar plus storage facilities based on the capacity to produce 24/7, 8760 (as is done in the case of other generation such as hydro and biomass facilities) but the Companies are also considering the option of studying the generating facility based on the production profile provided. The concern, however, with the latter approach is that there is currently no contractual or NC Procedures mechanism to ensure that a solar plus storage facility is actually operated in accordance with the projected production profile provided by the Interconnection Customer.

From a big picture perspective, it is impossible to accurately study any generating resource until the Companies have certainty regarding how a particular resource will be operated. This principal is true for the system impact study of any generating resource. The prior assumptions underlying the study of solar only resources are no longer accurate with respect to solar plus storage resources.

Finally, it should be noted that as generating facilities become more complex with regards to production profiles, and penetration levels for all uncontrolled generation increase, "8760" studies (or a subset thereof) may be necessary in the future. This "8760" approach would most conservatively align with Section 7 of the System Impact Study Agreement, which provide that the "System Impact Study shall model the impact of the Generating Facility regardless of purpose in order to avoid the further expense and interruption of operation for reexamination of feasibility and impacts if the Interconnection Customer later changes the purpose for which the Generating Facility is being installed." As has always been the case, the Companies will seek to balance accuracy with expediency.

Stability Analysis

For AC-coupled energy storage proposed on the AC side of the inverter, the results of any stability analysis would be clearly affected, since the inverter serving the energy storage is a dynamic device that will respond to faults on the grid. For DC-coupled energy storage, the study assumes no additional inverter serving the energy storage, and therefore there is no additional inverter available to alter the dynamic response of the facility. However, stability results could still be affected, if and when the stability analyses may have to model the state of the system at a time other than solar noon. At such a time, conventional solar facilities would not be modeled at full output, but a solar plus storage facility, with DC-coupled storage, would have to be modeled at a greater output level, thereby altering the system model and the stability analysis results.

Also, note that stability analysis is typically only performed for transmission studies.

Short Circuit Study

Short circuit studies do not take into account the production profile of a generating facility. For DC-coupled energy storage proposed on the DC side of existing inverter(s), fault current contributions from the inverter(s) should remain the same and hence would not impact the utility system AC short-circuit study. However, AC-coupled energy storage, which presumably would utilize dedicated inverter(s), would indeed impact the short-circuit study, as fault current contribution would be changed.

Protection Study

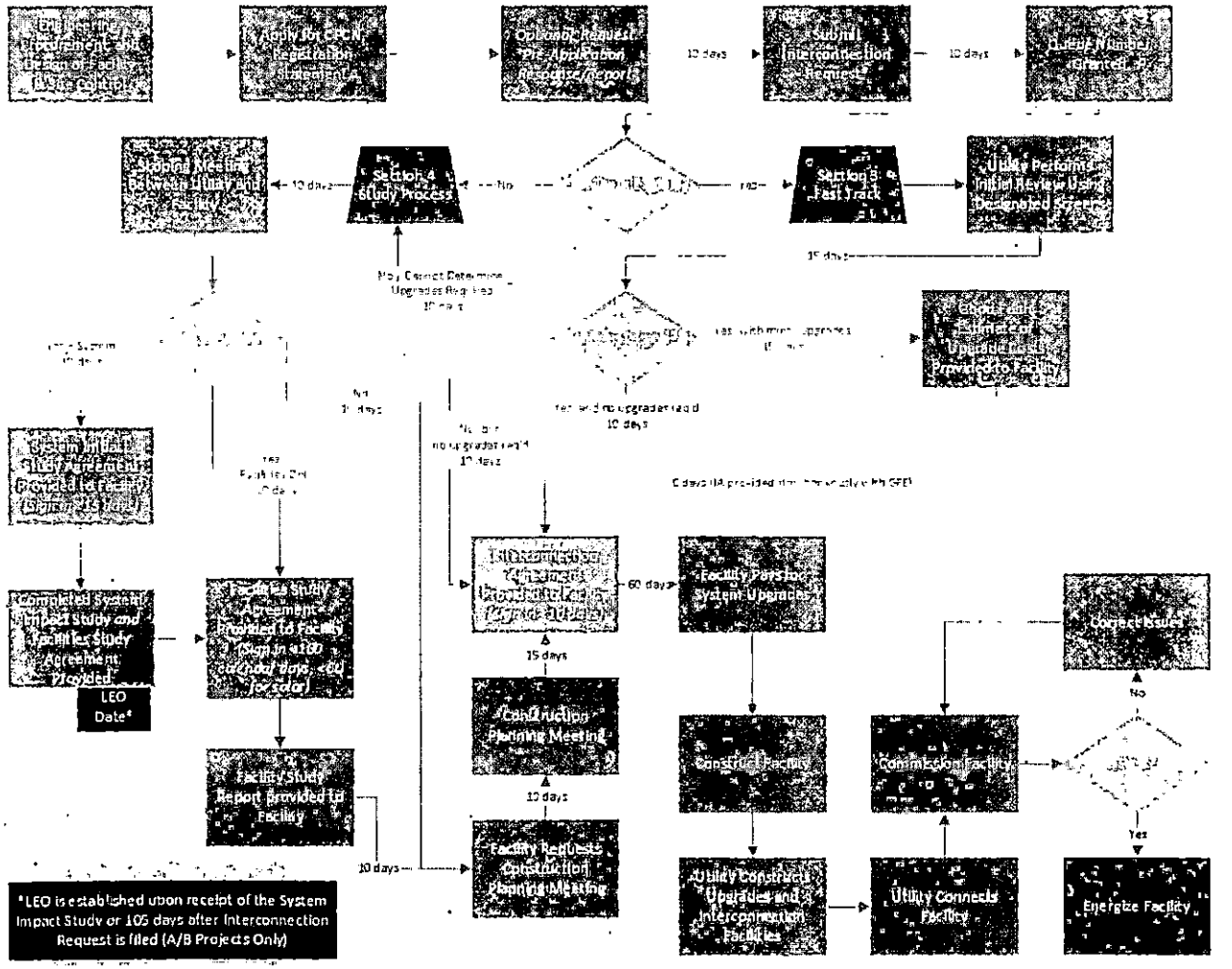
In general, DC-coupled energy storage would not impact protection and set point coordination studies.

However, AC-coupled energy storage, which presumably would utilize dedicated inverter(s), would change the AC side of the generating facility. Additional fault current delivery capability and/or different protective devices could indeed affect protection and set point coordination studies.

Williamson

ATTACHMENT A

NCIP PROCESS



A/H

Lucas Exhibit No. 1

6.2 Disputes

6.2.1 The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this section. ~~Where an Interconnection Customer seeks to resolve a dispute involving its Queue Number according to the provisions of this section, any disputed loss of Queue Number shall not be final until Interconnection Customer abandons the process set out in this section or a final Commission order is entered.~~ Each Party agrees to conduct all negotiations in good faith.

6.2.2 In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute. A copy of the Notice of Dispute shall also be served on the Public Staff.

6.2.3 ~~If the dispute has not been resolved within ten (10) Business Days after receipt of the Notice, either Party may contact the Public Staff for assistance in informally resolving the dispute~~ The Parties shall seek to resolve a dispute within twenty (20) Business Days after receipt of the Notice. ~~If the Parties are unable to informally resolve the dispute, either Party may then file a formal complaint with the Commission.~~ If a resolution is not reached, the Parties may 1) if mutually agreed, continue negotiations for up to an additional twenty (20) Business Days; or 2) either Party may contact the Public Staff for assistance in informally resolving the dispute within twenty (20) Business Days with the opportunity to extend this timeline upon mutual agreement.

6.2.4 ~~Each Party agrees to conduct all negotiations in good faith.~~ In the alternative, the parties may, upon mutual agreement, seek the assistance of a dispute resolution service to resolve the dispute within twenty (20) Business Days, with the opportunity to extend this timeline upon mutual agreement. The dispute resolution service will assist the parties in either resolving the dispute or in selecting an appropriate dispute resolution venue (e.g., mediation, settlement judge, early neutral evaluation, or technical expert) to assist the parties in resolving their dispute. Each Party will be responsible for one-half of any costs paid to neutral third-parties.

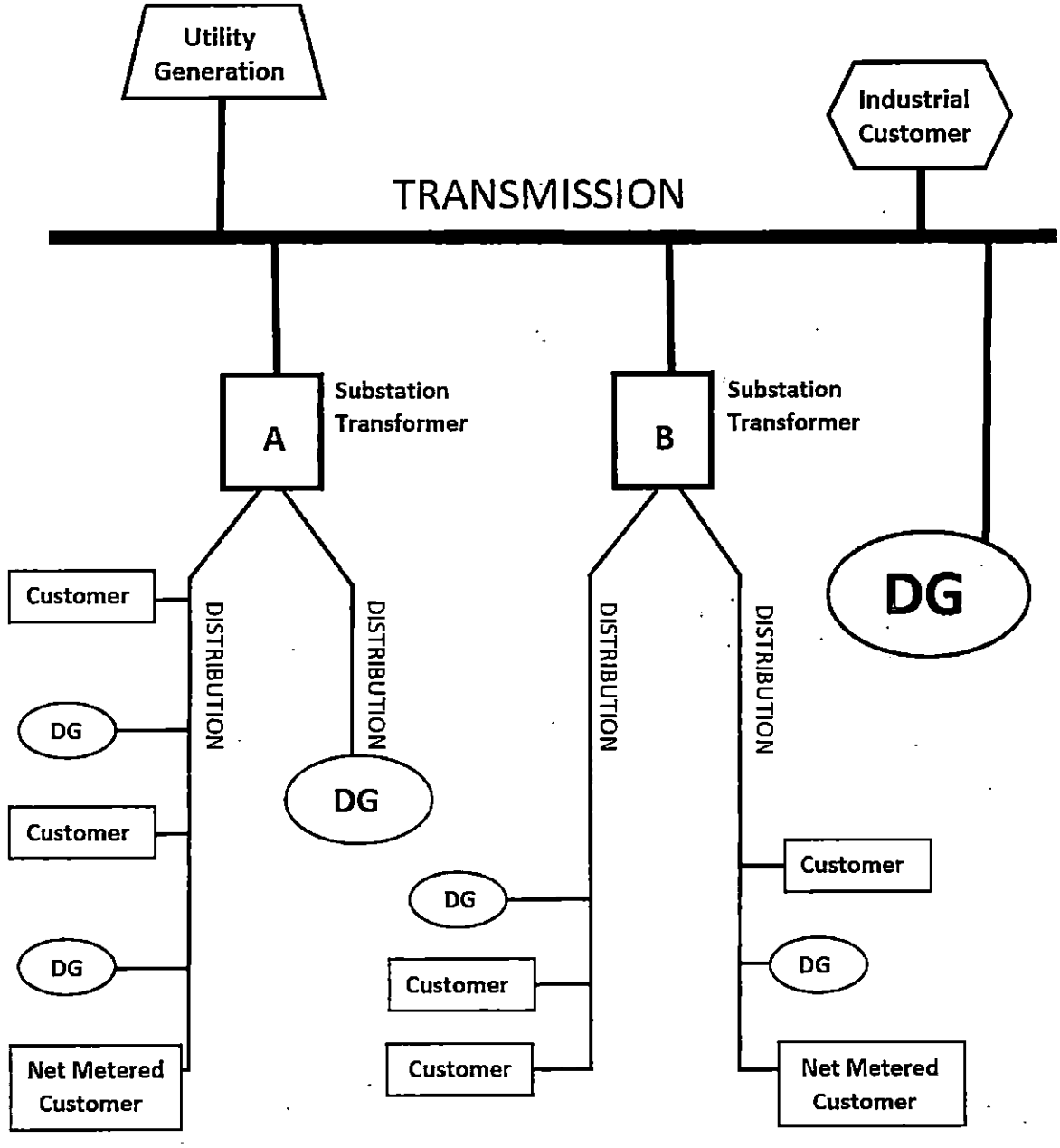
6.2.5 If the Parties are unable to informally resolve the dispute within the timeframe provided in Sections 6.2.3 or 6.2.4, either Party may then file a formal complaint with the Commission, and may exercise whatever rights and remedies it may have in equity or law consistent with the terms of these procedures.

6.2.6 The Queue Number assigned to an Interconnection Customer seeking to resolve a dispute shall not be withdrawn pursuant to Section 6.3 unless: (1) the Interconnection Request is deemed withdrawn by the Utility and the Interconnection Customer fails to take advantage of any express opportunity to cure; (2) the informal dispute processes described in Sections 6.2.3 and 6.2.4 does not resolve the dispute and the Interconnection Customer does not indicate its intent to file a formal complaint within ten (10) Business Days following the completion of the informal dispute process and file a formal complaint within (30) Business Days; (3) the Commission issues a final order on a formal complaint process stating that the Interconnection Request is deemed withdrawn; or (4) the Interconnection Customer voluntarily submits a written request for withdrawal.

Lucas Exhibit No. 2

NCIP Section	Existing Fee/Deposit	Proposed Fee/Deposit
Pre-Application Report: § 1.3.1 *Fee*	$300	$500
Interconnection Request Application Form: Attachment 2 *Fast Track Process Fee* *≥20 kW but ≤100 kW*	$250	$750
Interconnection Request Application Form: Attachment 2 *Fast Track Process Fee* *>100 kW but ≤ 2 MW*	$500	$1,000
Interconnection Request Application Form for Interconnection Attachment 2 *Transfer of Ownership/Control Fee*	$50	$500
Interconnection Request Application Form for Interconnection Attachment 2 *Supplemental Review Deposit* *>20 kW but ≤ 100 kW*	$250	$750
Interconnection Request Application Form for Interconnection Attachment 2 *Supplemental Review Deposit* *>100 kW but ≤ 2 MW*	$500	$1000
Interconnection Request Application Form for Interconnection a Certified Inverter-Based Generating Facility No Larger than 20 kW: Attachment 6 *Processing Fee*	$100	$200*

* Changed from $350 to $200 based on correspondence from Duke Energy dated November 6, 2018, to parties in this docket.



Under current cost-of-service procedures, costs for future maintenance, repair, and replacement of the transmission lines, substation transformers, and distribution lines beyond the point of interconnection will be paid for by the Customers, not the Distributed Generation (DG) developers.

I/A

Lucas Rebuttal Exhibit No. 1

Change Key:

Duke Energy ~~removals~~ and additions proposed in initial testimony
Public Staff ~~removals~~ and additions proposed for rebuttal

1.5 Modification of the Interconnection Request

"Material Modification" means a modification to machine data or equipment configuration or to the interconnection site of the Generating Facility that has a material impact on the cost, timing or design of any Interconnection Facilities or Upgrades or that may adversely impact other Interdependent Interconnection Requests with higher Queue Numbers. Material Modifications include certain project revisions as defined in Section 1.5.1, but exclude certain project revisions as defined in Section 1.5.2.

1.5.1 Changes indicia of a Material Modification are described as follows.

1.5.1.1~~(a)~~ Indicia of a Material Modification before the System Impact Study Agreement has been ~~fully~~ executed ~~begun~~ by the Interconnection Customer include only:

1.5.1.1.1 A change in Point of Interconnection (POI) to a new location, unless the change in a POI is on the same circuit less than two (2) poles away from the original location, and the new POI is within the same protection zone as the original location;

~~1.5.1.2 A change or replacement of generating equipment such as generator(s), inverter(s), transformers, relaying, controls, etc. that is not a like-kind substitution in size, ratings, impedances, efficiencies or capabilities of the equipment specified in the original or preceding Interconnection Request;~~

1.5.1.1.2 A change from certified to non-certified devices ("certified" means certified by an OSHA recognized Nationally Recognized Test Laboratory (NRTL), to relevant UL and IEEE standards, authorized to perform tests to such standards);

~~1.5.1.4 A change of transformer connection(s) or grounding from that originally proposed;~~

~~1.5.1.5 A change to certified inverters with different specifications or different inverter control specifications or set-up than originally proposed;~~

1.5.1.1.3 An increase of the Maximum Generating Capacity of a Generating Facility; or

1.5.1.1.4 A change reducing the AC output of the generating facility by more than 10%.

1.5.1.2~~(b)~~ Indicia of a Material Modification after the System Impact Study Agreement has been ~~fully~~ executed by the Interconnection Customer include, but are not limited to:

1.5.1.2.1 A change in Point of Interconnection (POI) to a new location, unless the change in a POI is on the same circuit less than two (2) poles away from the original location, and the new POI is within the same protection zone as the original location;

1.5.1.2.2 A change or replacement of generating equipment such as generator(s), inverter(s), transformers, relaying, controls, etc. that is not a like-kind substitution in size, ratings, impedances, efficiencies or capabilities of the equipment specified in the original or preceding Interconnection Request;

1.5.1.2.3 A change from certified to non-certified devices ("certified" means certified by an OSHA recognized Nationally Recognized Test Laboratory (NRTL), to relevant UL and IEEE standards, authorized to perform tests to such standards);

1.5.1.2.4 A change of transformer connection(s) or grounding from that originally proposed;

1.5.1.2.5 A change to certified inverters with different specifications or different inverter control specifications or set-up than originally proposed;

1.5.1.2.6 An increase of the Maximum Generating Capacity of a Generating Facility; or

1.5.1.2.7~~6~~ A change reducing the Maximum Generating Capacity of the generating facility by more than 10%.

1.5.2 Changes not indicia of a Material Modification are described as follows.

1.5.2.1 The following are not indicia of a Material Modification before the System Impact Study Agreement has been executed by the Interconnection Customer:

1.5.2.1.1 A change in the DC system configuration to include additional equipment including: DC optimizers, DC-DC converters, DC charge controllers, power plant controllers, and energy storage devices, so long as the proposed change does not violate any of the provisions laid out in Section 1.5.1.1.

1.5.2.2 Except as provided for in Section 1.5.2.1, the ~~The~~ following are not indicia of a Material Modification at any time:

1.5.2.2.1 A change in ownership of a Generating Facility; the new owner, however, will be required to execute a new Interconnection Agreement and Study agreement(s) for any Study which has not been completed and the Report issued by the Utility.

1.5.2.2.2 A change or replacement of generating equipment such as generator(s), inverter(s), solar panel(s), transformers, relaying, controls, etc. that is a like-kind substitution in size, ratings, impedances, efficiencies or capabilities of the equipment specified in the original or preceding Interconnection Request;

1.5.2.2.3 An increase in the DC/AC ratio that does not increase the maximum AC output capability of the generating facility;

1.5.2.2.4 A decrease in the DC/AC ratio that does not reduce the AC output capability of the generating facility by more than 10%.

1.5.2.2.5 A change in the DC system configuration to include additional equipment that does not impact the Maximum Generating Capacity, daily production profile or the proposed AC configuration of the Generating Facility including: DC optimizers, DC-DC converters, DC charge controllers, ~~static VAR compensators~~, power plant controllers, and energy storage devices such that the output is delivered during the same periods and with the same profile considered during the System Impact Study.

Jack E. Jirak
Associate General Counsel

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November 19, 2018

VIA ELECTRONIC FILING

Ms. M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

RE: Testimony in North Carolina Interconnection Procedures
Docket No. E-100, Sub 101

Dear Ms. Jarvis:

Enclosed on behalf of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC is the Testimony and Exhibits of Gary Freeman, Jeff Riggins, and John Gajda in the above-referenced docket. If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Sincerely,

Jack E. Jirak

Enclosures

cc: Parties of Record

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Testimony and Exhibits, in Docket No. E-100, Sub 101, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid, properly addressed to parties of record.

This the 19th day of November, 2018.

Jack E. Jirak
Associate General Counsel
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ATTORNEY FOR DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY, PROGRESS, LLC