April 1, 2003

To: Virginia Electric and Power Company

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

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - FACSIMILE TRANSMISSION OF QUESTIONS FOR PROPOSED TECHNICAL SPECIFICATIONS CHANGES AND EXEMPTION REQUEST, USE OF FRAMATOME ANP ADVANCED MARK-BW FUEL (TACS MB4700, MB4701, MB4714, AND MB4715)

A facsimile of the attached questions was transmitted on March 31, 2003 to Mr. Tom Shaub of Virginia Electric and Power Company (VEPCO). These questions were transmitted in order to allow VEPCO to determine the response time needed to address this request for additional information.

Adams: ML030910434

DRAFT
REQUEST FOR ADDITIONAL INFORMATION
FOR NORTH ANNA POWER STATION, UNITS 1 AND 2

Attachment 2

1. Page 2, The reactor core SL has two different fuel centerline melt correlations based on the different vendor fuel types. Please provide the data used to develop and justify the Framatome fuel melt temperature line.

2. Page 25, Under the control rod drop times section, the submittal makes a comparison between the Advanced Mark BW and Westinghouse LOPAR. Have you used the LOPAR fuel design previously? And if so, what type of control rod drop times were experienced.

3. Page 26, The maximum grid impact forces for the SSE conditions are referred too. Please state what the maximum grid impact force was and how it relates to the allowable elastic limit.

4. Page 26, when will the LOCA evaluation of section 7.0 be submitted?

5. Page 27, The submittal states that the TACO3 code is only licensed to 60,000 MWD/MTU and that North Anna has a peak pin burnup limit of 60,000 MWD/MTU. Please clarify these statements.

6. Page 27, The fuel rod cladding stress is stated as using conservative values, please define what condition is meant by conservative values for all the cladding parameters listed.

7. Page 29, In the section on fuel rod cladding strain, it discusses the calculated allowable linear heat rates and mentions that they are topically not limiting. What is meant by typically not limiting? Are they limiting some times? Under what conditions?

8. Page 31, Under the section for fuel rod cladding creep collapse, what is the fuel rod creep collapse lifetime? How close is the burnup limit to this calculated lifetime?

9. Page 32, Under the section for the fuel rod internal pressure, it states that pin power history and axial flux shapes were generated using Framatome approved methodologies with Dominion's NRC approved codes. Could you please provide references for these approved methodologies and approved codes? Also, please clarify if these approvals were for methodologies that are code independent and if the codes were approved independent of a methodology.

10. Page 42, The last paragraph under DNB Correlations states that the BWU-Z correlation is used above the mid-span mixing grids with an enhancement factor. Please describe the enhancement factor.

11. Page 42, Please explain how the data base for the BWU-Z correlation extends it range of application?

12. Page 43, please describe how the grid form loss coefficients are analytically determined?

13. Page 50, please provide details on the maximum span-average cross flow velocities, including the margin between the calculated and the limit.

14. Page 50, please provide the reference for the Framatome Statistical Core Design methodology.

15. Page 51, Please provide additional information on the exceptions to using a full power radial power distribution factor limit of 1.587 and how these exceptions were determined.

16. Page 73, Please describe how the peak ejected Fq and ejected rod reactivity parameters were modified for the EOC HP case.

17. Page 114, The statement is made that the axial flow differences in the IBDCF tests are much larger than expected in North Anna Units 1 and 2 between a NAIF and an Advanced Mark BW. Please explain why?