

April 10, 2003

To: Virginia Electric and Power Company

From: Stephen Monarque, Project Manager Directorate II, Section 1, Division of Licensing Project Management, Office of Nuclear Reactor Regulation /RA/

Subject: DRAFT REQUEST FOR ADDITIONAL INFORMATION TO SUPPORT CONFERENCE CALL ON EXTENSION OF VITAL BUS INVERTER COMPLETION TIME, NORTH ANNA POWER STATION, UNITS 1 AND 2 (TACs NOS MB6957 AND 6958)

The NRC staff is providing these questions to you to support a conference call scheduled for Thursday April 10, 2003.

1. The Tier 2 evaluation states that there are no single components with the unit at power per the TS, when allowed to be out of service concurrent with an inverter would result in a significant change in risk (i.e., increase in RAW greater than 10% for components with a RAW of 2.) Confirm that no basic event RAW value previously considered not risk significant (RAW less than 2) increased to 2 or greater with an inverter completion time of 14 days.
2. What are the risk impacts for a loss of offsite power event with or without a vital AC inverter available?
3. The proposed license amendment discussion on external events is limited to the seismic evaluation of the voltage regulating transformers. Provide additional discussion with respect to seismic, fire, high winds, floods and other external events and their impact on the proposed inverter completion times.
4. For the base case risk analysis the inverter maintenance failures were set to "zero." Did the analysis assume recovery of the inverter? Describe how common cause factors were accounted for in the inverter risk analysis for inverter failure probabilities when set to true or false.
5. Are the replacement U-2 regulating voltage transformers seismically qualified? Will future replacement transformers be seismically qualified? Will future replacement inverters include an automatic transfer feature to the voltage regulating transformers upon loss of power?
6. List plant tools, techniques and procedures used in evaluating the configuration risk (Tier 3) per 10 CFR50.65(a)(4).
7. With a new equipment installation is the assumption of only one 14 day outage per refueling cycle adequate? If 14 days is used for the installation what is the probability that additional time for maintenance will be required due to new inverter performance, surveillance, or operability concerns.
8. No discussion of cumulative risk was presented in the submittal. Are there other recent or pending applications that would affect the results shown for a 14 day inverter CT? Does the PRA analysis included in the submittal reflect these changes?

9. Provide a discussion on the applicability of the Unit 1 analysis to Unit 2.
10. Discuss how the values for baseline ICCDP, Δ CDF Δ LERF and ICLERP stated in the submittal are consistent with the methodology given in RG 1.174 and RG 1.177 in that the baseline CDF states the nominal expected equipment unavailabilities are used.
11. What is the Base CDF (nominal equipment out of service) for North Anna? The IPE data base indicates an estimated core damage frequency of 7.1E-5/r-y from internally initiated events. Provide background on the IPE results with respect to the baseline result estimated at 1.083E-5/r-y shown in the submittal.
12. Provide expanded discussion of the scope, level of detail of the North Anna PRA including the applicability of the North Anna PRA in assessing the proposed inverter AOTs. Provide a discussion on the programs to update and maintain the North Anna PRA to reflect current plant as-built conditions. With respect to peer review, provide additional details on the guidelines used and organizations employed.
13. Was generic data or plant specific data (inverters, transformers) used in the evaluation of the risk impact of the proposed CT?
14. Is there cross-tie capability from the other North Anna unit for the 120v vital AC bus?
15. Were the risk impacts of diesel generators including diesel generator maintenance evaluated with respect to the proposed completion times? DG completion times, for example?

Adams: ML031000228