STATE OF NORTH CAROLINA
ENERGY POLICY COUNCIL
Long Range Energy Generation and Renewables Committee

MEMORANDUM

TO: **Energy Policy Council Members**
FROM: **Carl Wilkins, Committee Chairman**
DATE: **May 6, 2015**
RE: **Nuclear Energy Generation Recommendations**

In accordance with the Energy Policy Council Committee Recommendation Policy and General Statute §113B-5, the Long Range Energy Generation and Renewables Committee requests that the full Council consider supporting the following recommendations

1. **North Carolina should maintain nuclear energy generation in its current and future energy portfolio to provide reliable, clean and emissions-free baseload energy.**
   - Nuclear energy provides 32% of total electricity generated in North Carolina
   - Nuclear energy is the only reliable source of zero-emission, always-on, base-load electricity.
   - Nuclear energy has proved to be very safe during its 50+ year history in U.S.
   - Nuclear power generation has the lowest land use intensity of any power source at 2.4 km2/TWh/yr.[1]
   - The U.S. Energy Information Agency estimates that new nuclear plants are among the least expensive on a levelized basis of new sources of electricity generation, projected at $96.1/MWh in 2019.[2]
   - Reliability, distinguishes nuclear reactors from other energy resources. Nuclear plants operate at 90% capacity factor on an annual basis.
   - Nuclear power plants are a significant provider of jobs and tax receipts, with a 1000 MW facility employing hundreds of permanent employees with salaries generally at least a third more than local average and contributing millions of dollars in state and local taxes.
   - Future new nuclear generation is needed to maintain North Carolina's competitiveness and assure that residents and businesses in North Carolina have reasonably priced and reliable energy in the years to come.

[1] The Nature Conservancy determined solar photovoltaic power generation requires 36.9 km2/TWh/yr, wind generation 72.1 km2/TWh/yr, and biomass generation 543.4 km2/TWh/yr.
[2] The levelized basis for cost calculation purposes is the "per-megawatt-hour cost (in real dollars) of building and operating a generating plant over an assumed financial life and duty cycle." See U.S. Energy Info. Admin., Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2014 1 (2014), at http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf

- Early action is needed to effectively plan and deploy new reactors. The two reactors at the Brunswick plant are at-risk of closing in 2034 and 2036 respectively.

2. **N.C.G.S. pertaining to Public Electric Utilities should be revised as follows to recognize the benefits of nuclear energy.**
   § 62-110.1 (e) should be revised as follows: *"A certificate for the construction of a coal ~~or nuclear~~ facility shall be granted only if the applicant demonstrates and the Commission finds that energy efficiency measures; demand-side management; renewable energy resource generation including nuclear; combined heat and power generation; or any combination thereof, would not establish or maintain a more cost-effective and reliable generation system and that the construction and operation of the facility is in the public interest."*

3. **North Carolina should improve its advance cost recovery regulatory structure to allow an investor owned electric utility to recover the costs prudently incurred in the siting, design, licensing, and construction of a new nuclear power plant through an annual nuclear accelerated cost recovery rider rather than a general rate case. The rider will provide more certainty to financial institutions, which will lower the interest rate for financing construction, and thereby reduce the effective cost of the new nuclear facility.**
   - Capital costs (construction and financing) account for 71.4% of overall nuclear generation costs, while capital costs are only 60.0% and 14.3% of conventional coal and natural gas generation costs, respectively.[3]
   - Financing costs are higher due to the longer construction periods during which interest accrues and the higher capital costs.
   - Cost recovery certainty during the pre-construction and construction phases lowers the perceived risk of investment, the project's financing costs, and ultimately lowers the cost of electricity for ratepayers.[4]
   - Florida, Georgia and South Carolina are three states with the best regulatory structure for nuclear cost recovery.

§ 62-110.7. Project development cost review for a nuclear facility.
(a) For purposes of this section, "project development costs" mean all capital costs associated with a potential nuclear electric generating facility incurred before (i) issuance of a certificate under G.S. 62-110.1 for a facility located in North Carolina or (ii) issuance of a certificate by the host state for an out-of-state facility to serve North Carolina retail customers, including, without limitation, the costs of evaluation, design, engineering, environmental analysis and permitting, early site permitting, combined operating license permitting, initial site preparation costs, and allowance for funds used during construction associated with such costs.
(b) At any time prior to the filing of an application for a certificate to construct a potential nuclear electric generating facility, either under G.S. 62-110.1 or in another state for a facility to

[3] Volpe, Robert C. "The Role of Advanced Cost Recovery in Nuclear Energy Policy." Sustainable Development Law & Policy 15, no. 1 (2015): 28-38, 59-61.
http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1562&context=sdlp
[4] See Third Way: Nuclear a Highly Cost-Effective Climate Strategy, Nuclear Energy Institute, http://www.nei.org/News-Media/News/News-Archives/Third-Way-Nuclear-a-Highly-Cost-Effective-Climate (accessed Apr. 1, 2015).

serve North Carolina retail customers, a public utility may request that the Commission review the public utility's decision to incur project development costs. The public utility shall include with its request such information and documentation as is necessary to support approval of the decision to incur proposed project development costs. The Commission shall hold a hearing regarding the request. The Commission shall issue an order within 180 days after the public utility files its request. The Commission shall approve the public utility's decision to incur project development costs if the public utility demonstrates by a preponderance of evidence that the decision to incur project development costs is reasonable and prudent; provided, however, the Commission shall not rule on the reasonableness or prudence of specific project development activities or recoverability of specific items of cost.

(c) All reasonable and prudent project development costs, as determined by the Commission, incurred for the potential nuclear electric generating facility shall be included in the public utility's rate base and shall be fully recoverable through rates in ~~a general rate case proceeding pursuant to G.S. 62-133~~ an annual cost recovery rider~~.~~

(d) If the public utility is allowed to cancel the project, the Commission shall permit the public utility to recover all reasonable and prudently incurred project development costs in a general rate case proceeding pursuant to G.S. 62-133 amortized over a period equal to the period during which the costs were incurred, or five years, whichever is greater. (2007-397, s. 7.)

The recommendations will be considered during the Energy Policy Council meeting scheduled for May 20, 2015.

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