

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

August 28, 2006

Mr. Jack Cushing  
OWFN 11 F-1  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

RE: Comments to Supplement 1 of the Draft Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site – NUREG-1811 (North Anna ESP project), CEQ # 20060290.

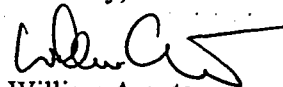
Dear Mr. Cushing:

In accordance with the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act, and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), the U. S. Environmental Protection Agency (EPA) has reviewed the Supplement 1 of the Draft Environmental Impact Statement (SDEIS) for the above referenced project. As you are aware Supplement 1 is due to changes made by the project sponsor, Dominion North Anna, LLC. Those changes included modifying Unit 3 cooling system from a once-through system to a closed cycle, combined wet and dry system and to raise the power level in both Units 3 and 4 from 4300 Megawatts-thermal (MWt) to 4500 MWt. Due to the limited information provided as well as limited time available to conduct a comprehensive review, we are unable to provide an inclusive set of comments.

Under EPA's system for rating Environmental Impact Statements, we are rating the environmental impacts associated with the North Anna ESP project as Environmental Concerns 2 (EC-2). An EC rating means the review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. The numeric rating assesses the adequacy of the Environmental Impact Statement. The 2 rating indicates that the SDEIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment. The basis for these ratings is reflective in the following comments. A copy of our rating system is attached, and can also be found at: <http://www.epa.gov/Compliance/nepa/comments/ratings.html>.

If you any questions regarding this issue please feel free to contact Kevin Magerr at (215) 814-5724.

Sincerely,



William Arguto,  
NEPA Team Leader

Attachments: Comments, EPA Rating System Criteria

## COMMENTS FOR THE NORTH ANNA PROJECT

1. The Purpose and Need provision of SDEIS does not include an assessment of the energy needs that the addition of two nuclear power units at the North Anna facility would be intended to satisfy. The focus of the Purpose and Need was restricted to simply the suitability of siting two nuclear power units at the facility without any assessment of the need for the two additional units. EPA believes an energy needs assessment should be included in the NRC's NEPA review at a point in the process when such an assessment--including an assessment of options other than construction of additional units --would be meaningful. This is especially a concern because the NRC apparently has not yet resolved issues related to the interface of the ESP with the combined construction and operating license, combined license (COL) process. See <http://www.nrc.gov/reactors/new-licensing/esp/generic-esp-issues.html>. It is unclear whether the energy needs analysis will be included under the NRC's Construction Permit/operating license EIS.
2. The SDEIS only evaluates alternative sitings for nuclear power plants and does not evaluate alternative energy sources. As stated above, EPA believes an assessment of alternative energy sources should be included the NRC's NEPA review at a point in the process when such an assessment would be meaningful. This is especially a concern because the NRC apparently has not yet resolved issues related to the interface of the ESP with the COL process. See <http://www.nrc.gov/reactors/new-licensing/esp/generic-esp-issues.html>. It is unclear whether alternative energy sources will be included under the NRC's Construction Permit/operating license EIS.
3. The SDEIS should include further discussion into the thermal variance issued under the existing NPDES permit for Units 1 and 2. As discussed in the SDEIS the most significant surface water quality concern with the existing units is the localized elevated temperatures. Elevated temperatures can place stresses on the aquatic communities due to reduction in dissolved oxygen. This condition has been compounded in Lake Anna by the tributaries being impaired by low dissolved oxygen (DO) levels. The DO impairment to the tributaries is significant enough for the Commonwealth of Virginia to designate them under Section 303(d) of the Clean Water Act. EPA has concern that the proposed project may not be accounted for under the existing thermal variance for units 1 and 2.
4. The SDEIS should investigate the existing and potential impacts of the proposed project to the trophic condition of Lake Anna. High temperature and low DO along with high nutrients can cause algal blooms in the lake. Algal blooms are known to accelerate lake eutrophication and can cause human and animal health effects.
5. EPA has concern that the twenty year horizon allotted under the SDEIS does not have any protective assurance that unforeseen population growth and/or additional stressors on the Air or Water resources will be accounted for. Typically an action that has not occurred within three years of an EIS requires at a minimum a supplemental EIS.
6. The SDEIS does not provide information on the delineation (in acres) or the type of

wetlands impacted by the construction and operation of the proposed facility, nor does it include any mitigation for the loss of wetlands.

7. The SDEIS does not provide information on the linear feet of streams impacted by the construction and operation of the proposed facility, nor does it include any mitigation for the loss.

8. The Virginia Department of Environmental Quality – Game and Inland Fisheries (appendix F-50) have raised issues related to fish impingement and entrainment as well as increase water temperature and circulation flow patterns associated with the water demand of the proposed units during SDEIS application review. It is unclear under the SDEIS what was modeled, what the results of the modeling were and what was the mitigation, if any being proposed.

9. Information regarding the demographic make up of the communities in close proximity to the areas of potential impact is not well defined. The document does not contain detailed information regarding the exact demographics of the areas that would be most impacted by site activities. Community characterization at the small community level would be most helpful. What is the make up of the areas closest to the site? Are there areas close to the site where multiple site activities might take place? What would the cumulative impacts be on such a community?

10. What is the rationale of using national averages for the assessment of minority and low-income populations? The comparison of community data to national averages alone seems unreasonable. With the vast disparities among the make up of communities across the country, and the Regional differences we see in community make up, it seems inappropriate that a national benchmark would be applied in the assessment. It is much more appropriate from a statistical point of view to use state and county level benchmarks. That is, state and county averages for minority and low-income populations should be used for identifying the areas of concern. In view of the fact that the poverty level differs from one state to another, it would seem more reasonable that the assessment would use state level data.

11. The data used in the determination of populations of Environmental Justice concern is out dated. The assessment needs to be redone using the most recently available census information (2000 Census data).

12. The Environmental Justice assessment provided in the document is vague. Little information of use is provided, and no documentation is presented to support conclusions. It is difficult to determine if the conclusions drawn in this document are valid based upon the scarce information provided related to potential impacts and target populations.

13. The listing of groups and organizations contacts lacks representative groups from the Environmental Justice and grassroots community. While a number of tribes were listed in the contacts list, the listing lacked local community-based organizations, local

churches and other groups traditionally associated with the Environmental Justice movement. Failure to conduct adequate and appropriate outreach and communication can be most problematic. It also represents a major problem from the Environmental Justice point of view. It is strongly suggested that a more comprehensive outreach and community involvement plan be instituted. Please consult "The Model Plan for Public Participation", developed by the Public Participation and Accountability Subcommittee of the National Environmental Justice Advisory Council (please see <http://www.epa.gov/compliance/resources/publications/ej/nejac/model-public-part-plan.pdf>).

14. It is not clear as to the methods used to determine the level or degree of impact anticipated. What are the criteria upon which the conclusions are based?

15. The document is too broad in its consideration of potential plant designs. The document intends to allow for the citing of 7 potential designs for nuclear units. While adequate design information exists for a few of the designs, by the admission of the NRC there is inadequate design information available for some of the proposed units from which to make accurate environmental assessments of the impacts. The document should limit its scope to those nuclear plant designs for which reasonable data existed for assessing environmental impacts. If the NRC continues to consider those reactor units as viable it should develop a supplemental EIS or an additional EIS when environmental information becomes available. Based on a review of the SDEIS, the document should be limited to the following units: ACR-700, Advanced Boiling Water Reactor, Advanced Pressurized Water Reactor (Surrogate AP1000), and the Economic Simplified Boiling Water Reactor.

16. Chapter 1, Pg 1-3 line 22 - The document states that a detailed design of the reactor or reactors is not needed at this time. However, there should be enough design information or data available on any reactor design to accurately bound the environmental impact. For several of the desired plant designs, this information is either not available or not provided as part of the SDEIS in order to substantiate Plant Parameter Envelope information.

17. Chapter 3, Section 3.2 - The approach to develop a plant parameter envelope, while valid, is much more useful for developing a generic environmental impact statement. The approach proves less useful when referring to a specific action at a site. This approach is less credible when used to encompass reactor designs for which no accurate design parameters exist (the gas cooled reactors, and the IRIS next generation pressurized water reactors).

18. Chapter 3, Section 3.2.1.2 - If unit 4 will be a dry cooling tower, then it will require some combination of water treatments, which should be relatively straightforward based on the draft designs. There should exist enough information for this analysis to be included in the SDEIS.

19. Chapter 3, Pg 3-14, Line 14 - Please explain why radioactive waste management

systems have not been identified. The description of the high level waste storage facility, security of this facility and the monitoring (frequency and type) are not addressed.

20. Chapter 3, Pg 3-14, Line 20 - If adequate design information is only available to accurately estimate liquid and gaseous effluents for 4 reactors, then this SDEIS should only apply to those reactors. The usefulness of the information included in this SDEIS is limited to those plants used as a design basis for the Plant Parameter Envelope (PPE). Otherwise, problems will arise when a PPE has been established, but a new design must be "shoe-horned" into the parameters established by the PPE (which were based on other reactor designs).

21. Chapter 3, Section 3.2.4 - The SDEIS should state all the Federal and State regulations that apply.

22. Chapter 6, Pg 6-13, Line 5 - Note that the impacts of gas-cooled reactors would need to be assessed at the construction permit (CP) or COL stage, when more data is available on the design.

23. Chapter 6, Pg 6-16, Line 16 - Note that the document states that there exists significant uncertainty in the final design of any gas-cooled reactors. Thus, the SDEIS should be limited to exclude the design of these reactors until specifics on the design are known. Same comment for Pg 6-30, Line 19.

24. Chapter 7, Section 7.8 - The statement that the impact of operating the new units is "well below the estimated effects from natural radiation" misses the point. The public has no control over natural radiation, but the point of this SDEIS is to evaluate the impacts of siting 2 new nuclear units so that an informed decision can be made as to its merit.



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### Environmental Impact Statement (EIS) Rating System Criteria

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EPA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft EIS.

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#### RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

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- **LO (Lack of Objections)** The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.
- **EC (Environmental Concerns)** The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.
- **EO (Environmental Objections)** The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

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1. *Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;*
  2. *Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;*
  3. *Where there is a violation of an EPA policy declaration;*
  4. *Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or*
  5. *Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.*
- **EU (Environmentally Unsatisfactory)** The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. *The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;*
2. *There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or*
3. *The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.*

[Return to Top](#)

### **RATING THE ADEQUACY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)**

- **1 (Adequate)** The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.
- **2 (Insufficient Information)** The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.
- **3 (Inadequate)** The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.

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Last updated on Thursday, March 23rd, 2006  
URL: <http://www.epa.gov/compliance/nepa/comments/ratings.html>