

**Duke Energy Carolinas  
Response to  
NCJC Data Request  
Data Request No. 9**

**Docket No. E-7, Sub 1214**

**Date of Request: March 6, 2020**

**Date of Response: March 9, 2020**

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***Confidential Responses are provided pursuant to Confidentiality Agreement***

The attached response to NCJC Data Request No. 9-1, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

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NCJC  
Data Request No. 9  
DEC Docket No. E-7, Sub1214  
Item No. 9-1  
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**Request:**

7-1. Refer to Oliver rebuttal testimony, page 8, line 6, which states “This system is not just being rebuilt like-in-kind, it is being transformed into a system that will withstand higher wind and ice loading, higher magnitude lightning strikes, and better resistance to both animal and vegetation caused outages.” Provide a list of outages (by date) on the DEC 44kV system from 2015 to 2019 inclusive, and the duration of each outage, and the count of customers impacted by each outage for its entire duration, for each of the following causes:

- a. High winds
- b. Ice loading
- c. Lightning strikes
- d. Animal-caused outages
- e. Vegetation-caused outages
- f. Equipment failures (by equipment type)
- g. All other outages (by other cause type)

**Response:**

See attached spreadsheet “DEC NCJC DR 9\_DEC 44kV Outage History.xlsx”



DEC NCJC DR  
9\_DEC 44kV Outage

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The attached response to NCJC Data Request No. 9-2, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

NCJC  
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Item No. 9-2  
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**Request:**

7-2. Refer to Oliver testimony workbook Trans\_Line Projects\_DEC\_NC-SC\_19-21\_multiple\_vF\_rev2 7-28-19.xlsx, tab “All Years Summary Tab”, cells D21 to D23 (Structure, static line, and conductor replacement customer benefits, respectively. Provide the count of outage incidents, the duration of each incident, and the counts of customers impacted by each incident, either input into or produced by the Copperleaf C55 software, annually required to deliver the \$2.33618 billion in present value customer benefits presented in cells D21 to D23.

**Response:**

The Company objects to this question as it is referencing information in Oliver Direct Exhibits.

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The attached response to NCJC Data Request No. 9-3, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

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**Request:**

7-3. Refer to Oliver rebuttal testimony page 8, line 10, which states “Wooden structures and other circuit assets on average are beyond their useful life and the rate of failures impacting customers is expected to increase over time.” Provide a list of failures, by date, for each of the following assets on the DEC 44kV system from 2015 through 2019 inclusive:

- a. Structures
- b. Static Lines
- c. Conductor

**Response:**

See attached spreadsheet which includes any failure that caused a momentary or sustained outage: “DEC NCJC DR 9\_DEC 44kV Outage History.xlsx”. Reference both column L Initiating Cause and column N Sustained Cause to filter down on specific categories.



DEC NCJC DR  
9\_DEC 44kV Outage

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The attached response to NCJC Data Request No. 9-4, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

NCJC  
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**Request:**

7-4. Refer to Oliver rebuttal testimony page 44, line 5, which states “The Company intends to track project/program scope, schedule, cost and benefits as appropriate during implementation.” As noted in NCJC witness Alvarez’s testimony (page 40, line 8), 87% of projected benefits relate to reliability, which DEC benefit-cost analyses estimate based on Customer Interruptions and Customer Minutes Interrupted. NCJC notes that to accurately track GIP benefits, baseline performance must be documented as a basis for comparison. For each individual transmission and distribution circuit or subsection tracked by DEC, provide the following data for each of the years 2015 to 2019, inclusive, to serve as bases for future comparisons:

- a. Customer Interruptions, non-MED
- b. Customer Interruptions, MED
- c. Customer Minutes Interrupted, non-MED
- d. Customer Minutes Interrupted, MED
- e. Average annual voltage

**Response:**

The Company intends to track costs and benefits as outlined in the cost benefit analyses contained in Oliver Exhibit 7.



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The attached response to NCJC Data Request No. 9-5, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

NCJC  
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Item No. 9-5  
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**Request:**

7-5. Refer to Oliver rebuttal testimony page 44, line 5, which states “The Company intends to track project/program scope, schedule, cost and benefits as appropriate during implementation.” Describe any revenue requirement reductions to which DEC is willing to commit for project/program scope, schedule, cost, and benefit variances from amounts projected in project/program cost-benefit analyses.

**Response:**

Any reductions in costs as a result of the GIP will be reflected in future rate filings.

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The attached response to NCJC Data Request No. 9-6, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Senior Counsel  
Duke Energy Carolinas

NCJC  
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Item No. 9-6  
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**Request:**

9-6. Refer to Oliver rebuttal testimony page 47, line 1, which states, regarding the targeted undergrounding program “It now focuses on laterals that experience the highest outage events per year in a 1 sustained pattern (ten years of history), correlated with significant age, high 2 percentages of facilities inaccessible to trucks, and high vegetation management 3 expenses.” For each of the years 2015 to 2019 inclusive, provide the number of miles of overhead laterals which were replaced for reasons other than to accommodate load growth.

**Response:**

The table below shows the amount of deteriorated conductor replaced by DEC from 2015-2019. However, the Company does not have a searchable attribute to separate out the amount of fused laterals from amount of feeder backbone, or 3-phase lines protected by reclosers. This table also includes both NC and SC.

DEC Deteriorated Conductor Replacement (OH)

Year Amount Replaced (in feet)

2015: 249,295

2016: 213,649

2017: 291,424

2018: 279,552

2019: 208,054

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The attached response to NCJC Data Request No. 9-7, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

NCJC  
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**Request:**

7-7. Refer to Oliver rebuttal testimony, page 48, line 21, which states “ Dissolved Gas Analysis (DGA) oil testing is the primary means relied upon by Duke Energy to determine substation transformer health and subsequent maintenance and replacement priority.” Provide the DGA results for each DEC transformer selected for replacement in the DEC transformer replacement program.

**Response:**

See attached spreadsheet “DEC NCJC DR 9\_DEC Transformer HRM Surveillance List.xlsx”. This list contains all transformer banks in the Health & Risk Management program classified as Replace, Monitor, and Investigate. DGA results are not available independently but are a contributor to the health scores listed in the spreadsheet (columns K, L, M). Transformer health is monitored regularly by Subject Matter Experts and bank replacement lists are re-prioritized to address the highest priority assets.



DEC NCJC DR  
9\_DEC Transformer t

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The attached response to NCJC Data Request No. 9-8, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

Camal O. Robinson  
Associate General Counsel  
Duke Energy Carolinas

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**Request:**

9-8. Refer to Oliver rebuttal testimony, page 49, line 15, which states, regarding circuit breaker testing, “This program is the primary feeder into the prioritization and sequencing of oil breaker replacements.” Provide the test results for each DEC oil circuit breaker selected for replacement in the DEC oil breaker replacement program.

**Response:**

A variety of test and inspection inputs are used to determine circuit breaker health, along with make/model specific reliability trends, design features, and age. There is no one single test result that determines which breakers are to be included in the GIP. Subject Matter Experts regularly review all of this data to determine circuit breaker health, and replacement lists are then re-prioritized to address the highest priority assets.



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The attached response to NCJC Data Request No. 9-9, was provided to me by the following individual(s): Karen Ann Ralph, Lead Planning and Regulatory Support Specialist, and was provided to NCJC under my supervision.

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Associate General Counsel  
Duke Energy Carolinas

NCJC  
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**Request:**

9-9. Refer to Oliver rebuttal testimony, page 56, line 5, which states “I completely agree that the GIP does not address third party owned DER 5 accommodation in North Carolina because that is not what the plan is designed to do, nor should it be.” Refer also to Oliver direct testimony, Exhibit 2, “Megatrends” which identifies “Renewables and DER Technology Advancements” as one of the Megatrends. Refer also to Oliver direct testimony exhibits 11, 13, and 16, which are reports on GIP stakeholder engagement workshops 1, 2, and 3. NCUC notes that in each of these stakeholder engagement workshops, large numbers of stakeholders prioritized DER enablement as an important GIP outcome. Refer also to Oliver rebuttal testimony page 53, line 1, which states “the feedback received in the workshops was used by the Company to . . . make significant changes to the portfolio of investments.” Finally, refer to Oliver rebuttal testimony page 56, line 15, which states “the Company cannot and should not attempt to get ahead of federal and state rules and evolving policy issues regarding interconnection in the Grid Improvement Plan.”

- a. Explain how Mr. Oliver concludes that GIP stakeholder engagement resulted in “significant changes to the portfolio of investments” when one of stakeholders’ top priorities, DER enablement, was essentially ignored as a priority in the GIP.
- b. Explain why “the Company cannot and should not attempt to get ahead of federal and state rules and evolving policy issues regarding interconnection in the GIP”.
- c. Explain why the Company’s GIP essentially ignores as a priority in the GIP the Megatrend identified as “Renewables and DER Technology Advancements”.

**Response:**

- a) Please see Oliver Rebuttal testimony page 53 line 17 through page 55 line 10.
- b) Please see Oliver Rebuttal testimony page 56 line 1 through 17.
- c) Please see Oliver Exhibit 5 page 3 where each of the programs contained in the GIP are mapped to the individual megatrends. As noted, in the exhibit the vast majority address the Technology Advancements Megatrend.