March 2, 2004

MEMORANDUM TO: John A. Nakoski, Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - FACSIMILE TRANSMISSION OF REQUEST FOR ADDITIONAL INFORMATION ON PROPOSED TECHNICAL SPECIFICATION CHANGES TO IMPLEMENT ALTERNATE SOURCE TERM (TAC NOS. MC0776 AND MC0777)

A facsimile of the attached questions was transmitted on February 25, 2004, to Mr. Tom Shaub of Virginia Electric and Power Company (VEPCO). These questions will be discussed in a conference call with the licensee at a future date concerning the licensee's proposed license amendment dated September 12, 2003. This memorandum and the attached questions do not convey or represent an NRC staff position regarding the licensee's request.

Docket Nos. 50-338 and 50-339

Attachment: Request for Additional Information

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REQUEST FOR ADDITIONAL INFORMATION
NORTH ANNA POWER STATION UNITS 1 AND 2
PROPOSED IMPLEMENTATION OF ALTERNATIVE SOURCE TERM

In its letter dated September 12, 2003 (ML032670821), Virginia Electric and Power Company (the licensee) proposed a license amendment and corresponding technical specification changes based on the application of an Alternative Radiological Source Term (AST) methodology for North Anna Power Station Units 1 and 2. The NRC staff is evaluating the containment spray iodine removal coefficients during a postulated loss-of-coolant accident. In order to complete its review, the NRC staff requests that the licensee provide a response to questions 1 through 3 below.

1. The NRC staff review includes calculations of spray removal coefficients (λ) using the methodology in Standard Review Plan (SRP) 6.5.2. These formulas are based on mass-mean diameter of the spray drops. The Updated Final Safety Analysis Report (Revision 38, page 6.2-82) provides volume-median diameter of the spray drops for each system. Please provide mass-mean diameter values for droplets from the quench and recirculation spray nozzles, or the methodology used to convert from the volume-median values.

2. The license amendment proposal (page 27) states that containment spray removal rates for aerosol fission products were calculated using the methodology of NUREG/CR-5966. One of the parameters in this methodology is water flux (Q). Please provide the water flux values used to calculate the aerosol iodine removal coefficients, and explain how these water flux values were determined.

3. Please explain the basis for the time intervals used in the determination of spray removal coefficients for particulate iodine (Table 3.1-5, page 28 of the submittal). Time is not an explicit variable in the NUREG/CR-5966 or SRP 6.5.2 methodologies for evaluating iodine spray removal.

In addition, as part of this license amendment review, the licensee is requested to provide a response to the questions below concerning emergency planning and radiological training.

1. Section 2.2 of the submittal dated September 12, 2003, states that, beyond 100 hours after shutdown, Improved Technical Specification 3.9.4 no longer applies, and that although "the capability to close the equipment hatch is maintained," the hatch closure will "only be accomplished as allowed by containment dose rates." Describe the worker criteria that will be used to determine what is a "personnel radiological hazard" that precludes closing the equipment hatch.

2. Describe the radiation protection job planning and job-site coverage, and the radiation surveys/personal protection and dose monitoring equipment that will be provided to the crew during this emergency response action. Describe the initial (and continuing) radiological training that will be provided, including whether the crew workers will be qualified and trained to use respiratory protection devices or other means to limit intake of radioactive materials.

3. Will North Anna Power Station's Emergency Plan be updated to include this accident scenario? Will the applicable Emergency Operating Procedures be updated to address the

specific details needed to respond to this accident scenario? Does the licensee's radiological dose assessment methodology include the ability to assess this accident (source term, release flow rate out of containment, meteorology, feedback via Field Monitoring Health Physics Survey Teams)?

4. Has the need for special radiological monitoring or survey equipment (i.e., in-plant equipment or field team survey equipment to assess the radiological conditions of this accident scenario) used to meet General Design Criterion 64 been evaluated? Will Emergency Response Personnel training be revised to deal with this accident scenario?

5. Have alternate means been considered for stopping a release through the open equipment hatch opening during a fuel-handling accident? Has this accident scenario been communicated with the State Emergency Response personnel?