



EMORY
SCHOOL OF
LAW

Turner Environmental Law Clinic

December 4, 2006

VIA ELECTRONIC AND U.S. MAIL

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration, Mailstop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: *Southern Nuclear Operating Company, Inc., Plant Vogtle Early Site Permit; Notice of Intent to Prepare Environmental Impact Statement and Conduct Scoping Process, Docket No. 52-011*

Dear Sir or Madam:

The Turner Environmental Law Clinic submits the following scoping comments regarding the Plant Vogtle ESP application on behalf of Atlanta Women's Action for New Directions ("WAND"), Blue Ridge Environmental Defense League ("BREDL"), Savannah Riverkeeper, ECO-Action, and the Center for a Sustainable Coast. This letter supplements the scoping comments of Turner Clinic Staff Attorneys' Larry Sanders and Mary Maclean Asbill made at the October 19, 2006 public meeting in Waynesboro, Georgia.

In the NRC review of Southern Nuclear Operating Company's Plant Vogtle ESP application, the Agency should assess, among others, the following issues:

1. The impacts that the addition of two nuclear reactors will have on water supply, water quality, and water temperature in the Savannah River;
2. The cumulative impacts on the surrounding environment, including air, water and soil quality, as well as impacts on human health;
3. The environmental consequences of potential terrorist activity;
4. The potential impact on minority and low-income populations in the area surrounding Plant Vogtle;
5. The availability and efficacy of alternative energy sources, including renewable resources; and
6. The disposal methods for addition nuclear waste, and the impact of such disposal.

GUNSI Review Complete

E-RDS = ADM-03

Emory University
Gambrell Hall
Atlanta, Georgia 30322-2770

Tel 404.727.5542
Fax 404.727.7851

*Call = m. nish (mdu)
C. Yunker (CX93)*

An equal opportunity, affirmative action university

Template = ADM-013

*10/5/06
71FR 58882
63*

RECEIVED

2006 DEC 11 PM 4:49

RULES AND DIRECTIVES
BRANCH
USNRC

I. Water Supply, Quality, and Temperature

NRC must consider the impact that the proposed expansion at Plant Vogtle will have upon water supply, water quality, and water temperature in the Savannah River over the duration of the twenty-year permit.

The expansion will significantly impact water supply. While Southern Nuclear Operating Company (SNC) emphasizes that no more than 1-2% of the Savannah River's flows will be lost, this loss of river flow is hardly insignificant. Expected growth along the Savannah River over the next twenty years suggests water supplies will be at a premium. While demand for drinking water is increasing, saltwater intrusion into coastal area aquifers is expected to make the Savannah River even more important as a source of drinking water for downstream users in Augusta, Savannah, Hilton Head and Beaufort. Therefore, NRC must address the impacts that this additional withdrawal will have upon the River—particularly during times of drought.

The additional intake is also likely to have significant impacts on water quality and aquatic life. As a result of releases from Savannah River Site (SRS) and Vogtle, the lower Savannah River is already the most tritium-contaminated environment in the nation. NRC must examine to what extent the addition of two reactors will add to that contamination. In addition, saltwater intrusion of the River itself has been a major concern, which could be exacerbated by the expansion and must be further examined by NRC.

Finally, the increase in effluent discharge will lead to higher water temperatures that could negatively impact aquatic life. The impacts of this increased water temperature was not thoroughly explored by the SNC Environmental Report, and needs to be explored by NRC.

II. NRC must determine the cumulative impacts upon the environment including the Savannah River Site

Cumulative impacts are “impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” 40 CFR 1508.7. Based on this definition, NRC must consider the proposed expansion in light of the already dangerous environmental conditions caused by the current operations at Plant Vogtle and at the Savannah River Site (SRS). In addition, as mentioned above, NRC must consider each of these impacts in conjunction with the anticipated growth along the Savannah River over the next twenty years and the additional health risks that will be presented by additional citizens' use of the river for drinking water.

As a result of releases from Savannah River Site (SRS) and Vogtle, the lower Savannah River is already the most tritium-contaminated environment in the nation. The existing storage of radioactive waste at SRS and Vogtle already creates a tremendous risk to the river. With no place to send the waste, Plant Vogtle currently stores spent fuel

rods on site, in subterranean cooling chambers where they are likely to stay for the foreseeable future. As long as these spent rods are stored on site, this highly radioactive waste will threaten the Savannah River for hundreds or even thousands of years to come.

At SRS, many nuclear wastes including tritium, organic solvents, heavy metals and other wastes remain precariously buried at the Radioactive Waste Burial Ground, where waste was originally stored until 1972. This unlined pit is over a mile long and 500 yards wide. Little care was taken in packaging the waste, often using only a cardboard box or no container at all. Today, these wastes present a major threat to water. Waste plumes have formed on all four corners of the burial ground. Tritium forms the leading edge of three of the plumes because it gets incorporated into the water molecule. But close behind is trichloroethylene, a degreasing solvent used in large volumes in early nuclear production. Whether the 50 tons of lead, the 12 tons of mercury and the 3,500 pounds of cadmium buried here will stay in place is anybody's guess. These issues must be addressed by NRC as it considers the Vogtle ESP.

The tritium from the southwest plume reached Four Mile Creek about eight years ago. Because tritium would pose a severe hazard to surface waters, the Department of Energy has frantically tried to address the threat with wind and time. It constructed an underground dam to block the flow of the plume. The blockage of groundwater has resulted in a surface pond from which water is sprayed back onto the trees on the property, allowing toxins to evaporate and be carried away by the breezes.

In addition, Congress has approved the construction of a mixed-oxide (MOX) fuel production plant for SRS. MOX fuel is a mixture of uranium-oxide (current fuel for most civilian U.S. nuclear power plants) and plutonium oxide. The plutonium oxide would come from stockpiles of weapons grade plutonium from dismantled nuclear bombs. SRS now serves as host to weapons grade plutonium in the powdered oxide form, which is highly dispersible. While Plutonium is not a particularly dangerous radioactive element to be in close proximity to, ingestion or inhalation of plutonium turns it into one of the most potent toxins known to mankind. With a half-life of 24,000 years, the possibility of a plutonium accident poses a tremendous risk to drinking water supplies in Savannah, Hilton Head and Beaufort.

III. Environmental Consequences of Potential Increased Terrorist Acts

Nuclear power plants have been recognized as posing extremely serious risks in regards to potential terrorist activity. As noted in a 2005 report to Congress, "Protection of nuclear power plants from land-based assaults, deliberate aircraft crashes, and other terrorist acts has been a heightened national priority since the attacks of September 11, 2001."¹ Further, the former Chair of the NRC Richard Meserve has stated that the design basis for currently operating nuclear power plants is not sufficient to survive the impact of large commercial aircrafts such as a fully-loaded Boeing 757 or 767.

Significant changes in safety requirements for nuclear power plants have been made since September 11. For example, there has been a heightened standard for security officer training,² stricter access requirements at nuclear power plants, and

¹ CRS Report for Congress: Nuclear Power Plants: Vulnerability to Terrorist Attack; <http://www.vnf.com/security/rs21131.pdf>

² 10 C.F.R. 73.55.

“increase[s] in the ‘design basis threat’ that nuclear security must be able to defeat.”³ Although the Plant Vogtle application does address the existence of airports and aircrafts in the area, it fails to address the issue of potential terrorist threats or the adequacy of the design basis in light of this threat. These factors, as well as the potential impact of such a terrorist attack, must be extensively assessed by the NRC in their review of the Plant Vogtle ESP application.

IV. Impact on Minority and Low-Income Populations in the Area Surrounding Plant Vogtle

The National Environmental Policy Act (NEPA) requires that the impacts of proposed NRC actions be fully addressed, including the potential impact on low-income and minority populations. While the Environmental Report does address the occurrence of minority and low-income households around the Plant Vogtle site, it fails to take accurate account of the particularly severe impact that two new nuclear reactors will have on the low-income and minority populations in the area based on a number of factors specific to those populations.

In particular, the NRC should consider the impact of the increase in radioactive material in the Savannah River system on those populations engaging in subsistence fishing along the Savannah River. Subsistence fishing is common on the Savannah River, particularly among minority and low-income populations, who rely on the Savannah River for food. These populations, already subject to high levels of radiocesium from their consumption of fish, will be particularly susceptible to increases in hazardous material, such as tritium, in the Savannah River from the addition of two new nuclear power generators.

Further, the NRC should consider the evidence of a higher than average instance of ovarian cancer in the Burke County area, and the impact that the addition of two new nuclear power plants will have on the health of a population that is already suffering from higher than-average rates of cancer. In addition to this, there are significant issues relating to provision and adequacy of health care for minority and low-income populations in the area, and those issues should be considered in conjunction with the threat of increased health risks associated with the addition of two new reactors.

Finally, the NRC should consider the impacts on the minority and low-income populations in the event of a nuclear emergency. The ability of those populations to evacuate in the event of such emergency is of particular concern, and the plans and policies that are in place within the Burke County area to evacuate such individuals, should be taken into consideration.

V. NRC must analyze a full range of energy alternatives to the proposed expansion, including renewable energy resources and energy efficiency

NEPA requires that the NRC “rigorously explore and objectively evaluate all reasonable alternatives” to the granting of an Early Site Permit, including renewable energy and energy efficiency. 40 C.F.R. 1502.14(a). Notably, NRC is not permitted to

³ CRS Report for Congress: Nuclear Power Plants: Vulnerability to Terrorist Attack; <http://www.vnf.com/security/rs21131.pdf>

consider whether there is a need for the power that the Vogtle expansion would create. *Id.* However, NRC is specifically required to develop and explore “appropriate alternatives to recommended courses of action in any proposal, which involves, unresolved conflicts concerning alternative uses of available resources.” 10 C.F.R. 51.45. Utilizing energy efficiency and renewable energy clearly qualify as “appropriate alternatives” to expanding Plant Vogtle, and must be “rigorously explored” and “objectively evaluated” as part of the EIS.

Although the SNC Environmental Report addresses alternatives, it can hardly be considered “objective.” The Report concludes that conservation measures including Demand Side Management (DSM) could not meet future demand. See Environmental Report at 9-2.4. But SNC’s DSM efforts thus far have been minimal compared with major utilities in other parts of the country. Of course, SNC has no incentive to increase DSM, which would reduce electricity sales, and thus, its own revenues.

In particular, the Environmental Report fails to consider conservation and renewable energy sources as part of a multi-part solution. While the report acknowledges that alternatives that might not be viable on their own could still be viable in combination with other sources, it only considers one such combination (coal and natural gas) without addressing a myriad of other permutations. See Environmental Report 9-2.17. Most notably, the Environmental Report fails to explore whether *conservation and renewable energy together* might provide a reasonable alternative.

SNC’s Environmental Report does not comprehensively and objectively assess alternatives. Nor can it be expected to be given its own incentives to keep energy demand high. But this should not keep NRC from conducting its own “objective” evaluation of reasonable conservation and energy alternatives. The NRC needs to evaluate the current and projected renewable energy opportunities in Georgia, such as wind, solar (both photovoltaic-PV and solar thermal), and bioenergy using up-to-date information. For instance, the wind data used in Chapter 9 of SNC’s Environmental Report is outdated; new, certified wind maps of Georgia, which include off shore wind supplies, were just released by the National Renewable Energy Laboratory.

VI. NRC must thoroughly consider how nuclear waste will be disposed of and what environmental impact this disposal will have in Georgia and/or neighboring states.

Finally, the NRC should take into consideration the serious problems posed by disposal of nuclear waste, as well as the specific problem posed by disposal of the additional nuclear waste generated by two more reactors at the Plant Vogtle site. Currently, the Plant Vogtle site has no place to send their generated nuclear waste, instead storing their spent fuel rods in underground cooling chambers. The spent fuel rods, which are highly radioactive, will therefore likely remain on site in these cooling chambers for significantly long periods of time, posing even greater risks to the Savannah River. In fact, the natural decrease in these radioactive materials can take up to thousands of years. The threats posed to the surrounding areas in Burke County, as well as to the Savannah River, in relation to the onsite storage of this nuclear waste, including threats

posed in the event of a leak, must be taken into consideration in evaluating the Plant Vogtle ESP application.

Thank you for this opportunity to comment in this scoping process and for your consideration of these comments

Sincerely,


Christopher Adams
Student Attorney


Stephanie Biddle
Student Attorney


Larry Sanders
Staff Attorney


Mary Maclean Asbill
Director