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

RECEIVED

Re: North Anna ESP Permit and DEIS and SDEIS

Thank you for the opportunity to review and comment on the SDEIS.

In preparing these comments, I have tried to follow the section numbers in the DEIS but since many items come up in several parts of the document, the comments should be considered to apply to all such occurrences. Furthermore, I apologize if comments may be referenced in the wrong section (for example, comments on impacts are given with cites to sections on the existing environment).

In general, the SDEIS like the DEIS, does not conform to the standards for a NEPA-compliant DEIS.

On February 25, 2006 I submitted a comment letter on the DEIS. Please consider the following four major comments and other clarifications in addition to those comments.

MAJOR COMMENTS:

1. **It appears that there are major discrepancies in the water sections.** In numerous places the SDEIS asserts that data was lacking or simplified methodologies were used. (See for example Page 1-6 which states *inter alia* insufficient information was available "to allow the NRC staff to complete its independent analysis" and "these issues are not resolved for the North Anna ESP site"). As evidenced from the recent public hearing, water use and impacts on lake level and downstream flow are major areas of concern. The SDEIS (see Table 10-3 e.g.) that the impacts of water use and quality are "unresolved" is not sufficient to make a determination of the project's acceptability. Perhaps a solution is to commission a truly unbiased third party water study to provide better methodology and data for impact assessments. This study could be incorporated into a new DEIS.

2. **The section on socioeconomics is lacking.** For example, there is no data on the impact that the project will have on local house values. The impacts on the human environment must be fleshed out in an EIS and this should be addressed in Section 5.5.3.1 or 5.5.3.5. The potential impacts to the DC area are not addressed at all in the document and should be included. The document does not address the life cycle costs of power and the amount of government subsidy involved.

SUNSI Review Complete

E-RIDS = ADM-03

Adv =

Goldsmith comments on NUREG-1811, SDEIS

page 1 of 7

Template = ADM-013

Jack Cushing (5X09)

3. **The transportation section is totally deficient.** There is currently insufficient infrastructure to support the construction workforce or handle an evacuation. Assuming that the roads will be there when required (Page 5-37, line 16) is not science, it is superstition. The SDEIS states "No new transportation routes ... are currently planned in the vicinity of NAPS." (Page 2-4 line 37) There is little to no funding for road expansions in Virginia. The DEIS acknowledged that the I-95/606 interchange is congested at "LOS D or worse" and that SR208 from Blockhouse Road to Lake Anna (about 12.5 miles) is a minor two-lane road. Increased construction usage will have major impacts on these roads. If an evacuation is required during the construction interval when additional personnel are on site, the impact would be staggering.

4. **The section on emergencies and radiation impacts is not understandable by lay persons.** A summary is required that clearly sets out (a) expected radiation impacts in the study area, and (b) the possible radiation impacts from an emergency. Emergency situations should include terrorist attacks. Shouldn't a worst case analysis be included for low-probability events?

OTHER COMMENTS:

5. Although NRC Statement 7590-01-P states that "The scope of the SDEIS is limited to the environmental impacts associated with the changes in ER Revision 6" there is some new information presented about the project as a whole. This makes it confusing for the reader whether the SDEIS is addressing just the cooling changes or the entire project. Without a clear understanding the reader cannot form an educated opinion about the project impacts and thus the acceptability (or not) of its implementation.

6. The above point argues for re-releasing the SDEIS with the changes from the DEIS being clearly highlighted such as using an italics or redline method. Alternately, a new DEIS could be issued that provides a comprehensive analysis including addressing many of the shortcomings of the original DEIS.

7. We appreciated the opportunity to participate in the August 15 hearing. However VA DEQ held a hearing on the project on the following day. This presents a time burden on affected individuals to participate in both processes. Would it be possible to hold a combined public hearing that addresses all jurisdictional issues in the future? This would facilitate public participation (which is one of the goals of the NEPA process) rather than be divisive.

8. It seems that the SDEIS, like the DEIS, was not performed by an unbiased interdisciplinary team as is required by NEPA. For example, Page 1-6 states that "Domizion did not or was unable to provide information and analysis for certain issues sufficient to allow the NRC staff to complete its independent analysis". Thus the issues "are not resolved". The NRC should have commissioned independent sources to develop the required data.

9. It is imprudent to conclude a recommendation to approve an ESP where major issues "are not resolved".
10. The same limited three-year climatological data set that was used in the DEIS is used for the SDEIS (page 2-7 line 3). Is this the same data referred to in Page 5-14 line 22? This may be insufficient to accurately predict ground fog impacts from the project. Furthermore, this data set is inconsistent with other reporting periods (see 5-58 line 38 e.g.) used elsewhere in the document.
11. The impacts to traffic from increased fog occurrence (Page 5-14 line 23) should be addressed in the SDEIS.
12. Does the feeding range of bald eagles or loggerhead strikes extend to the North Anna vicinity (Page 2-13 line 32)?
13. The lack of full-time hospitals and fire/rescue facilities in the immediate Lake Anna area creates a high potential for serious impacts from an accident at the project. How can the SDEIS state that the impact is SMALL (with no hospitals in "the nearest three Counties" – page 2-18) when the DEIS stated that the impact is SMALL and assumed the existence of two hospitals in Spotsylvania?
14. Section 3 introduces the hybrid cooling tower. Is there an operating nuclear plant in the U. S. that has demonstrated this hybrid cooling tower technology is appropriate and safe for such a large thermal load? If not, the technology risks should be assessed and discussed herein.
15. Section 3.2.1.2 mentions water treatment effluent. Shouldn't Chapter 8 include an assessment of a zero discharge option as is used in many other power plants?
16. Chapter 3 mentions blowdown and other discharges. Will the applicant stipulate to a 100 degree thermal discharge limit as an operating permit condition as requested by the Waterside Property Owners Association? Will the applicant stipulate to a 104 degree limit at the end of the discharge canal as requested by Friends of Lake Anna?
17. Section 4.4.3 line 35 acknowledges that bald eagles nest as close as 2.5 miles to the site. What effect will the project have on fish that the eagles may use as a food source?
18. Given that Louisa County had a population of about 25,000 in 2000 (Page 2-1 line 42), the conclusion that a construction work force of 5,000 would have a SMALL impact (Section 4.5) is unsubstantiated and suspect.
19. At the public hearing, Lake Anna residents expressed concern about the aesthetics of the cooling towers. A visual simulation should be included as part of section 4.5.1.4 to address this concern.

20. Section 5.3 mentions that water level changes will be heightened during the period July – September. Since this coincides with increased summer recreational use of the lake, even minor changes could have MODERATE or HIGH impacts.

21. The SDEIS continues to be very troubling regarding water analysis. It states that the assessments “are based on a simplified representation of the conservation of mass for the lake”. This excludes water temperature stratifications and the flow contributions from a many of the tributaries. How then, can the impact forecasts of SMALL be reliable? How can “no mitigation” be a reasonable solution?

22. Along the lines of the prior comment, page 5-7 line 26 concludes that “relatively small errors in the pool elevation measurements using this model can result in significant errors in the precipitation, groundwater, and tributary inflow estimate”. How then, can the impact forecasts of SMALL be reliable? How can “no mitigation” be a reasonable solution? Perhaps an independent comprehensive water study would provide more robust impact assessments.

23. Shouldn't the operator's role in decisions to change the normal lake level (Page 5-11, line 28 *et. seq.*) be one of conditions of the ESP? Just because “modifications to the water release regime from the Lake Anna Dam to mitigate impacts would be under the jurisdiction of VDEQ (Page 5-33 line 14), does not absolve the operator or the NRC from adopting reasonable mitigation measures which could be subject to VDEQ approval.

24. Wouldn't the installation of new unit(s) be an opportunity to mitigate some of the existing problems with water temperature and lake level?

25. Shouldn't the WHTF be subject to Clean Water Act and DEQ standards? It is fed by eight public streams and should be treated as public waters.

26. Page 5-24 states that “larval abundance is not known” and that a 1978 model was used for the estimation. How good is the estimation? Couldn't representative sampling give an estimate of larval abundance?

27. Page 5-27 discusses cold shock and says that it will be less of a problem with a multiple unit plant. This is only true if the entire station does not shut down. If the remaining unit or units shut down, the cold shock will be much more severe due to the loss of a huge thermal load.

28. The SDEIS concludes on page 5-31, line 18 that “consumptive water losses may noticeably impact lake levels and downstream flows”. This is a major area of local concern and should be more thoroughly analyzed and documented. It is hard to understand how an impact assessment of SMALL is derived from the discussion. It seems like the impacts are at least MODERATE and potentially LARGE.

29. Section 5.9 is hard to understand by lay persons. A summary is required that clearly sets out expected radiation impacts in the study area.
30. Section 5.10 is hard to understand the possible radiation impacts from an emergency. Given that “radiation experts conservatively assume that any amount of radiation exposure may pose some risk of causing cancer or a severe hereditary effect”, a common language summary is required that clearly sets out expected radiation impacts in the study area.
31. Please clarify the statements in page 5-57 line 35 et. seq. Does the SDEIS say that the project would create “730 fatal cancers, nonfatal cancers, and severe hereditary effects per 10,000 person”s?
32. The continued lack of analysis and discussion of security against terrorist threats in Section 5.10 is a major omission. This subject is clearly part of today’s “human environment”. I would argue that terrorism is not an “accident”. Terrorist attacks are deliberate and numerous. The proximity to DC could make North Anna an attractive target. Even FBI Director Mueller has stated that a terrorist attack on a nuclear facility can be “postulated”.
33. Section 5.10 should include a worst case analysis for low-probability events.
34. A common-language summary of section 5.10.2 is required.
35. The statement on page 5-69 line 40 that “alternatives to mitigate severe accidents are not resolved” is incongruous with the SMALL impact determination. Since the ESP is designed to address site-specific issues, these must be resolved now, not at the COL stage as is suggested by page 5-70 line 2.
36. The reactors will create approximately 20 MT/year of nuclear waste. It is imprudent to issue an ESP until detailed plans for safe waste management, transport, and disposal are in place. This is not elaborated in Section 6
37. Section 6.3 mentions that decommissioning would eventually be required and “reduction of residual radioactivity to a level that permits termination of the NRC license”. Has this been successfully done anywhere in the US? What financial security does the operator post to assure successful decommissioning?
38. There should be a Section 7.8.B that discusses the cumulative radiologic impacts of emergency situations (accidents and terrorism). Casual discussion in 7.8 of normal operations is insufficient treatment for this potentially devastating situation.
39. As previously commented, the alternative section of the EIS (in contrast to that of an ER) needs to assess other alternatives beyond siting such as renewables, demand side management, repowering of Units #1 and #2, etc.

40. Since water is a critical concern, among the major alternatives that should be considered in detail in Chapter 8 are the retrofitting of a cooling tower to Units #1 and/or #2, and the application of a dry cooler to Unit 3. Factors in the analysis such as capital and operating costs and operating efficiencies should be detailed. The conclusion on page 8-5 line 23 is not supported.
41. Since Chapter 8 should address system design alternatives (page 1-10, line 38) the EIS should include consideration in section 8.2 for locating potentially vulnerable facilities (such as fuel and waste storage) underground to mitigate against terrorist attack or aviation accident.
42. Page 1-5 states that an EIS must include an evaluation of alternative sites to determine whether there are any obvious superior alternatives. Although Chapter 9 determines that there are none, it also does not show that the Lake Anna site is clearly superior to many of the alternatives.
43. Table 10-1 acknowledges that increased traffic congestion is unavoidable. This is not congruous with the SMALL impact determination.
44. Table 10-2 should include an assessment of traffic similar to Table 10-1. Presently, this would also conclude that increased traffic congestion is unavoidable.
45. Overall, the mitigations listed in Section 10 are insufficient. Items such as “consider” plume abatement measures are just one example. Plume abatement should be implemented. Major contributions to construction of a reliable road network are required. Financial contributions to neighboring counties to alleviate the housing, school, and health care burdens of the project should be implemented.
46. The cooling tower will shift much of the thermal load from Lake Anna to the atmosphere. Shouldn’t mitigation be required to minimize heat island and climate change impacts? Such mitigation could include tree planting and similar regional measures.
47. The determination in Table 10-3 and elsewhere that the impacts on water use and quality is “likely to be SMALL” is unsubstantiated. As was clear from the last public hearing, the public’s perception is that the impacts are LARGE.
48. Shouldn’t Appendix F or L or the socioeconomic section of the text include mention of the resolution passed by Spotsylvania County against the project and the ESP?
49. For a project of this magnitude it seems that one public hearing in one location is insufficient to provide the public a real opportunity to get educated and provide comments. Limiting the public hearings to evening hours excludes the participation of those who work evenings. Limiting the public hearings to the Louisa location

makes it difficult for those who live in other localities within the affected area to attend.

50. Based on the above review, I believe that the SDEIS is substantially flawed and request that these comments and others be fully addressed and that another DRAFT EIS be released. Unless such an action is taken, concerned citizens and local governments (and indeed the NRC itself, since it is supposed to be relying on the DEIS for decision-making) cannot make informed decisions about the proposed project.

51. The flaws in the SDEIS and DEIS do not provide the scientific, legal, or policy background to support a finding to recommend the ESP.

I am available to clarify any of these comments. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Aviv Goldsmith', written over a horizontal line.

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