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I attach comments on the North Anna ESP SDEIS on behalf of the Virginia Chapter of the Sierra Club. These comments supplement verbal remarks made at the hearing in Mineral on August 15, 2006.

Richard H. Ball  
Energy Issues Chair, Virginia Chapter Sierra Club

Dick Ball

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## **Sierra Club Virginia Chapter Comments on Draft EIS Supplement 1 for an Early Site Permit (ESP) at the North Anna ESP Site**

*Supplement to Verbal Comments Presented at Public meeting on August 15, 2006 by Dr. Richard H. Ball, Energy Issues Chair, Virginia Chapter, for the Record.*

### **OVERVIEW**

The present comments address the changes in the project and the associated DEIS contained in Supplement 1 (SDEIS). The Virginia Chapter of the Sierra Club previously commented on the DEIS in January, 2005, and concluded that the DEIS had serious deficiencies. The Virginia Department of Environmental Quality (VDEQ) also identified a number of deficiencies in the DEIS. Hence, one key question is whether Supplement 1 corrects the most serious deficiencies in the DEIS and the project itself identified by the Sierra Club and the VDEQ. The Supplement particularly identifies changes in the project proposed by the applicant, particularly the increase in thermal output of the reactors, a complete redesign of the cooling system for Unit 3, and changes in operating procedures regarding lake levels. The Sierra Club and VDEQ previously raised serious questions about the adequacy of Lake Anna's water supply to support cooling for an additional reactor and about the associated downstream impacts of decreases in water releases to the North Anna River resulting from Unit 3 operation. Hence, the second major question is whether the changes proposed in the project will adequately alleviate those impacts? **Our conclusion is that the answer to both those questions is no.** The SDEIS is still deficient and the changes in the project will not alleviate the downstream impacts of serious decreases in lake releases during periods of drought or near drought. The frequency of released flows of 20 cfs are estimated in the SDEI to increase from 6% to 11%, which could have serious ecological impacts. Another serious defect of the SDEIS is inadequate discussion of alternatives to the proposed project, including the alternative of using dry cooling for Unit #3 similar to that proposed for Unit #4. Furthermore, Dominion Virginia Power has not been making any serious effort to pursue renewable energy alternatives nor to promote effective measures to conserve electricity or increase efficiency of use.

**We continue to oppose the project. In addition to other impacts discussed previously, we believe the NRC has made serious errors in the SDEI in concluding that the impacts of reduced releases of water would be SMALL and in recommending that the ESP be issued.**

### **Water Consumption and Downstream Impacts**

This revised DEIS continues to have serious deficiencies. The proposed project continues to have critical problems. The impacts on decreased water releases to the South Anna River have not adequately been mitigated by the proposed changes in the project.

Our previous conclusion on the water resource consumption issue, consistent with that of the VDEQ, was that this watershed is already overtaxed by the existing reactor operations and cannot accommodate additional water consumption by even one new reactor that results in water consumption for cooling. Changes in the cooling system for Unit #3 to utilize a

combination of wet and dry cooling towers evidently increases the maximum water consumption rate even further during the EC mode and reduces it only slightly during the MWC mode relative to the previous once-through cooling option, as indicated in the following table based on values reported in the DEIS and SDEIS:

Table of Water Consumption for Unit 3

Mode	Net Water Use (gpm)*
Previous Once-Through Option	11700
New Plan: EC mode	16703
New Plan: MWC Mode	11540

\* Net Water Use=Withdrawals minus cooling tower blowdown returned to lake. EC and MWC mode values are computed from values given in Table I-2, Appendix I, of the SDEIS.

However, in fairness, those are maximum values which vary with meteorological conditions. It is claimed in Appendix I that the average annual consumption is only 8707 gpm. What is difficult to assess is the frequency with which high water consumption levels will coincide with relative drought conditions resulting in low releases of water to the North Anna River. That presumably depends in part on operational protocols governing how the reactors as well as the cooling towers will be operated in relation to meteorological conditions, lake levels and ecological requirements of the North Anna River. I.e., what criteria would govern operations? Will reactor power be reduced to avoid low releases to the North Anna River or lake levels that are undesirable for its recreational and fishing values? Citizens are understandably concerned that when the economic values and electrical system needs for reactor operations clash with ecological needs of Lake Anna, the North Anna River and downstream resources that the latter values will lose out.

The SDEIS concludes that the frequency of water releases at the level of 20 cfs will increase from 5% to 11%. That is not acceptable in terms of impacts to the North Anna River and downstream areas.

Use of a dry cooling tower, discussed only for Unit 4, would eliminate the water consumption problem for that unit. If dry cooling is feasible for Unit 4, why is it not equally feasible for Unit 3? That alternative is not evaluated.

The SDEIS does not deal adequately with the impact of project consumption on ecological and recreational values or on downstream water use, in spite of issues raised by the Virginia Department of Environmental Quality (VDEQ). There is no adequate justification for the conclusions about the degree of environmental impact during droughts, or the conclusion that no mitigation is required. The discussion about water impacts appears to be perfunctory and the conclusions are not consistent with the projected water flows and the issues raised by the VDEQ.

### **Summary of Other Important Issues**

Other site-specific and generic issues regarding the proposed addition of reactors units include:

- **Water Quality Issues:** The revised cooling system for Unit 3 includes a wet cooling tower from which blowdown would be discharged into Lake Anna. The SDEIS states that makeup water for that tower would be treated with biocides, antiscalants and dispersants. The SDEIS does not appear to contain an adequate discussion of the treatment of the blowdown or the potential effects of the blowdown on Lake Anna and downstream ecological resources.
- **Lake Levels:** Altering the intake structures for Units 1 and 2 and lowering the allowable minimum lake level would permit incrementally greater effective storage at the expense of greater impacts on recreation and fish populations.
- **High-level waste management:** The Draft EIS fails to evaluate the environmental impacts and security threat of indefinitely storing the additional irradiated fuel that will be generated by the proposed reactors onsite. In view of problems with the Yucca Mountain repository, there is no guarantee if or when another permanent repository ever will be available. Lake Anna would become a semi-permanent, if not permanent high level waste repository.
- **Impact on Wetlands.** Existing wetlands, streams, and woodlands on the North Anna Power Station (NAPS) site may be adversely affected by construction activities for the proposed Units 3 and 4 (draft EIS, page 4-2, lines 20-23) and possibly by potential increases in the maximum Lake Level and decreases in the minimum Lake Level.

While we will not address those issues in further detail here, that does not imply that they are unimportant. Several of those issues, except for the new issue of cooling tower blowdown, have previously been raised but are still not answered adequately.

Another related issue is the approach in the DEIS of postponing several key site-related issues to the COL process. We believe that violates the spirit, if not the letter of the NRC's staged process for approval of new reactors. It makes no sense to certify the suitability of a site before it is clear whether there are viable and satisfactory solutions for issues such as storage of spent fuel and provision of water for cooling. That could lead to abuses of the staged process in which excessive momentum is developed favoring final approval irrespective of whether there is strong evidence that alternatives and solutions exist for issues left unresolved during the ESP process.

### **Conclusions**

**We continue to oppose the project. In addition to other impacts discussed previously, we believe the NRC has made serious errors in the SDEI in concluding that the impacts of reduced releases of water would be SMALL and in recommending that the ESP be issued. The SDEIS does not adequately evaluate the potential downstream impacts of further decreases in minimum water releases to the North Anna River.**