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SEP 06 2013
Clerk's Office
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September 6, 2013

Gail L. Mount
Chief Clerk
NC Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

Re: Docket No. E-100, Sub 137

Dear Ms. Mount:

Please find for filing the original and 30 copies of the BRIEF OF NC WARN, BREDL AND GREENPEACE. We are also filing a copy in electronic format to briefs@ncuc.net.

Thank you for your attention to this matter.



John D. Runkle
Counsel for Intervenors

cc. Service List – via email

Full Dist.

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

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DOCKET NO. E-100, SUB 137

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)
Investigation of the Integrated Resource) BRIEF OF NC WARN,
Plan in North Carolina for 2012) BREDL AND GREENPEACE

NOW COME the Intervenors, N.C. Waste Awareness and Reduction Network ("NC WARN"), the Blue Ridge Environmental Defense League ("BREDL") and Greenpeace, Inc., through the undersigned attorney, with their brief on the integrated resources plans ("IRPs") filed by Duke Energy Carolinas ("DEC") and Duke Energy Progress ("DEP") in this docket.

This brief adopts by reference the Initial Comments by NC WARN, BREDL and Greenpeace filed in this docket on February 4, 2013, and the three reports attached to those comments.¹ In addition, the positions of NC WARN, BREDL and Greenpeace were strongly supported by extensive testimony from numerous public witnesses at the public hearings in Charlotte and Raleigh.

The IRPs filed by DEP and DEC in this docket should not be accepted by the Commission for the following reasons:

1. The projected growth in demand in the IRPs cannot be unjustified.

¹ NC WARN, "A Responsible Energy Future for North Carolina, Crucial Years: 2013-2032," January 2013 (available on line at www.ncwarn.org/reports). Greenpeace, "Charting the Correction Course: A Clean Energy Pathway for Duke Energy," Summer 2012 (available on line at <http://quitcoal.org/Duke-Solutions-Pathway>). NC WARN, "Combined Heat and Power in North Carolina: Replacing Large Power Plants by Putting Wasted Energy to Work," February 2013 (available on line at www.ncwarn.org/reports).

2. The utilities' plans lead to costly overbuilding.
3. The utilities' plans do not address global climate change.

ARGUMENT

The Commission's role in addressing the costs and benefits of generation and demand reduction measures is carefully laid out in the Public Utilities Act. G.S.62-110.1(c) requires the Commission to keep current an analysis of the long-range needs for expansion of facilities for the generation of electricity in North Carolina. The purpose of this analysis is to carry out the general public policy of the State as declared in G.S. 62-2(a)(3), i.e., "to promote adequate, reliable and economical utility service to all of the citizens and residents of the State." In the context of the investigation of the IRPs, G.S. 62-2(3a) states that the policy of the State is to find the "**least cost mix** of generation and demand-reduction measures which is achievable, including consideration of appropriate rewards to utilities for efficiency and conservation which decrease utility bills." (emphasis added). G.S. 62-2(a)(4) continues this theme and states that rates set by the Commission should be "consistent with long term management and conservation of energy resources by avoiding wasteful, uneconomic and inefficient uses of energy." The goal then of the IRP process is to both determine the least cost mix of generation, efficiency and renewable energy sources and at the same time avoid wasteful, uneconomic and inefficient uses of energy.

While it is evident the Commission has determined that the annual review of IRPs is a tool for carrying out the State policies, the IRP process itself carries less and less weight in determining the "least cost mix." In the past several years, the Commission has routinely concluded that each of the annual IRPs filed by DEC and DEP (formerly Progress Energy) have met both the statutory intent of

G.S. 62-110.1(c) as well as the reporting requirements of NCUC Rule 8-60. See Orders in Dockets E-100, Sub 124, 128 and 131. However, a detailed analysis of the costs of the various alternatives and scenarios would lead to a far different conclusion than the IRPs presented by the utilities, especially when comparing the costs of nuclear and other baseload plants to any of the other alternatives. Moreover, when comparing the utilities' estimated growth of demand in their recent IRPs with actual growth, it is apparent that overestimations of growth are the primary impetus for unnecessary new baseload units.

Relevant to the IRPs again this year, case law points out that the purpose of the IRP statute, G.S. 62-110.1, is to prevent **costly overbuilding**. *State ex. rel Utils. Comm'n v. High Rock Lake Ass'n*, 37 NC App. 138, 245 S.E.2d 787, cert. denied, 295 N.C. 646, 248 S.E.2d 257 (1978). That case states in part

the primary mandate of G.S. 62-110.1 to the Commission, which is to regulate the expansion policy of electric utility plants in North Carolina to provide for the public need for electricity without wasteful duplication or overexpansion of generating facilities.

As regulated monopolies, and even more so as a single merged company, DEC and DEP do not face competitive pressures to reduce the costs associated with the construction of new generating facilities, so it up to the Commission to carry out this directive.

In its Order Denying Request for Evidentiary Hearing and Allowing Proposed Orders and Briefs, p. 4, the Commission succinctly summarized the utilities' position in the IRP:

According to DEC and DEP, the NC WARN *et al.* attachments may be interesting exercises if North Carolina wants to attempt to maximize EE, DSM and renewable resources, while eliminating baseload nuclear, coal and natural gas generation, without regard to cost, reliability or availability.

In short, as the Commission noted, the utilities consider the proposed plans to be

unreasonable and believe they should be ignored. Not surprisingly, NC WARN, BREDL and Greenpeace strongly disagree and continue to maintain that not only State policy mandates the Commission to consider their proposed plans, it is further clear that a balanced mix of renewable energy and energy efficiency are the only reliable, cost effective and readily available energy resources over the IRP planning period.

In the present docket, NC WARN, BREDL and Greenpeace urge the Commission to reexamine its previous orders as they relate to the acceptance of IRPs in general and in particular, to consider of the impact of the excessive, and costly baseload generation. The utilities' IRPs are fundamentally flawed because they reach the conclusion that more baseload generation is necessary without a full discussion of the costs and risks associated with the proposed baseload generating units. The Commission is therefore unable to assess whether the new generation units proposed in the IRPs make sense, in terms of basic economics and impact on ratepayers. DEC and DEP have significantly overestimated the need for baseload power plants over the IRP planning horizon, and as a result, continue to include expensive new baseload units rather than depend on renewable energy ("RE") and demand-side management ("DSM") projects and energy efficiency ("EE") to meet future load demand.

PROPOSED FINDINGS

Proposed Finding 1. The projected growth in demand in the DEC and DEP plans is not supported by competent evidence and is unreasonable in light of actual demand.

The flaw in the DEC and DEP planning is the short-sighted objective of meeting forecasted new growth by continuing to build polluting fossil fuel plants and/or extremely costly nuclear plants. It remains clear that adding these plants

to rate base, which would increase return on equity and utility profits, is the basic economic driver for the utilities. The result of this business plan is that rates will rise repeatedly throughout the planning period. A substantial portion of these cost escalations and the timing of their impacts on ratepayers depends on plans to construct the costly nuclear power plants, and subsequent recovery by the utilities, but if all of the construction is conducted as proposed, rates could double. NC WARN, BREDL and Greenpeace contend that both utilities have significantly overestimated the need for power plants over the IRP planning horizon, and as a result, continue to include expensive new nuclear plants, rely considerably on new natural gas plants, and retain existing large coal plants in their plans.

In its IRP, DEC projects it will need to add 6365 MW of new generation during its 20-year planning period, while DEP projects 4722 MW during its 15-year planning period. Despite more than a decade of very little growth in demand, and expectations in the utility industry for slow demand for many years to come, DEC projects an unsupported, and incredible, growth rate of 1.4% annually. This is directly contrary to all historic data; in its IRP, DEC states its "retail sales have grown at an average annual compound rate of 0.5% from 1996 to 2010, non-weather adjusted" and in the past five years, the total retail load growth has only been 0.1%. DEC IRP, p. 21 and Table 3.1. It should further be noted for the first time, DEC actually shows a decrease of 1.9% in sales in its most recent application for a rate hike. Docket E-7, Sub 1026, Application, Appendix D (ATTACHED). As a result of DEC's overly ambitious growth predictions, DEC projects an increase of 30% in electricity sales over the 2013-2032 period from 92,210 gigawatt hours ("GWh") in sales to 133,453 GWh in its North and South Carolina markets. Similarly DEP projects a growth rate in demand of 1.6% annually, and then, unlike DEC, lowers its forecast to 1.2%

annually to accommodate its required EE/DSM programs. DEP's projections are somewhat lower, with a forecasted increase of 15% over the 2013-2027 period, and sales rising from 66,066 GWh to 76,025 GWh.

In their projections, DEC and DEP rely on minimal amounts of energy efficiency, and solar, wind and other renewable sources, and apparently only what is required of them through 2021 under the Renewable Energy and Energy Efficiency Portfolio Standard ("REPS") pursuant to Session Law 2007-397 (Senate Bill 3). This is especially disconcerting given the "Duke-Progress merger commitment regarding energy efficiency requires that Duke make a good faith effort to achieve a cumulative savings target of 7% of retail electricity sales over the five-year time period of 2014-2018." DEC IRP, p. 38. Although DEC includes the aspirational goals from the merger commitment, it does so as the "high case" scenario in Table 4.B, but then uses the REPS "base rate" in Table 4.A for planning purposes. DEC IRP, pp.39-40.

The utilities' flat, if not declining, growth, and the measurable impacts of EE/DSM programs, should lead the Commission to deeply question the projected growth rates in the IRPs. The unrealistic growth forecasts lead to unwise and uneconomical decisions about new and costly overbuilding of new generation facilities.

Proposed Finding 2. The utility plans do not provide the least cost mix of generation and demand-reduction measures as they lead to costly overbuilding.

The reports attached to the initial comments of NC WARN, BREDL and Greenpeace provide specific information on the costs of construction and the benefits of robust energy efficiency, renewable energy and CHP measures.²

² As two additional bonuses, energy efficiency programs and renewable energy create many more jobs across the state than those created by the utilities if they follow their IRPs, and at the same time, help to dramatically reduce fossil-fuel pollution statewide.

Both the NC WARN and the Greenpeace reports present reasonable and responsible “least cost” energy plans as opposed the utilities’ IRPs. As the Commission pointed out in its Order, these reports “attempt to maximize EE, DSM and renewable resources, while eliminating baseload nuclear, coal and natural gas generation” but do so with a firm grasp of cost, reliability or availability. NC WARN’s alternative to the IRP demonstrates that the most significant economic costs to ratepayers come from the timing and escalating costs of nuclear plant construction, while the most significant environmental costs are from the continuing use of fossil fuels. The goals of shutting down existing coal plants and eliminating the need for new nuclear and natural gas plants can be met by increasing energy efficiency and conservation at customer locations at a rate of 1.5 to 2% annually, building solar and wind to 24% of total electricity sales, and developing substantial numbers of commercial, industrial and institutional combined-heat-and-power (“CHP”) facilities. DEC’s existing pumped storage facilities can offset the variability of renewables, and purchased power agreements in adjacent competitive markets are available to further reduce the need for new plants.

The Greenpeace report, “Charting the Correction Course: A Clean Energy Pathway for DEC,” provides an alternative to the IRPs based on leveraged modeling performed by the utility investment consultant Ventyx. Ventyx determined a revenue requirement of \$190 billion for IRPs versus \$82 billion for the Clean Energy Pathway.³ The 20-year time horizon of the Greenpeace report reveals the full impact of nuclear construction costs on rates in the latter 2020s.

³ Greenpeace’s estimated savings of up to \$108 billion revenue collection from Duke ratepayers assumed combined savings across Duke and Progress Carolinas operations through 2032. Approximately 72% of that savings, or \$78 billion, would accrue to North Carolina ratepayers.

DEC's rate collection under the IRP in 2032 alone, fueled by compounded annual growth rates, would be enough to fund Greenpeace's entire energy efficiency and renewable energy recommendations over the entire planning period. Aggressive deployment of solar and wind power, energy efficiency and more effective use of pumped storage drive these savings relative to the nuclear and natural gas-fired generation proposed in the IRPs. Adopting the Greenpeace plan instead of the DEC and DEP IRPs decreases overall costs with the most significant savings in construction costs and reduction of long-term debt; construction costs are reduced by 82%, long-term debt by 75%, and additional savings in operation & maintenance costs and fuel and power purchase costs.

In addition to the economic potential for energy efficiency and DSM, and renewable energy, CHP will play an increasingly larger role in North Carolina's energy future. As noted in the NC WARN report on CHP, the IRPs do not include energy savings, and the replacement of existing plant, with the well-developed and economic technologies used by industrial and large commercial customers to put to use large amounts of energy that are otherwise simply wasted. Studies estimate North Carolina can increase its CHP capacity from the present 1,530 MW to a potential as high as 10,000 MW, the equivalent of ten large coal plants, especially as smaller applications are realized.

Proposed Finding 3. The utilities' plans do not address the impacts of generation choices on global climate change.

Lastly, because both utilities rely heavily on natural gas as fuel, and with continued use of their existing large coal plants, the amount of carbon and other greenhouse gases needs to be assessed. Historically, the Commission has looked only at rates and service and has not recognized the externalized costs to health and climate change of generation decisions as within its purview. That

regulatory posture is increasingly untenable as the costs associated with climate change, and caused by the emissions of carbon and other greenhouse gases from fossil-fuel plants, are increasing. In seeking the "least cost" plan, the Commission should closely review the IRPs to reduce both the direct and externalized costs to North Carolina ratepayers. In this case, the utilities' generation plans result in serious health, climate disruption and other externalized costs borne by the public, while the NC WARN and Greenpeace plans minimize those risks.

The Greenpeace plan reduces carbon dioxide emissions by 29%, reduces sulfur dioxide emissions by 61% and reduces nitrogen dioxide emissions by 47%. As documented in the NC WARN report on the IRPs, just from the burning of natural gas and coal, DEC's plan for 2032 results in annual carbon dioxide emissions of approximately 81 billion pounds (with the new Cliffside Unit 6 alone adding 12 billion pounds annually). The NC WARN proposal reduces this to 10 billion pounds, a reduction in emissions of 87%. DEP's plan for 2027 results in annual carbon dioxide emissions of approximately 52 billion pounds, while the NC WARN proposal reduces this to eight billion pounds, a reduction in emissions of 83%.

However, these reductions are for carbon dioxide emissions alone; recent studies cited in the NC WARN report demonstrate the considerable emissions from the life cycle of natural gas production. Of particular concern is the leakage - at various stages of the fracking process - of methane, which is much more potent than carbon dioxide in terms of the greenhouse effect, particularly

over the all-important near-term period. Therefore, substituting natural gas for coal is not an effective means for reducing climate change.

CONCLUSION

The Commission's responsibility is clear in seeking the "least cost mix" of generation and energy efficiency; the mix should focus on energy efficiency measures and renewable energy sources and away from "costly overbuilding" of baseload generation. The Commission's examination of the IRPs should focus on how rapidly we are able to eliminate fossil fuels, while avoiding the staggering costs of new nuclear plants. If the goals of the IRPs are to find the "least cost" mix of generation and conservation, then the cost assumptions in the IRPs should be challenged to better reflect the escalating economic costs of new generation and the environmental costs of fossil fuels. There are very real alternatives, and continuing on the IRP's "the more centralized and old technology generating plants we build is better" path is unsustainable and potentially crippling to our state's ratepayers, economy and climate.

Respectfully submitted, this the 6th day of September 2013.



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CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing BRIEF OF NC WARN, BREDL AND GREENPEACE (E-100, Sub 137) 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 6th day of September 2013.



Attorney at Law

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ATTACHMENT A
EXHIBIT D

E-7, 5-b1026

STATEMENT REGARDING PROBABLE EFFECT OF PROPOSED RATES ON PEAK DEMANDS AND SALES

The following forecast from the Fall 2012 Forecast incorporates the effect of the expected rate increase on forecasted peaks and sales. Overall we expect the rate increase to result in a reduction in peak and energy of approximately 1.9% in 2013.

The Company estimates that the kilowatt-hours which will be used by our North Carolina Retail customers during the ensuing one year and the following five years are as follows:

	NC Retail GWH
2013	55,173
2014	55,775
2015	56,567
2016	57,311
2017	58,072
2018	58,836

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Clerk's Office
N.C. Utilities Commission

This statement is being furnished pursuant to G.S. 62-155(e).