

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 10, 2000

U. S. Nuclear Regulatory Commission
Attention Document Control Desk
Washington, D. C. 20555-0001

Serial No. 00-522
SS&L/BAG R0
Docket No. 50-280
License No. DPR-32

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 1
AUXILIARY VENTILATION EXHAUST FILTER SYSTEM
REQUEST FOR ENFORCEMENT DISCRETION

Pursuant to NUREG-1600, Enforcement Policy, Section VII.C, Virginia Electric and Power Company requests the NRC to exercise enforcement discretion regarding compliance with Technical Specification (TS) 3.22.B, Auxiliary Ventilation Exhaust Filter Trains. The enforcement discretion will permit continued operation beyond the current 7-day allowed outage time (AOT) for an inoperable train of the Auxiliary Ventilation Exhaust Filter System. Information needed to support the review of the requested enforcement discretion is provided as an attachment.

On October 3, 2000, both filter exhaust fans in the Auxiliary Ventilation Exhaust Filter System tripped during TS required functional testing. After extensive troubleshooting and modification of the fan start circuit, both filter exhaust fans automatically started during functional testing, but one fan continued to operate near its suction pressure trip setpoint, which eventually resulted in a fan trip on low suction pressure. The fan was placed in pull-to-lock (PTL) and considered inoperable. TS 3.22.B requires the operating unit to be placed in Hot Shutdown after a 7-day allowed outage time for an inoperable train of the exhaust filter system. Therefore, in order to avoid an unnecessary plant transient (e.g., a Unit 1 plant shutdown), we are requesting enforcement discretion to permit continued operation of Unit 1 with a single train of the Auxiliary Ventilation Exhaust Filter System inoperable for an additional 10 days. This period will permit system repairs or modifications to return both trains to operable status.

This request for enforcement discretion was reviewed and approved by the Station Nuclear Safety and Operating Committee. It has been determined that no significant hazards consideration exists.

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In a telephone conference call between our staffs on October 10, 2000 beginning at 1000 hours, we requested enforcement discretion to extend the allowed outage time of TS 3.22.B, Auxiliary Ventilation Exhaust Filter Trains, for an additional 10 days. This enforcement discretion was verbally granted on this date and will expire upon repair, successful functional testing and return to service of both auxiliary ventilation trains, or on October 20, 2000 at 1356 hours, whichever occurs first.

Should you have any questions, please contact us.

Very truly yours,



W. R. Matthews
Vice President – Nuclear Operations

Attachment

Commitments contained in this letter: Compensatory measures detailed in Item 6 in the attachment.

cc: U. S. Nuclear Regulatory Commission
Region II
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Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

Attachment

Request for Enforcement Discretion from Technical Specification 3.22.B, Limiting Condition for Operation (LCO) For Auxiliary Ventilation Exhaust Filter System Operation

Surry Power Station Unit 1

1. Technical Specification(s) that will be violated

Technical Specification 3.22.A requires that whenever either unit's Reactor Coolant System temperature and pressure is greater than 350°F and 450 psig, respectively, two auxiliary ventilation exhaust filter trains shall be operable with:

- 1) Two filter exhaust fans;
- 2) Two HEPA filter and charcoal adsorber assemblies.

Technical Specification 4.12.A.2 requires the operability of the entire safety-related portion of the auxiliary ventilation exhaust filter system be demonstrated once per 18 months. The Technical Specification acceptance criteria 4.12.B.2 requires that the operability test specified in Technical Specification 4.12.A.2 demonstrate automatic start-up, shutdown and flow path alignment.

Technical Specification 3.22.B requires that with one train of the exhaust filter system inoperable for any reason, that the inoperable train be returned to an operable status within 7 days or the plant must be placed in at least Hot Shutdown within the next 6 hours and in Cold Shutdown within the following 48 hours. Currently, Unit 1 is in a 7-day action statement due to one fan being inoperable. The action statement will expire on October 10, 2000 at 1356 hours. Enforcement discretion is requested to extend the allowed outage time of one train of the exhaust filter system to permit repair, functional testing, and return to service of both filter exhaust fan trains.

2. The circumstances surrounding the situation, including the apparent root causes, the need for prompt action and identification of any relevant historical events

The Auxiliary Ventilation Exhaust Filter System is designed to automatically start two redundant exhaust fans and run them in parallel upon receipt of a safety injection signal. On October 3, 2000 at 1356 hours, testing was conducted as required by Technical Specification 4.12.A.2, to demonstrate automatic start-up, shutdown and flow path alignment as part of Emergency Safeguards Feature (ESF) functional logic testing. During testing, both auxiliary ventilation exhaust fans tripped after the initial automatic start from a safety injection (SI) signal. Troubleshooting determined that the apparent cause was that the exhaust fans were reaching their operating point before the supply

dampers in the suction path could fully open. The damper re-alignment and fan starting created a transient condition that exceeded the low suction pressure trip.

A formal root cause evaluation (RCE) has been initiated. The initial corrective action was to install a time delay relay in both fans' start circuitry to allow the suction path dampers to complete their full travel prior to fan start. During functional testing following this modification, both fans automatically started; then the 58A fan exhibited excessive flow oscillations, both fans approached their trip setpoints, and the 58B fan tripped on low suction pressure. The repair efforts subsequently corrected the flow control concerns. However, during subsequent testing, both fans continued to operate near their suction pressure trip setpoint.

Further repairs and functional testing efforts are expected to exceed the current allowed outage time and would require Unit 1 to be shutdown.

3. Safety basis for the request, including an evaluation of the safety significance and potential consequences of the proposed course of action.

The two trains of the auxiliary building ventilation exhaust filter system include the auxiliary ventilation exhaust fans, the charcoal and HEPA filter assemblies, and associated dampers and ducting. The purpose is to provide ventilation (cooling) to the safety-related equipment needed to mitigate a design basis accident (DBA), and filtration of the Auxiliary and Safeguards Building ventilation exhaust to maintain operator and offsite dose within regulatory limits. Each filter train alone is capable of providing the necessary ventilation and filtration requirements.

One operable auxiliary ventilation exhaust filter train will be maintained. In an accident condition, flowpaths from Unit 1 Safeguards and the Charging Pump cubicles will automatically align to the charcoal filters. The operating exhaust fan train will provide the necessary ventilation and filtration requirements. TS 3.0.1 will require Unit 1 to be placed in Hot Shutdown within 6 hours and in at least Cold Shutdown within the following 30 hours, if both trains become inoperable.

The auxiliary ventilation exhaust fans are explicitly included in the Surry Power Station probabilistic risk assessment (PRA) model and have been determined to be individually low risk significant components. The risk impact of operation with one inoperable fan for an additional 10 days has been quantified with the PRA model. The unavailability of one fan creates a slight increase (<1%) in the instantaneous risk of Core Damage Frequency (CDF) above the baseline value. The increase in the Large Early Release Frequency (LERF) was also calculated. No increase, within the limits of roundoff error, was observed. These results indicate that the risk impact of the current configuration, with one fan out of service for the additional 10 days, is negligible.

4. Basis for the conclusion that the noncompliance will not be of potential detriment to the public health and safety and a significant hazards consideration is not involved.

The proposed enforcement discretion for the Technical Specification described above does not result in a significant hazards consideration as defined in 10 CFR 50.92. Specifically, the proposed enforcement discretion does not:

- a) Involve a significant increase in the probability or consequences of an accident previously evaluated. The auxiliary ventilation exhaust filter system operates in response to accidents and cannot cause the accidents. Abnormal operation of the filter trains or failure to operate, affects only the consequences of an accident.

The accident most sensitive to the operation of these fans (automatic or otherwise) is the LOCA. The risk impact, as discussed above, indicates that the CDF for only one filter exhaust fan operable results in a slight (<1%) increase above the baseline value. The LERF was also evaluated and the results indicate that, within the limits of roundoff error, there is no increase in the frequency. The other dose applicable analyses (i.e., for the Steam Generator Tube Rupture, Main Steam Line Break, Locked Rotor Analysis, Volume Control Tank Rupture, and Waste Gas Decay Tank Rupture) do not rely on the safety related auxiliary ventilation system filtration because either the dose release point is outside the Auxiliary Building or no filtration is assumed in the analysis. In addition, the 58 fan issues will not affect the automatic accident filtration re-alignment in the event of a LOCA on Unit 1. Therefore, the request does not involve a significant increase in the probability or consequences of an accident or malfunction previously evaluated.

- b) Create the possibility of a new or different kind of accident from any accident previously evaluated. The auxiliary ventilation exhaust filter system operates in response to accidents and cannot cause the accidents. Abnormal operation of the filter trains or failure to operate, affects only the consequences of an accident. Therefore, the possibility of a new or different kind of accident is not created by extending the allowed outage time of having only one train of the exhaust filter system operable.

- c) Involve a significant reduction in the margin of safety. The filter trains are designed such that each train alone is capable of providing the required ventilation for heat removal and filtration of radioactive exhaust. One filter train will remain operable to provide the necessary cooling and filtration to mitigate the consequences of an accident. If both trains become inoperable, the unit will be shutdown in accordance with TSs. Therefore, extension of the allowed outage time for one train of the exhaust filter system being inoperable does not result in a significant reduction in the margin of safety.

5. Basis for the conclusion that the noncompliance will not involve adverse consequence to the environment

10 CFR 51.22(c) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. The proposed enforcement discretion meets the 10 CFR 51.22(c)(9) eligibility criteria for categorical exclusion as specified below:

This request does not involve a significant hazards consideration.

The proposed enforcement discretion does not change the types of any effluents that may be released offsite, nor create a significant increase in the amounts of any effluents that may be released offsite. The operable fan will provide the necessary ventilation and filtering requirements. If both fans become inoperable, the unit will be shutdown in accordance with TSs.

The proposed enforcement discretion will not result in a significant increase to the individual or cumulative occupational radiation exposure. The auxiliary ventilation system will continue to mitigate the effects of radioactivity following a DBA by exhausting potentially contaminated air through the Auxiliary Building charcoal filters. Each operable auxiliary ventilation exhaust filter train alone is capable of maintaining the dose to the operator and the public within regulatory limits.

Based on the above, it is concluded that there will be no impact on the environment resulting from the proposed enforcement discretion, and that the request meets the criteria of 10 CFR 51.22 for categorical exclusion from the requirements of 10 CFR 51.21 relative to requiring a specific environmental assessment by the Commission.

6. Compensatory measures

Heightened personnel sensitivity exists throughout the organization regarding the reliance on a single operable train. The following measures will be in place during the additional 10 days to ensure that one operable train of auxiliary ventilation is available at all times:

- a) Although the current work planning process assesses the safety impact of work activities, planned outage activities will be scrutinized to minimize challenges to the operable train of auxiliary ventilation. Particular emphasis will be placed on the availability of the normal (switchyard) and emergency power supplies for the operable fan, as well as work in the vicinity of the operable train components.

- b) Outage activities will be reviewed to ensure that the ability to implement alternate charging pump cooling on Unit 1 in accordance with Fire Contingency Action procedures is maintained.
- c) During fuel handling activities, no testing that could affect the operable train of auxiliary ventilation will be performed.

7. Justification for the duration of the noncompliance

The 7-day action statement for Unit 1 will expire on October 10, 2000 at 1356 hours and will require the operating unit to be shutdown.

This request for enforcement discretion for 10 additional days is necessary to provide time to perform the following actions related to the auxiliary ventilation exhaust filter system operability:

- a) Investigate the cause of the suction pressure trips, some of which are occurring prior to reaching the trip setpoint, and perform appropriate repairs,
- b) Review the structural analysis of the filter housings to identify additional suction pressure trip margin to permit adjustment of the trip setpoint,
- c) Based on the conclusions of item b), reanalyze and modify the filter housings to support adjustment of the trip setpoint,
- d) Evaluate system alignments to improve system suction pressure, obtain additional data to verify system flows, and evaluate the need for flow balancing, and
- e) Perform functional testing to verify system operability.

The discussions included in this request concluded that having one operable train of the auxiliary ventilation exhaust filter system does not involve a significant increase in the probability or consequences of an accident, does not create the possibility of a new or different kind of accident from previously evaluated, and does not involve a significant reduction in the margin of safety.

8. Statement that the request has been reviewed and approved by the Station Nuclear Safety and Operating Committee

The proposed enforcement discretion was reviewed and approved by the Surry Station Nuclear Safety and Operating Committee (SNSOC) on October 10, 2000.

9. The request must specifically address how one of the NOED criteria for appropriate plant conditions specified in Section B is satisfied

This request satisfies criterion B.2.1(a) of Part 9900 "Technical Guidance" of the NRC Inspection Manual, "Operations – Notices of Enforcement Discretion." Criterion B.2.1(a) states, "For an operating plant, the NOED is intended to avoid undesirable transients as a result of forcing compliance with license conditions and, thus, minimize potential safety consequences and operational risks." Granting this enforcement discretion will preclude the unnecessary shutdown of Unit 1.

10. If a follow-up license amendment is required, the NOED request must include marked-up Technical Specification pages showing the proposed TS change. The actual license amendment request must follow within 48 hours

The proposed enforcement discretion does not require a Technical Specification change.

11. Severe Weather or Other Natural Event Justification

The proposed enforcement discretion is not required because of any severe weather condition or any natural event.