

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. EMP-92, SUB 0

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)
Application of NTE Carolinas II, LLC, for) NC WARN'S BRIEF
a Certificate of Public Convenience and)
Necessity to Construct a 500-MW Natural)
Gas-Fueled Merchant Power Plant in)
Rockingham County, North Carolina)

NOW COMES the NC Waste Awareness and Reduction Network, Inc. ("NC WARN"), by and through the undersigned attorney, with its brief on the application by NTE Carolinas II, LLC ("NTE") for a certificate of public convenience and necessity ("certificate") for its proposed Reidsville merchant plant. As part of this brief, NC WARN adopts by reference the pre-filed Testimony of Mr. Powers admitted into the record and his responses on cross-examination at the evidentiary hearing.

The position of NC WARN is that the Commission should DENY the application for the certificate *sub judice* for the following reasons:

I. NTE has not demonstrated the need for an additional 500 MW of new natural gas-fired generation in the Reidsville area.

II. The present ratepayers of Duke Energy Carolinas ("DEC") will gain no benefit from the proposed plant and will in all likelihood be forced to pay for more unneeded generation for backup power.

III. NTE's natural gas plant will contribute to climate change from methane leakage and venting throughout the natural gas production and distribution cycle at a greater rate than DEC's.

OVERVIEW

As noted in the application, NTE's 500 MW natural gas-fired plant, the Reidsville Energy Center, is proposed to be sited near Reidsville, North Carolina. The NTE website, and as confirmed by NTE Witness Mr. Green, states the project will require more than \$500 million investment.¹ Tr. 33.² This is a "merchant plant" as defined in Commission Rule R8-63(a)(2), and "the output of which will be sold exclusively at wholesale" and the costs of construction cannot be added to the rate base of a public utility. NTE is also constructing a similar plant in Kings Mountain. See Docket EMP-70, Sub 0.

At the evidentiary hearing, NTE witness Mr. Green, stated that the company intends to sell the output from the plant to four or five municipalities and cooperatives in North and South Carolina. At this time NTE does not have any firm contracts, but is in negotiations with prospective customers. Mr. Green stated "it's kind of a two-legged schedule, you've got to show the customers that the plant is viable, is getting the permits it needs to be built." Tr. 36. The prospective customers are present wholesale ratepayers of DEC or Duke Energy

¹ <http://reidsvilleenergy.com/#project-overview>

² Unless as otherwise noted, transcript citations are for the evidentiary hearing in Raleigh.

Progress (“DEP”), although this cannot be fully determined until the contracts are finalized. At the Kings Mountain plant, NTE has long-term Power Purchase Agreements with Kings Mountain, Concord, Black Creek, Lucama, Sharpsburg, Stantonsburg, New River Power & Light, and others in North and South Carolina. Tr. 33-35; NC WARN Green Cross Exh. 1. NTE expects the proposed Reidsville plant to sell to similar wholesale municipal and cooperative customers.

The proposed Reidsville plant is adjacent to the existing five natural-gas fired combustion turbine plants, the Rockingham County CT Station, operated by DEC. Tr. 39-41. These plants have a total capacity of 825 MW, but are peaking units and are only operated when needed. The existing peaking units were built by Dynegy, Inc., as merchant plants and then subsequently sold to DEC in 2006.

At the public hearing, several witnesses testified about the number of families living in close proximity to the proposed plant and expressed concerns about the noise and lights, aesthetics, and diminution of the quality of life. In all likelihood, the proposed plant would add to those nuisance factors from the existing DEC natural gas plants in the community, especially since the proposed plant would be a baseload unit, continuously in operation. In short, the residents near the proposed plant are deeply concerned about another heavy industrial facility in a rural, residential neighborhood.

A major concern expressed by the public witnesses was the water requirements for the plant and NTE’s vagueness on what the proposed plant will require. The proposed plant will withdraw cooling water from the Dan River. Water intake and discharge are planned at a county-operated environmental park

on Planters Road. Tr. 29-30 (public hearing). At least one public witness described a presentation made by NTE to the Rockingham County Board of Commissioners for a requirement of 5 million gallons per day (“MGD”). At the evidentiary hearing, NTE witness Mr. Green testified the proposed withdrawal rate will average 1.5 MGD but could reach high of 3.5 MGD on days that are high in heat and humidity. Tr. 29. Mr. Green characterized the higher number as the “maximum upset condition.” High usage days would therefore overlap with days during which the water level would be low, i.e., summer months. A related concern is about water quality degradation from the chlorine added to the cooling water; this is then discharged into the Dan River, causing significant problems at low flow conditions. Tr. 30 (public hearing).

ARGUMENT

I. NTE has not demonstrated the need for an additional 500 MW of new natural gas-fired generation in the Reidsville area.

The CPCN statute, G.S. 62-110.1, and related Commission rule, R8-63 for merchant plants, are intended to provide for the orderly expansion of electric generating capacity in order to create a reliable and economical power supply and to avoid the costly overbuilding of generation resources. *State ex rel. Utilities Comm. v. Empire Power Co.*, 112 N.C.App. 265, 278 (1993), disc, rev, denied, 335 NC 564 (1994); *State ex rel. Utilities Comm. v. High Rock Lake Ass’n*, 37 N.C.App. 138, 141, disc, rev, denied, 295 NC 646 (1978). In this case, the present proposal is clearly overbuilding a redundant and unneeded plant that will be unreasonably costly to ratepayers.

G.S. 62-110.1(e) provides the first part of the analysis the Commission is required to undertake in reviewing an application for a certificate, i.e., the plant benefits the ratepayers, the plant does not burden current ratepayers, the estimated costs are reasonable, and the plant is consistent with Commission's plan for expansion of generating capacity.

As a condition for receiving a certificate, the applicant shall file an estimate of construction costs in such detail as the Commission may require. The Commission shall hold a public hearing on each application and no certificate shall be granted unless the Commission has approved the estimated construction costs and made a finding that construction will be consistent with the Commission's plan for expansion of electric generating capacity.

* * * *

In making its determination, the Commission shall consider resource and fuel diversity and reasonably anticipated future operating costs.

G.S. 62-110.1(e). Commission Rule R8-63 prescribes the contents of the application, and the relevant provision for the present docket, it shall include a statement of need, i.e., "a description of the need for the facility in the state and/or region, with supporting documentation." Rule R8-63(b)(1)(C).

In its review of an application for a certificate, the Commission is required to consider a wide variety of factors, including environmental as well as economic factors. Setting a firm precedence for issues to be resolved in a certificate for a power plant, the most heavily contested certificate before the Commission in the recent decade was for Duke Energy's Cliffside coal plants (now the "Rogers Energy Complex"). Docket E-7, Sub 790. In the Order issued by the Commission on March 21, 2007, the Commission stated in Findings of Fact 3

The Commission must consider many factors, including the recent and future needs for power in the area; the extent, size, mix, and

location of the utility's existing plants; arrangements for pooling or purchasing power; and the construction and fuel costs of the project and of alternatives, before granting a certificate of public convenience and necessity for a new generating facility.

This broad and comprehensive review of a CPCN application includes alternatives to the proposed plant, the costs to ratepayers, and the size, mix, and location of existing plants, as well as whether it is in the public interest to build the plant. In the Cliffside order, the Commission further stated,

Beyond need, the Commission must also determine if the public convenience and necessity are best served by the generation option being proposed. The standard of public convenience and necessity is relative or elastic, rather than abstract or absolute, and the facts of each case must be considered. *State ex rel. Utilities Comm. v. Casey*, 245 NC 297, 302 (1957).

In the present matter, NTE needs to justify its plant in terms of whether the plant best serves the public convenience and necessity.

In its application and testimony, NTE uses indicators to show future need for the plant that simply are not substantive or even relevant, and ignored other factors that should have part of the review. Without full and complete information, the Commission is unable to determine “that construction will be consistent with the Commission's plan for expansion of electric generating capacity.” See G.S. 62-110.1(e) above. By and large, NTE relied almost wholly on outdated DEC and DEP integrated resource plans (“IRPs”) to show future need for a natural gas plant in North Carolina.³ NTE offers little independent analysis of the IRP

³ At the hearing, NTE used the 2014 IRPs, filed September 1, 2014, although the 2015 up-dates for the IRPs had already been approved by the Commission. See Docket E-100, Sub 141. Moreover, DEC and DEP filed their 2016 IRPs on September 1, 2016. See Docket E-100, Sub 147.

forecasts in the plans, and at the same time, fails to recognize that the future need forecast in the IRPs are based on peak demand. It is simply illogical to demonstrate the need for building a baseload plant based on peak needs.

In its plans for building the proposed plant, NTE did not look at historic energy sales growth rates, only at what was projected for the future in the IRPs. Historic trends and the fact that energy consumption has gone flat over the past decade should have been given at least some consideration of the plant's need. Instead, NTE witness Mr. Green testified "I tend to look at what the - what is needed going forward, and my plants that I'm developing are going to serve needs in the future, not the needs in the past." Tr. 55.

NC WARN witness Mr. Powers summarized his analysis of the IRPs by stating, "[t]here is no evidence of actual growth in peak demand or annual electricity usage in Duke Energy Carolinas (DEC) service territory, Duke Energy Progress (DEP) service territory, or North Carolina or South Carolina in the last decade." He testified about the historic electricity consumption and provided a table showing the flat growth in demand. Powers Prefiled Testimony, p. 5. The only significant increase was due to a heavy winter peak load in the Asheville area. Mr. Powers testified "[h]owever, it is important to underscore that here is no reason to build any baseload capacity to meet once-in-a-generation polar vortex conditions that cause higher than expected winter peak loads." Powers Prefiled Testimony p. 8. Based on his analysis of the past decade, Mr. Powers concluded,

"[t]he only area of electricity sales growth for DEC and DEP has been wholesale power sales. However, given there has been no

overall increase in electricity consumption in North Carolina or South Carolina over the last decade, the wholesale load growth experienced by DEC and DEP is either load shifting within the Carolinas, meaning there is a concomitant decrease in the output of other existing generators in the Carolinas, or DEC and DEP are selling into external wholesale markets unrelated to electricity demand in the Carolinas.

It is this existing wholesale market NTE expects to enter into, adding additional generation to take on existing customers.

NTE purported to show the need for the plant, but failed. It did not look at presence of other merchant facilities in the Carolinas and Virginia. G.S. 62-110.1(d) provides the second part of the analysis for a certificate;

(d) In acting upon any petition for the construction of any facility for the generation of electricity, the Commission shall take into account the applicant's arrangements with other electric utilities for interchange of power, pooling of plant, purchase of power and other methods for providing reliable, efficient, and economical electric service.

Mr. Green testified that even if NTE had looked at other alternatives, it would not be reasonable to wheel power from other facilities in other states to customers in North Carolina. Tr. 53. There was no substantive evidence behind this bald statement, just Mr. Green's surmise on the witness stand. But since NTE does not know who its customers are yet and where the customers will be located, how can NTE prove receiving power from other facilities instead of building a new plant is unreasonable?

Mr. Powers on the other hand presented a number of capacity alternatives that were both available and economical; in his testimony he presented descriptions of the available capacity of TVA hydro resources, the Tenaska combined cycle plant in Virginia, and the Columbia Energy combined cycle plant

in South Carolina as examples of regional available capacity. Powers Prefiled Testimony, pp. 6-7.

NTE did little to support its claim the plant was needed beyond its reliance on the IRPs. It introduced projected North Carolina population increases in coming years to demonstrate the need for its specific plant. Tr. 63; NTE Green Redirect Exhibit 1. As noted by Mr. Powers, reliance on future populations growth in North Carolina ignores the fact electricity usage has remained stagnant despite population increases in recent years. Powers Prefiled Testimony, p. 5. The use of population increase is simply not a solid measure of future load growth by retail customers.

Highly relevant to the present certificate case is DEC's application in 2008 for a certificate to add a baseload 677 MW natural gas plant at the Rockingham County CT Station. Just two years later in 2010, DEC determined an additional baseload plant was not needed in the Reidsville area and summarily withdrew its application. Docket E-7, Sub 861. NTE witness Mr. Green stated he was unaware of this. Tr. 41. Neither NTE nor Public Staff witnesses addressed DEC's decision not to construct more baseload in the Reidsville area, although DEC's analysis would have been informative.

Even if the Commission finds the future need expressed in the IRPs is a reasonable forecast of future growth in North Carolina, there are no showings in the record that building another 500 MW of generating capacity is necessary in the Reidsville area or will replace any future natural gas plant planned by DEC or DEP. As an element of proof in showing the need for the plant, NTE should at

least show how its proposed plant fits into the IRPs and whether a specific DEC or DEP plant will not be built if the NTE plant is built.

II. The present ratepayers of DEC will gain no benefit from the proposed plant and will in all likelihood be forced to pay for more unneeded generation for backup power.

As noted in the previous section, the purpose of the certificate statute is to determine whether the proposed plant is in the public interest and whether there are benefits to ratepayers. The project's purpose is to sell power to current DEC (and possibly DEP) wholesale customers at a lower cost than they can get from DEC. If that was the entire story, NC WARN would support the proposal; competition in the electricity market should drive down rates for ratepayers.

However, the NTE customers (at this point unknown) may in fact pay less on their bills than they would otherwise, but as noted above, there has been no showing by NTE that other DEC customers would not see any difference. One of the key questions at the evidentiary hearing was Commissioner Patterson to Public Staff witness Mr. Metz, "Q. Whatever happens in terms of the business of this plant being proposed, it has no impact on the ratepayers of North Carolina, does it? A. That is correct. It has no impact on the ratepayers." Tr. 177-178. However, Mr. Metz did not provide the evidentiary basis for his conclusory statement or any detail why he thought ratepayers would not have to pay for additional generation to back up the NTE plant during normal maintenance outages or emergency outages.

The Commission's obligation under the Public Utilities Act is to ensure that a regulated public utility has sufficient generating resources to provide reliable

and adequate service to its captive retail ratepayers. *State ex. Rel. Utils. Comm'n v. Carolina Power & Light Co.*, 359 N.C. 516 (2005). While this does not require 100% backup for every merchant plant at all times, it does require more from the utility than passing all of its native load responsibilities to another party.⁴

The prospective NTE customers are likely to be municipalities and cooperatives in the DEC or DEP service areas. These wholesale customers are presently considered native load customers and DEC will still have an obligation to provide priority service to them when NTE is not able to. To the extent that this means DEC will still have to construct new plants to serve as backup to customers buying from NTE, the plant would not prevent the addition of new generation by DEC. NTE did not even attempt to present evidence on what DEC's position is on providing backup service for the NTE customers.

As noted above, NTE has based its statement of need almost wholly on the DEC and DEP IRPs. But in its IRP, DEC has planned no new plants coming on line by late 2020 that are not already underway that this plant can "replace." DEC IRP, p. 40. In addition, when the NTE plant is projected to come on line in late 2020, DEC's reserve margin will be 19%. DEP's planning is similar, no new plants can be postponed or replaced over that time line. DEP IRP, p. 41. DEP's reserve margin will also be 19%.

NTE witness Mr. Green testified "[w]e're anticipating probably 60 to 70 percent capacity factor on day one to allow growth for our prospective wholesale

⁴ The responsibility for backup for a merchant plant can easily be contrasted with the minimal back up required for distributed and renewable sources. Even if a number of the solar panels, as an example, are not working, the total remaining in action at any one time provide adequate service.

customers to grow into it in the anticipated 20-year contract term.” As such, NTE has not shown it can replace any DEC or DEP plant, and certainly not any particular plant. Even if the Reidsville plant is operated efficiently, with a high annual capacity factor in the 80–85% range, NTE will still need additional backup power from the utilities to meet its contractual commitments to its potential customers. When there are major outages at the proposed Reidsville plant, does NTE expect the utilities – DEC and DEP -- to provide whatever power is needed?

When wholesale customers are removed from the utility’s customer base, it leaves fewer customers to fulfill DEC's revenue requirements, especially for paying off old plants and paying for new plants. And, as mentioned above, that redundant generation in DEC (and DEP) territory will be divided among fewer customers. Contrary to Mr. Metz’s conclusory response to Commissioner Patterson, it is highly likely that wholesale customers moving to merchant plants will have a negative impact on DEC retail customers.

III. NTE’s natural gas plant will contribute to climate change from methane leakage and venting throughout the natural gas production and distribution cycle at a greater rate than DEC’s.

In its application and testimony, it is clear NTE only considers onsite methane and other air emissions, and then only as part of an air quality permit. NTE witness Mr. Green states: “[i]n our air permit application we have identified the methane emitted from the gas yard owned by Transco and our plant, that 600 feet of pipe, and that is a part of the Air Quality Permit.” Tr. 60. This is just a small regulated portion of the total environmental and climate impact of the

proposed plant. It does not begin to address the lifecycle emissions critical to the Commission's understanding of the full negative impact of the plant.

In previous proceedings before the Commission, NC WARN has provided affidavits and comments on the climate impacts from natural gas plants. Recent studies, and findings from agencies as the Intergovernmental Panel on Climate Change, demonstrate conclusively that methane venting and leakage is one of the principal drivers of climate change. The reliance on natural gas power plants, with methane leaked and venting into the atmosphere from wellhead to burn point, are the principal sources of methane emissions.

In its application as the basis for the need for the proposed plant, NTE relies upon the DEC and DEP IRPs but fails to recognize the utilities reached their conclusions for future generation needs based in large part on carbon impacts on climate change. Although NC WARN disagrees with the outcome of Duke Energy's IRPs because of the total methane emissions resulting from the proposed expansion of natural gas infrastructure, NTE cannot rely on Duke Energy's IRPs without addressing the climate impacts of its proposed plant. In its application, NTE appears to ask the Commission to ignore the climate impacts of its proposed plant when assessing whether the plant is in the public interest.

In this proceeding, Mr. Powers, an expert in utility planning of power plants and pipelines, testified about the methane emissions from the proposed plant.

[n]atural gas-fired power generation has a substantially greater greenhouse gas (GHG) emission footprint than previously understood. The carbon dioxide (CO₂) component of the GHG footprint of a combined cycle plant operating at design efficiency would be approximately 820 pounds per megawatt-hour (lb/MWh).⁵ In

⁵ Powers Prefiled Testimony, Attachment A.

contrast, the 2015 CO₂ footprint of grid power provided by DEC was 669 lb/MWh, about 20 percent less than the CO₂ footprint of the proposed combined cycle plant.

Powers Prefiled Testimony, p. 9. As documented by Mr. Powers, the climate impacts from all natural gas plants, and this one specifically, are substantial. With renewable energy sources and batteries, and other available and economically viable alternatives, the average methane impacts should diminish.

Equally important is that even using different models based on a wide variety of methane leakage rates, DEC's systemwide average methane impacts are lower than the proposed plant. As demonstrated by Mr. Power, this holds true regardless of the assumption of leakage rates, ranging from the 1.8% emissions rate per the U.S. Environmental Protection Agency estimates of the national average as of 2009; 4.2% emissions rate per average in the 2014 study by Dr. Howarth of Cornell University, or the 12% emissions rate per likely emissions from shale gas production in the 2015 study, again by Dr. Howarth.

Without question, natural gas plants contribute to the climate crisis. In its application and testimony, NTE is willing to consider upstream economic costs, such as wheeling power from out of state, in order to dismiss prospects of other alternatives to meet need. At the same time, it should be required to analyze upstream environmental and climate impacts. Without this information, the Commission is unable to determine whether the proposed Reidsville power plant is in the public interest.

CONCLUSION

Given the fatal flaws in NTE's application, the Commission should DENY the application for the certificate. NTE has failed to meet its burden in this docket. It has made no showing for the need for the proposed plant beyond tying it to the DEC and DEP 2014 IRPs. There was no analysis by NTE or the Public Staff on the impacts on current ratepayers from redundant generation, and no benefits have been shown to existing ratepayers. The environmental and climate impacts of the proposed plant are significant, and will be an additional burden borne by the people and businesses in North Carolina. All in all, the certificate for the proposed Reidsville plant is not in the public convenience and is not necessary.

Respectfully submitted, this the 22nd day of December 2016.

/s/ John D. Runkle

John D. Runkle
Attorney at Law
2121 Damascus Church Rd.
Chapel Hill, N.C. 27516
919-942-0600
jrunkle@pricecreek.com

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing NC WARN'S BRIEF upon each of the parties of record in this proceeding or their attorneys of record by deposit in the U.S. Mail, postage prepaid, or by email transmission.

This is the 22nd day of December 2016.

/s/ John D. Runkle
