

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

February 27, 1992

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Serial No. 92-042A  
NL&P/JBL: R1  
Docket No. 50-338  
License No. NPF-4

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY  
NORTH ANNA POWER STATION UNIT 1  
EMERGENCY TECHNICAL SPECIFICATION CHANGE REQUEST

By letter dated January 28, 1992, we proposed a change to the operating license for North Anna Unit 1 to limit maximum reactor power to 95% of rated thermal power for an interim period of operation until steam generator replacement. The proposed change also imposed more restrictive Technical Specification requirements for equipment operability for the Emergency Core Cooling System (ECCS). Due to unforeseen circumstances, we now request that this submittal be processed on an emergency basis because an emergency situation, as defined in the regulations, exists.

North Anna Unit 1 shut down on December 23, 1991 to conduct an unplanned steam generator inspection outage. That inspection has been completed ahead of schedule and the unit is now planning to commence unit startup on March 3, 1992, contingent on NRC approval. The proposed license amendment was noticed in the February 5, 1992 Federal Register. However, the thirty day comment period does not expire until March 6, 1992, three days after the scheduled startup date. So as to not prevent resumption of power operation, we request that the license amendment be issued to support this startup date.

We have determined that the proposed change meets the criteria in 10 CFR 50.91(a)(5) for an emergency situation. The basis for that determination is provided in Attachment 1. In addition, our January 28, 1992 submittal provided our evaluation for the determination that the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92. The emergency aspect of this request does not alter the no significant hazards consideration determination provided in the original submittal. The basis for that determination is provided in Attachment 2.

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Should you have any questions or require additional information, please contact us immediately.

Very truly yours,



W. L. Stewart  
Senior Vice President - Nuclear

Attachments

cc: U.S. Nuclear Regulatory Commission  
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Commissioner  
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ATTACHMENT 1

BASIS FOR EMERGENCY CHANGE REQUEST  
FOR  
NORTH ANNA UNIT 1

VIRGINIA ELECTRIC AND POWER COMPANY

## **Basis for Emergency Change Request**

NRC regulations (10 CFR 50.91(a)(5)) require that whenever an emergency situation exists, a licensee must explain why this emergency situation occurred and why it could not avoid this situation, and the Commission will assess the licensee's reasons for failing to file an application sufficiently in advance of that event. An emergency situation exists when the Commission's failure to act in a timely way would result in derating or shutdown of a nuclear plant, or in prevention of either resumption of operation or of increase in power output up to the plant's licensed power level. In such cases, the Commission may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment. Also, in such cases, the regulations require that the Commission be particularly sensitive to environmental considerations. Our discussion of why this proposed change meets the conditions necessary for emergency consideration is provided below.

### Why Emergency Situation Occurred and Could Not Be Avoided

North Anna Unit 1 has been involved in a mid-cycle steam generator tube inspection outage since the unit was shut down on December 23, 1991 for an unplanned outage. As a result of the inspections conducted during the outage, substantially increased tube plugging levels were expected. It was determined that changes to the Technical Specifications and the Facility Operating License would be necessary to support continued operation of North Anna Unit 1 with the projected level of tube plugging. This proposed change was submitted on January 28, 1992. At that time, the unit was scheduled to conclude the steam generator inspections and commence startup not later than March 20, 1992. We prepared and submitted the required change in a timely manner. At the time of submittal, the startup schedule provided ample time for NRC to process the request as a routine amendment with a full thirty day comment period.

However, the steam generator tube inspection and plugging processes have been performed more rapidly than expected and North Anna Unit 1 is now scheduled to start up on March 3, 1992, pending NRC approval. The Federal Register Notice on the proposed license amendment was published in the February 5, 1992 Federal Register. The thirty day comment period does not expire until March 6, 1992. In as much as NRC approval of this proposed change is required prior to resumption of power operation, the failure to issue this amendment by March 3, 1992 would result in preventing North Anna Unit 1 from resuming power operations.

### Why Emergency Situation Exists

North Anna Unit 2 was shut down on February 26, 1992 and Surry Unit 1 is scheduled to shutdown on February 28, 1992. If the amendment is not issued to support a timely startup of North Anna Unit 1, Virginia Electric and Power Company could be faced with a potentially adverse power supply situation with three of the Company's four nuclear units out of service. The need for adequate generating base load capacity during the winter months is more critical for power supply purposes. Preventing the resumption of Unit 1 power operation could constitute an emergency situation.

Also, as discussed in Attachment 2, we have determined that the proposed change involves no significant hazards consideration. Therefore, we conclude that the condition in 10 CFR 50.91(a)(5) regarding issuance only of license amendment involving no significant hazards consideration is met.

#### Environmental Considerations

The regulations (10 CFR 50.92(b)) state that the Commission will be particularly sensitive to a license amendment request that involves irreversible consequences (such as one that permits a significant increase in the amount of effluent or radiation emitted by a nuclear power plant). The proposed changes reduce the maximum reactor power level and impose more restrictive equipment operability requirements for the Emergency Core Cooling System as a result of the increases in steam generator tube plugging. As such, the proposed change involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. Hence, no irreversible consequences are involved. Based on the above, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed change.

ATTACHMENT 2

10 CFR 50.92

NO SIGNIFICANT HAZARDS CONSIDERATION  
EVALUATION

VIRGINIA ELECTRIC AND POWER COMPANY



**10 CFR 50.92**  
**No Significant Hazards Consideration Evaluation**

In accordance with the requirements of 10 CFR 50.91(a), the proposed change to the North Anna Power Station Unit 1 Facility Operating License has been evaluated against the criteria described in 10 CFR 50.92 and it has been determined that the proposed amendment to the operating license involves no significant hazards consideration. The basis for this determination is as follows:

North Anna Power Station Unit 1 is currently involved in a mid-cycle steam generator inspection outage. An extensive eddy current inspection of the North Anna Unit 1 steam generator tubes is being performed using very conservative analysis guidelines and plugging criteria. As such, a substantially increased number of tubes are expected to be plugged.

The predictions of potential steam generator tube plugging during the current mid-cycle outage are such that the effects of increased RCS loop resistance on the large break LOCA analysis would not permit full rated power operation for the remainder of North Anna Unit 1, Cycle 9. The existing large break LOCA analysis has obtained margin by taking credit for available Cycle 9 core characteristics and will not support 100% power operation with more than 30% steam generator tube plugging. The large break LOCA analysis presented in Sections 3.0 through 5.0 of the attached safety evaluation extends this steam generator tube plugging limit value to 35%, but with a reduced power level of 95% of rated thermal power. At this reduced power level, all analyses meet the requirements of 10 CFR 50.46 and Appendix K to 10 CFR Part 50.

Because the large break LOCA presents the limiting considerations for core power and total core power peaking, it was necessary to reduce the maximum core power level to 2748 megawatts (thermal) and the maximum allowable Hot Channel Peaking Factor ( $F_q$ ) to 2.11 at the core mid-plane. The change to the power level is proposed as a modification to license condition 2.D.(1), Maximum Power Level, by adding a footnote limiting maximum reactor power to 2748 megawatts (thermal) until steam generator replacement is accomplished.

In addition, an associated change to the Technical Specifications is required to accommodate the effects of the revised assumptions for the large break LOCA analysis. The proposed change to the Technical Specifications will impose more restrictive equipment operability requirements for the Emergency Core Cooling System (ECCS). This is accomplished by modifying the Action Statement "a" of Specification 3.5.2 to ensure that both low head safety injection pumps or one low head injection pump and two high head safety injection pumps remain operable during power operation. This change effectively maintains consistency between the Technical Specification Action Statements and the revised assumptions for the large break LOCA analysis.

Further, a revised K(Z) surveillance function and a reduced Enthalpy Rise Hot Channel Factor were utilized to provide additional analysis margin. With these changes, the analysis supports power operation at up to 95% of rated thermal power for North Anna Unit 1 for the remainder of Cycle 9. Changes to the peaking factor and K(Z) surveillance function will be accomplished via the Technical Specifications Core Operating Limits Report (COLR).

The large break LOCA analysis assumed uniform steam generator tube plugging of 35% which supports operation with peak steam generator tube plugging levels up to 35%. With the exception of the parameters described above, which will be incorporated via the proposed license change and the forthcoming COLR, all analysis parameters were equivalent to, or conservative with respect to, those assumed in the existing analyses. All analysis parameters are expected to be conservative with respect to actual plant conditions for the remainder of North Anna Unit 1 Cycle 9.

Finally, the actual steam generator tube plugging results are substantially less than those originally projected and are well within the analyses limits described above.

Virginia Electric and Power Company has reviewed the proposed license condition change relative to operation of North Anna Unit 1 with increased steam generator tube plugging and determined that the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92. The basis for this determination is that this change:

1. Does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The impact of the increased level of steam generator tube plugging (up to 35% peak) with a maximum reactor power of 95% on the large break LOCA was analyzed. The analysis demonstrated that operation with increased steam generator tube plugging will not result in more severe consequences than those of the currently applicable analyses.

The probability of occurrence of these accidents is not increased, because an increased level of steam generator tube plugging as an initial condition for the accident has no bearing on the probability of occurrence of these accidents.

2. Does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The implementation of the increased steam generator tube plugging large break LOCA analysis into the North Anna Unit 1 design basis will not create the possibility of an accident of a different type than was previously evaluated in the UFSAR. No changes to plant configuration or modes of operation are implemented by the revised accident analysis. Therefore, no new mechanisms for the initiation of accidents are created by the implementation of the analysis.

3. Does not involve a significant reduction in a margin of safety.



The North Anna Unit 1 operating characteristics, and accident analyses which support Unit 1 operation, have been fully assessed. The results of the revised large break LOCA analysis demonstrates that the consequences of this accident are not increased as a result of the increased steam generator tube plugging up to 35% with a maximum reactor power of 95%. The results of the accident analysis remain below the limits established by the currently applicable analyses. Therefore, there is no significant reduction in the margin of safety.

Finally, the actual steam generator tube plugging results are substantially less than those originally projected and are well within the analyses limits assumed in the analysis.

Based on the above significant hazards consideration evaluation, Virginia Electric and Power Company concludes that the activities associated with this proposed license condition change satisfies the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.