

April 19, 2001

Mr. David A. Christian  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

SUBJECT: NORTH ANNA POWER STATION, UNITS 1 AND 2 - ENVIRONMENTAL  
ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO  
REQUEST FOR AMENDMENTS TO INCREASE FUEL ENRICHMENT AND  
SPENT FUEL POOL SOLUBLE BORON AND FUEL BURNUP CREDIT  
(TAC NOS. MB0197 AND MB0198)

Dear Mr. Christian:

Enclosed is a copy of the "Environmental Assessment and Finding of No Significant Impact" related to your application for amendments dated September 27, 2000, as supplemented November 21 and December 18, 2000, and February 2 and March 2, 2001. The proposed amendments would change the Technical Specifications (TS) for the North Anna Power Station, Units 1 and 2, to increase the limit on the fuel enrichment from the current limit of 4.3 weight percent  $U^{235}$  to a maximum of 4.6 weight percent  $U^{235}$ , establish TS Limiting Conditions for Operations for the Spent Fuel Pool (SFP) boron concentration and fuel storage restrictions, and eliminate the value of uncertainties in the calculation for  $K_{eff}$  in the SFP criticality calculation.

The assessment is being forwarded to the Office of the *Federal Register* for publication.

Sincerely,

**/RA/**

Stephen R. Monarque, Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure: Environmental Assessment

cc w/encl: See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSIONVIRGINIA ELECTRIC AND POWER COMPANYDOCKET NOS. 50-338 AND 50-339NORTH ANNA POWER STATION, UNITS 1 AND 2ENVIRONMENTAL ASSESSMENT AND FINDING OFNO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an amendment to Facility Operating License Nos. NPF-4 and NPF-7, issued to Virginia Electric and Power Company (the licensee), for operation of the North Anna Power Station, Units 1 and 2, located in Louisa County, Virginia.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action:

The proposed action would increase the limit on the fuel enrichment from the current limit of 4.3 weight percent  $U^{235}$  to a maximum of 4.6 weight percent  $U^{235}$ , establish boron concentration and fuel storage restrictions for the Spent Fuel Pool (SFP), and eliminate the value of uncertainties in the calculation for  $K_{eff}$  in the SFP criticality calculation. The proposed action is in accordance with the licensee's application for amendments dated September 27, 2000, as supplemented November 21 and December 18, 2000, and February 2, and March 2, 2001.

The Need for the Proposed Action:

The proposed action to increase fuel enrichment will reduce the need for extended periods of reduced power operation at the end of each operating cycle and permit fuel discharge burnups more compatible with the current maximum rod burnup limit of 60,000 MWD/MTU. This action will

help optimize fuel cycle costs while satisfying the safety limits. Currently, Technical Specification (TS) 5.3, "Reactor Core," limits the use of reload fuel to a maximum enrichment of 4.3 weight percent  $U^{235}$ . Thus, the proposed change to the TS was requested.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes that the storage and use of fuel enriched with  $U^{235}$  up to 4.6 weight percent at North Anna Power Station, Units 1 and 2, is acceptable. The safety considerations associated with higher enrichments have been evaluated by the staff, and the staff has concluded that such changes would not adversely affect plant safety. The proposed changes have no effect on the probability of any accident. There will be no change to the authorized power level. There is no change to the allowable maximum rod burnup limit of 60,000 MWD/MTU, already approved for North Anna Power Station, Units 1 and 2. As a result, there is no significant increase in individual or cumulative radiation exposure.

The environmental impacts of transportation resulting from the use of higher enrichment fuel and extended irradiation are discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation." This assessment was published in the FEDERAL REGISTER on August 11, 1988 (53 FR 30355), as corrected on August 24, 1988 (53 FR 32322), in connection with the Shearon Harris Nuclear Power Plant, Unit 1, Environmental Assessment and Finding of No Significant Impact. As indicated therein, the environmental cost contribution of an increase in fuel enrichment of up to 5.0 weight percent  $U^{235}$  and irradiation limits up to 60,000 MWD/MTU are either unchanged, or may in fact be reduced from those summarized in Table S-4 as set

forth in 10 CFR 51.52(c). Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed changes involve systems located within the restricted area as defined in 10 CFR Part 20. The proposed action does not involve any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

#### Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

#### Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement - Operating License (FES-OL), dated April 1973 for the North Anna Power Station.

#### Agencies and Persons Consulted:

In accordance with its stated policy, on March 22, 2001 the staff consulted with the Virginia State official, Mr. Les Foldesi of the Virginia Department of Health regarding the environmental impact of the proposed action. The State official had no comments.

#### FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action

will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed amendments.

For further details with respect to the proposed action, see the licensee's letter dated September 27, 2000, as supplemented November 21 and December 18, 2000, and February 2 and March 2, 2001. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Electronic Reading Room).

Dated at Rockville, Maryland, this 19th day of April, 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

Stephen R. Monarque, Project Manager, Section 1  
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North Anna Power Station  
Units 1 and 2

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