Sep 08 2022

REPLY TO:

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JOSH STEIN ATTORNEY GENERAL STATE OF NORTH CAROLINA DEPARTMENT OF JUSTICE PO Box 629 RALEIGH, NORTH CAROLINA 27602

September 8, 2022

Shonta Dunston, Chief Clerk The North Carolina Utilities Commission 4325 Mail Service Center Raleigh, NC 27699-432

Re: Docket No. E-100, Sub 179

Honorable Clerk and Commissioners:

On September 2, 2022, the North Carolina Attorney General's Office (AGO) filed in the above-referenced docket the direct testimony of Edward Burgess. After careful review, the AGO and Mr. Burgess have identified technical errors in his testimony that need to be corrected. Specifically, the technical errors were found in Exhibit 2 to Mr. Burgess' testimony. Attached is a redlined version of that exhibit as well as the corrected version.

These corrections do not alter or change the arguments or recommendations made in Mr. Burgess' testimony. The AGO apologizes for any inconvenience that may have been caused by these errors. Please do not hesitate to contact me with any questions.

By copy of this letter, I am forwarding a copy of the revised Exhibit 2 to all parties of record.

Sincerely,

<u>Electronically submitted</u> /s/Tirrill Moore Assistant Attorney General temoore@ncdoj.gov

Exhibit 2: AGO Supplemental Portfolio Modeling Results

The following exhibit provides a summary of the results from the SP-AGO Supplemental Portfolio. These results were derived from the EnCompass model run performed by Strategen for the AGO and described in the AGO's testimony. Post processing was conducted in the same manner as other portfolios analyzed in this proceeding.

I. <u>Summary of Key Resource Additions and Retirements in SP-AGO and P1 Portfolios¹</u>

| Carbon Plan Portfolios | | P1 | SP-AGO | | | | | |
|---|--|---|------------------------|----------------------|--|--|--|--|
| | Resources (MW) Start of Year (2030 / 2035) | | | | | | | |
| Total System Solar | 12,307 | 18,829 | 12,445 | 16,264 <u>17,427</u> | | | | |
| | | | | 24,109 | | | | |
| Incremental System Solar (excludes projects in development) | 5,400 | 11,850 | 6,126 | 9,94 <u>5</u> 10,740 | | | | |
| in development) | | | | — 17,580 | | | | |
| Incremental Onshore Wind (incl. imports) | 600 | 1,200 | 3,000 2,250 | 3,600 | | | | |
| Incremental Offshore Wind | 800 | 800 | 800 | 800 | | | | |
| Incremental SMR Capacity | 0 | 570 | 0 | 855 570 | | | | |
| Incremental Energy Storage | 2,067 | 5,671 | 3,490 ² | 6,800 | | | | |
| Incremental Gas (CC) | 2,430 | 2,430 | 0 | 0 | | | | |
| Incremental Gas (CT) | 1,128 | 1,128 | 462 | 462 | | | | |
| Incremental Coal to Gas Conversion | 849 | 849 | 1959 | 1959 | | | | |
| Early Coal Retirements | Subcritical by 2030; MSS 3&4 in 2032 | xcept Rox 3&4 in 2033; elews Creek conversion by | | | | | | |
| Total Coal Retirements [MW] by End of 2035 | 8,445 | | 9,294 | | | | | |

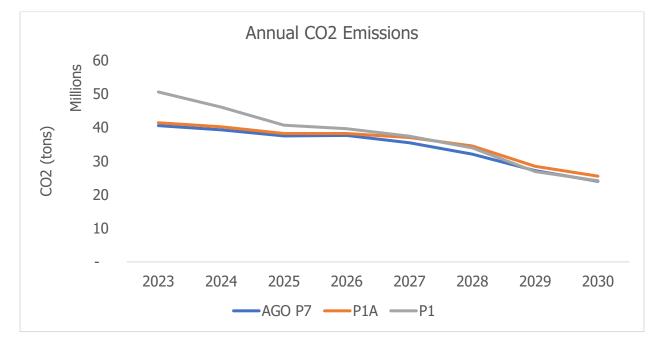
II. <u>HB 951 Compliance and Cost for all Duke-modeled Portfolios and SP-AGO</u>

| Portfolio | Year in which 70% NC CO2 Reduction Achieved (2030 compliant portfolios in bold) | Present Value Revenue Requirement (PVRR) through 2050 (DEP/DEC Combined System) [\$B] |
|------------------|---|---|
| P1 | 2030 | \$101 |
| P2 | 2032 | \$99 |
| P3 | 2034 | \$95 |
| P4 | 2034 | \$96 |
| P1 _A | 2030 | \$104 |
| P2 _A | 2032 | \$101 |
| P3 _A | 2034 | \$99 |
| P4 _A | 2034 | \$99 |
| SP5 | 2032 | \$102 |
| SP6 | 2034 | \$98 |
| SP5 _A | 2032 | \$98 |
| SP6 _A | 2034 | \$95 |
| SP-AGO | 2030 | \$100 |

¹ Derived from Duke Energy Carbon Plan, Chapter 3, Table 3-3.

² Includes both standalone storage and pumped hydro.

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III. Emissions Performance Of All 2030-Compliant Portfolios

| SP-AGO, Cummulative MW | | | | | | | | | | | |
|-----------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Additions | 2023-2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
| СТЈ | - | - | - | 462 | 462 | 462 | 462 | 462 | 462 | 462 | 462 |
| CT J H2 | - | - | - | - | - | - | - | - | - | - | - |
| 2x1 CCJ | - | - | - | - | - | - | - | - | - | - | - |
| 2x1 CCF | - | - | - | - | - | - | - | - | - | - | - |
| SMR | - | - | - | - | - | - | - | 285 | 285 | 570 | 855 |
| Advanced Reactor w/ Storage | - | - | - | - | - | - | - | - | - | - | - |
| Onshore Wind | - | - | 750 | 1,500 | 2,250 | 3,000 | 3,450 | 3,600 | 3,600 | 3,600 | 3,600 |
| Offshore Wind (2029) | - | - | - | - | 800 | 800 | 800 | 800 | 800 | 800 | 800 |
| Standalone Solar | 1,418 | 1,787 | 1,856 | 1,925 | 1,994 | 2,063 | 2,063 | 2,063 | 2,063 | 2,063 | 2,063 |
| S+S 25% Battery Ratio, 4hrs | - | 675 | 1,950 | 2,400 | 2,400 | 2,400 | 3,375 | 3,825 | 4,050 | 4,425 | 5,400 |
| S+S 50% Battery Ratio, 2hrs | - | - | - | 600 | 600 | 600 | 600 | 600 | 750 | 750 | 750 |
| S+S 50% Battery Ratio, 4hrs | - | - | - | 750 | 2,550 | 3,525 | 3,825 | 3,825 | 3,825 | 4,125 | 4,650 |
| 4-hr Battery | 297 | 297 | 297 | 947 | 947 | 947 | 997 | 997 | 997 | 1,097 | 1,097 |
| 6-hr Battery | - | - | - | - | - | - | - | - | - | - | - |
| 8-hr Battery | - | - | - | - | - | - | - | - | - | - | - |
| Bad Creek II | - | - | - | - | - | - | - | 1,680 | 1,680 | 1,680 | 1,680 |

IV. SP-AGO, Cumulative Resource Additions by Year

Exhibit 2: AGO Supplemental Portfolio Modeling Results

The following exhibit provides a summary of the results from the SP-AGO Supplemental Portfolio. These results were derived from the EnCompass model run performed by Strategen for the AGO and described in the AGO's testimony. Post processing was conducted in the same manner as other portfolios analyzed in this proceeding.

I. <u>Summary of Key Resource Additions and Retirements in SP-AGO and P1 Portfolios¹</u>

| Carbon Plan Portfolios | | P1 | | SP-AGO | | | | |
|---|--|--------|--------------------|--|--|--|--|--|
| | Resources (MW) Start of Year (2030 2035) | | | | | | | |
| Total System Solar | 12,307 | 18,829 | 12,445 | 16,264 | | | | |
| Incremental System Solar (excludes projects in development) | 5,400 | 11,850 | 6,126 | 9,945 | | | | |
| Incremental Onshore Wind (incl. imports) | 600 | 1,200 | 2,250 | 3,600 | | | | |
| Incremental Offshore Wind | 800 | 800 | 800 | 800 | | | | |
| Incremental SMR Capacity | 0 | 570 | 0 | 570 | | | | |
| Incremental Energy Storage | 2,067 | 5,671 | 3,490 ² | 6,800 | | | | |
| Incremental Gas (CC) | 2,430 | 2,430 | 0 | 0 | | | | |
| Incremental Gas (CT) | 1,128 | 1,128 | 462 | 462 | | | | |
| Incremental Coal to Gas Conversion | 849 | 849 | 1959 | 1959 | | | | |
| Early Coal Retirements | Subcritical by 203 MSS 3&4 in 2032 | | | Subcritical by 2030 except Rox 3&4 in 2033; MSS 3&4 in 2032; Belews Creek conversion by 2028 | | | | |
| Total Coal Retirements [MW] by End of 2035 | 8,445 | | 9,294 | 9,294 | | | | |

II. HB 951 Compliance and Cost for all Duke-modeled Portfolios and SP-AGO

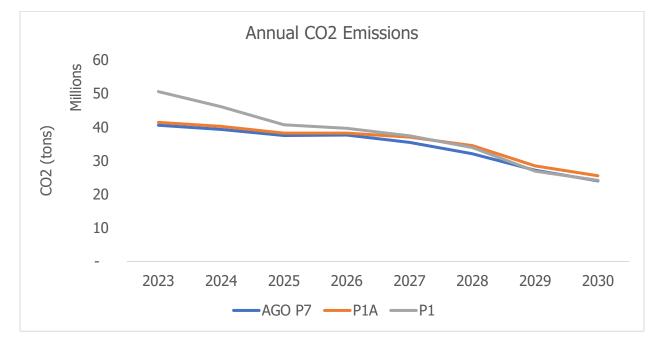
| Portfolio | Year in which 70% NC CO ₂ Reduction Achieved (2030 compliant portfolios in bold) | Present Value Revenue Requirement (PVRR) through 2050 (DEP/DEC Combine System) [\$B] | | | | | |
|------------------|---|--|--|--|--|--|--|
| P1 | 2030 | \$101 | | | | | |
| P2 | 2032 | \$99 | | | | | |
| P3 | 2034 | \$95 | | | | | |
| P4 | 2034 | \$96 | | | | | |
| P1 _A | 2030 | \$104 | | | | | |
| P2 _A | 2032 | \$101 | | | | | |
| P3 _A | 2034 | \$99 | | | | | |
| P4 _A | 2034 | \$99 | | | | | |
| SP5 | 2032 | \$102 | | | | | |
| SP6 | 2034 | \$98 | | | | | |
| SP5 _A | 2032 | \$98 | | | | | |
| SP6 _A | 2034 | \$95 | | | | | |
| SP-AGO | 2030 | \$100 | | | | | |

¹ Derived from Duke Energy Carbon Plan, Chapter 3, Table 3-3.

² Includes both standalone storage and pumped hydro.

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III. Emissions Performance Of All 2030-Compliant Portfolios



| IV. | SP-AGO, Cumulative Resource Additions by Year |
|-----|---|
| | |

| SP-AGO, Cummulative MW | | | | | | | | | | | |
|-----------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Additions | 2023-2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
| СТЈ | - | - | - | 462 | 462 | 462 | 462 | 462 | 462 | 462 | 462 |
| CT J H2 | - | - | - | - | - | - | - | - | - | - | - |
| 2x1 CCJ | - | - | - | - | - | - | - | - | - | - | - |
| 2x1 CCF | - | - | - | - | - | - | - | - | - | - | - |
| SMR | - | - | - | - | - | - | - | 285 | 285 | 570 | 855 |
| Advanced Reactor w/ Storage | - | - | - | - | - | - | - | - | - | - | - |
| Onshore Wind | - | - | 750 | 1,500 | 2,250 | 3,000 | 3,450 | 3,600 | 3,600 | 3,600 | 3,600 |
| Offshore Wind (2029) | - | - | - | - | 800 | 800 | 800 | 800 | 800 | 800 | 800 |
| Standalone Solar | 1,418 | 1,787 | 1,856 | 1,925 | 1,994 | 2,063 | 2,063 | 2,063 | 2,063 | 2,063 | 2,063 |
| S+S 25% Battery Ratio, 4hrs | - | 675 | 1,950 | 2,400 | 2,400 | 2,400 | 3,375 | 3,825 | 4,050 | 4,425 | 5,400 |
| S+S 50% Battery Ratio, 2hrs | - | - | - | 600 | 600 | 600 | 600 | 600 | 750 | 750 | 750 |
| S+S 50% Battery Ratio, 4hrs | - | - | - | 750 | 2,550 | 3,525 | 3,825 | 3,825 | 3,825 | 4,125 | 4,650 |
| 4-hr Battery | 297 | 297 | 297 | 947 | 947 | 947 | 997 | 997 | 997 | 1,097 | 1,097 |
| 6-hr Battery | - | - | - | - | - | - | - | - | - | - | - |
| 8-hr Battery | - | - | - | - | - | - | - | - | - | - | - |
| Bad Creek II | - | - | - | - | - | - | - | 1,680 | 1,680 | 1,680 | 1,680 |