# BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

# DOCKET NO. E-2, SUB 1089

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| **In the Matter of:** | **)** | |
| **Application of Duke Energy** | **)** | |
| **Progress, LLC for a Certificate of** | **)** | **ADDITIONAL COMMENTS** |
| **Public Convenience and Necessity to** | **)** | **OF BRAD ROUSE** |
| **Construct a 752 Megawatt Natural** | **)** | |
| **Gas-Fueled Electric Generation** | **)** | |
| **Facility in Buncombe County Near** | **)** | |
| **the City of Asheville** | **)** | |

## Brad Rouse's Additional Comments

Having intervened in this proceeding, and having made a statement at the Utility Commission meeting on February 22, 2016, I am submitting these additional comments so that they may be considered by the North Carolina Utilities Commission (Commission) as it reviews the Application for Certificate of Public Convenience and Necessity and Motion for Partial Waiver of Commission Rule R8-61("Application") filed by Duke Energy Progress, LLC (DEP) on January 15, 2016.

I would like to respond to one of comments made by the attorney for Duke Energy Progress(DEP), Mr. Bo Somers, in the hearing on Monday, February 22, 2016:

In my comments Monday and my written comments earlier filed with the Commission, I have encouraged the Commission to guide DEP to choose the minimum plant size possible to meet the needs for reliability in WNC. My position has been that these are tumultuous times facing the industry. The rapid cost reductions for renewable energy, combined with the growing global realization that we must move to a fossil fuel free future, create great potential risks for new investments in fossil fuel capacity. There is a very strong chance that fossil fuel capacity will become highly uneconomic. Such a situation argues for accepting only the minimum amount of new fossil capacity necessary to maintain reliability while these new options are developed.

In particular I argued that a smaller natural gas fired combined cycle (CC) unit size of 185 MW or so at the Asheville plant would be preferable because this smaller size would not increase the size of the largest plant in the WNC balancing area, and therefore would not be detrimental to the NERC calculation of available transmission. Put another way, the 280 MW unit size adds nothing to NERC reliability versus the 185 MW size.

Mr. Richard Hahn in his affidavit filed on behalf of intervenors Mountain True/Sierra Club came to the same conclusion. As he stated in his testimony

> "Using DEP's own reliability model and assumptions, reliability in DEP-W can be maintained with two 185 MW units in 2020 in place of the proposed two 280 MW units in 2020."

Mr. Somers made a counter argument against these assertions in his statement before the Commission on February 22. Although I do not have his exact wording, Mr. Somers asserted that the 185 MW size was not feasible for combined cycle units and he stated DEP's belief that Mr. Hahn and I must be referring to CT units. He then went into a discussion of why CT units would not be appropriate as replacement for the coal units in Asheville because they are designed for peaking usage only in the 5-10% capacity factor range.

Mr. Somers' assertion is critical to the Commission's assessment of whether or not Duke is overbuilding in their application. As both Mr. Hahn and I have shown in our comments, the larger unit size (280 MW versus smaller 185 MW) is not helpful in meeting NERC reliability standards. Based on the objective of meeting NERC reliability standards, if considered in isolation, building the larger unit size constitutes overbuilding.

If Mr. Somers assertion that 280 MW is the smallest feasible size for a CC were true, however, then there would be no overbuilding since DEP would be building the smallest feasible size CC. Mr. Hahn and my recommendation could be discarded since DEP was already building the smallest feasible unit. Since DEP asserts that a CC (versus a CT) is needed to serve base load, then it would follow logically that a 280 MW CC is what DEP should build. This conclusion would be the implicit consequence of Mr. Somers assertion, and seems to be the centerpiece of DEP's argument against Mr. Hahn's and my proposal for a smaller unit size.

**But Mr. Somers' assertion that there is not a feasible option for a smaller CC in the 185 MW range is not correct.**

I ask the Commission to consider the following:

On January 29, 2013 Chugach Electric Association in Alaska brought the South Central Power Project into service after 22 months of construction.[1] This power plant is described on Chugach web site as having four units consisting of three 47.6 MW combustion turbines and one 57.4 MW steam unit for a total capacity of 200.2 MW.

According to an article in Power Engineering entitled "A Report on Combined Cycle Projects in North America", the 3 CT components were provided by General Electric and the steam unit was provided by Mitsubishi Power Systems.[2] The capacity of the Chugach plant is listed in the article as 183 MW.

**The successful completion of this project directly contradicts DEP's assertion.**

I would also call to the Commissions attention to a publication of GE POWER SYSTEMS entitled "GE Combined-Cycle Product Line and Performance"[3] On page 8 of this publication, GE states:

[1] Chugach Electric Association 2013 Annual Report
http://www.chugachelectric.com/system/files/annual_reports/2013_annual_report_for_web.pdf.

[2] Power Engineering, "A Report on Combined Cycle Projects in North America", February 3, 2014
http://www.power-eng.com/articles/2014/02/a-report-on-combined-cycle-projects-in-north-america.html
"

[3] "GE Combined-Cycle Product Line and Performance", GE POWER SYSTEMS, D.L. Chase and P.T. Kehoe, Schenectady, NY

> "A wide array of options is available for the STAG (CC) power generation product line to suit specific economic criteria as well as the operating and installation preferences of the owner."

In particular, the GE S109 CC plant option listed in Table 7 shows a combined rating of 189.2 MW with a heat rate of 6570. Updated versions of this information from GE POWER SYSTEMS web site also show a wide variety of CC unit sizes available from GE. [4]

**The availability of an off the shelf 189.2 MW CC from GE directly contradicts DEP's assertion.**

Before concluding, I would respectfully ask the commission to consider another argument. Let's assume that DEP is ultimately correct and a full base load requirement of 560 MW or so is needed for the region. If that ended up being the case, Duke could still apply for and construct a third CC unit in the 185 MW range, bringing up total CC capacity in WNC to the 560 range at a later time. Perhaps the remaining CC capacity could be built after the contingent CT, or instead of it, as conditions dictate. Building a smaller unit now means less risk but it does not preclude larger capacity being added later if the risks do not materialize and the need becomes apparent.

**Conclusion:**

**Mr. Somers asserted in his remarks to the Commission that DEP cannot "go back to the drawing board". But in a limited amount of time (a few hours) since the meeting Monday I have been able to find two sources which directly contradict DEP's assertion that a smaller CC size is not feasible. Note that a utility in Alaska was able to complete their CC unit in only 22 months. Based on the 22- month time frame, there would seem to be enough time between now and 2020 to get this right.**

**I ask the commission to approve a smaller capacity CC for now based on the information that Mr. Hahn and I have presented. The Commission can then provide DEP the option to come back with additional, credible, evidence as to why it is more beneficial to go with the larger unit size in spite of the information provided herein. The Commission can then approve or deny the request for a larger unit based on the evidence so submitted at that time.**

Respectfully submitted,

http://physics.oregonstate.edu/~hetheriw/energy/topics/doc/elec/natgas/cc/combined%20cycle%20product%20line%20and%20performance%20GER3574g.pdf

[4] GE POWER SYSTEMS web site, https://powergen.gepower.com/resources/tools/product-comparison.html

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**CERTIFICATE OF SERVICE**

I certify that a copy of the foregoing Comments of Brad Rouse as filed today in Docket No. E-2, Sub 1089 has been served on all parties of record by electronic mail or by deposit in the U.S. Mail, first-class, postage prepaid.
This 23rd day of February, 2016.

s/ Brad Rouse