

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 6, 1990

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 89-880
NL/RPC R3
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

We have reviewed your letter dated December 22, 1989, in reference to the NRC inspection conducted on October 29 - November 25, 1989, for Surry Power Station. The inspection was reported in Inspection Report Nos. 50-280/89-34 and 50-281/89-34. Our response to the violations described in the Notice of Violation is provided in Attachment 1.

Your letter expressed concern over the material condition of the process monitoring instrumentation. You requested that we address our program to assure that process monitoring equipment is maintained operable and outline specific actions being taken to return inoperable process instrumentation to service in an expeditious manner.

Operability of the process monitoring instrumentation is demonstrated periodically through the station's surveillance and testing program. If a component is found to be inoperable, alternative measures are employed to monitor the parameter in accordance with Technical Specifications and a station deviation is submitted. On December 21, 1989, a station deviation trending report was submitted to the Chairman of the Station Nuclear Safety Operating Committee (SNSOC), which discussed recurring problems with process radiation monitors. To more fully address these issues, the SNSOC established a subcommittee composed of senior technical staff members. The subcommittee has been tasked to review process radiation monitoring operations data sources, including equipment operability history, and to submit a report on its findings by February 28, 1990. Based on this report, SNSOC will assign further actions as appropriate. We are keeping the NRC Resident Inspectors informed of the progress and results of this review.

The project to replace and return the component cooling water (CCW) heat exchanger service water effluent monitors to operation is being implemented in conjunction with the ongoing project to replace the CCW heat exchangers. One of the four installed heat exchangers has been replaced and the installation of the associated service water effluent monitor is scheduled for completion in February 1990, subject to receipt of the remaining equipment. The next two CCW heat exchangers are scheduled for replacement during the Unit 1 refueling

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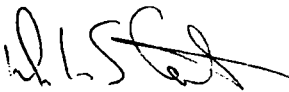
outage currently planned for the fourth quarter of 1990. The final CCW heat exchanger is scheduled for the second quarter of 1991. The alternative sampling measures specified by Technical Specifications will remain in effect until completion of the project.

In a telephone conversation between Mr. S. Shaeffer of the NRC Region II staff and Mr. D. Sommers of my staff, an extension of 15 days was granted for our reply to this Notice of Violation.

We have no objection to this inspection report being made a matter of public disclosure.

Should you have any further questions, please contact us.

Very truly yours,



W. L. Stewart
Senior Vice President - Nuclear

Attachment

cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Mr. W. E. Holland
NRC Senior Resident Inspector
Surry Power Station

ATTACHMENT 1

REPLY TO A NOTICE OF VIOLATION
REPORTED DURING THE NRC INSPECTIONS
ON OCTOBER 29 - NOVEMBER 25, 1989
INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

NRC Comment

During the Nuclear Regulatory Commission (NRC) inspection conducted on October 29 - November 25, 1989, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1989), the violations are listed below:

- A. 10 CFR 50, Appendix B, Criterion V, requires that activities affecting quality shall be prescribed by documented instructions or procedures appropriate to the circumstances.

Contrary to the above, activities affecting quality were not prescribed by adequate instructions and/or procedures, in that:

1. Operating Procedure, 2-OP-1.3, Unit Startup Operation (350/450 to HSD), Revision dated June 14, 1989, did not adequately caution the operators to maintain specific pressure control prior to testing reactor coolant system accumulator discharge valves. On November 21, 1989, during Unit 2 startup, operators allowed the reactor coolant system pressure to exceed 1000 psig, prior to opening and de-energizing the accumulator discharge isolation valve motor operators, a violation of Technical Specification 3.3.A.10.
2. On November 13, 1989, a resin waste transfer evolution was conducted without adequate procedure control resulting in three licensee employees being contaminated when a pipe cap was removed from a pressurized system.
3. On approximately October 25, 1989, the Unit 2 flood control dikes, which protect against flooding of the service water supply motor control valves to the recirculation spray heat exchangers, were removed with inadequate modification and operation procedure control resulting in heatup of the unit above 350^oF, on November 6 and 20, 1989, with inoperable recirculation spray systems, a violation of Technical Specification 3.4.

This violation has been categorized as a Severity Level IV violation (Supplement I) for Unit 2.

- B. 10 CFR 50, Appendix B, Criterion VII, requires that measures and controls shall be established to prevent the use of incorrect or defective material, parts, and components.

Contrary to the above, adequate measures were not established to prevent incorrect gaskets from being installed in components in that:

1. Work Order 87218, dated October 28, 1989, identified that an incorrect gasket had been installed in safety injection check valve 2-SI-79 during the previous outage. This condition had contributed to a failure of the valve to properly seat during subsequent unit operation.
2. Inspection of safety injection check valve 2-SI-91 in accordance with Engineering Work Request 89-684B, dated November 3, 1989, indicated that an incorrect gasket had been installed during the previous outage.
3. After interim corrective action was conducted for examples 1 and 2 above on November 1, 1989, incorrect gaskets were installed in a Unit 2 pressurizer safety valve on November 14, 1989, and subsequent review revealed potential incorrect gaskets in the Unit 1 pressurizer safety valves.

This violation has been categorized as a Severity Level IV violation (Supplement I) for Units 1 and 2.

- C. Technical Specification 3.7, Table 3.7.5(a) requires that grab samples be collected and analyzed at least once per 12 hours whenever radioactive liquid effluent monitoring instrumentation is out of service.

Contrary to the above, grab samples were not collected and analyzed at least once per 12 hours in that, on August 2, 1989, samples for the component cooling service water effluent line were collected and analyzed 30 minutes outside the required 12-hour timeframe.

This violation has been categorized as a Severity Level IV violation (Supplement I) for Units 1 and 2.

RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

A. 10CFR50, Appendix B, Criterion V, requires that activities affecting quality shall be prescribed by documented instructions or procedures appropriate to the circumstances. Contrary to the above, activities affecting quality were not prescribed by adequate instructions and/or procedures, in that:

1. Operating procedure, 2-OP-1.3, Unit Startup Operation (350/450 to HSD), Revision dated June 14, 1989, did not adequately caution the operators to maintain specific pressure control prior to testing reactor coolant system accumulator discharge valves. On November 21, 1989, during Unit 2 startup, operators allowed the reactor coolant system pressure to exceed 1000 psig, prior to opening and de-energizing the accumulator discharge isolation valve motor operators, a violation of Technical Specification 3.3.A.10.

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

The violation is correct as stated.

(2) REASON FOR VIOLATION

Upon completion of OP-7.1.1 (Leak Testing Accumulator Check Valves), the electricians were directed to reinstall the seal-in contacts for the motor operated accumulator discharge valves. While waiting for this step to be completed, the operations shift reviewed the procedure and decided to begin increasing RCS pressure. The shift had noted the "caution" prior to step 5.43 of 2-OP-1.3 which reads, "RCS pressure must remain less than 2000 psig until Step 5.62 is satisfied", and intended to be just below 2000 psig when arriving at step 5.62. However, when the operator closed the accumulator MOV in accordance with step 5.41, he realized that the RCS should have been maintained at less than 1000 psig to perform 2-PT-18.5 (Flushing of Sensitized Stainless Steel Piping - Emergency Borate and Accumulator MOV Cycling).

It is important to note that it has been our interpretation of Technical Specification 3.3.A.10 that the basis for the requirement (RCS pressure greater than 1000 psig when placing the accumulators in service and de-energizing the associated discharge MOVs) was to provide sufficient differential between RCS and accumulator pressures to avoid spurious injections. It is from this perspective that no violation of Technical Specifications was initially considered to have occurred as a result of this event. The event investigation focused on the violation of Operating Procedure 2-OP-1.3 when RCS pressure exceeded 1000 psig prior to completion of 2-PT-18.5.

(3) CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED:

The accumulator discharge valves were opened and their circuit breakers opened. RCS pressure was controlled per 2-OP-1.3 and 2-PT-18.5 was performed satisfactorily. The unit SRO and the unit RO were disciplined.

(4) CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS:

The steps in 2-OP-1.3 which are associated with the accumulator check valve test are being evaluated for inclusion in OP-7.1.1.

The "caution" prior to step 5.31 of the existing OP-1.3 which reads, "RCS pressure must not exceed 1000 psig until PT-18.5 is complete (Step 5.42). will be strengthened and added to OP-7.1.1.

Technical Specification 3.3.A.10 will be reviewed for potential clarification of both the specification and bases.

(5) THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance will be achieved on June 30, 1990 when the procedures are modified as described above.

RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

- A. 10CFR50, Appendix B, Criterion V, requires that activities affecting quality shall be prescribed by documented instructions or procedures appropriate to the circumstances. Contrary to the above, activities affecting quality were not prescribed by adequate instructions and/or procedures, in that:
2. On November 13, 1989, a resin waste transfer evolution was conducted without adequate procedure control resulting in three licensee employees being contaminated when a pipe cap was removed from a pressurized system.

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

The violation is correct as stated.

(2) REASON FOR VIOLATION:

The event occurred due to pressure in a section of the resin transfer header piping. An inservice leak test was performed on the header line on October 16, 1989. The procedure used is typically performed on piping as part of the Inservice Testing (IST) Program. Following the use of this procedure, the tested piping is returned to service and no instructions are provided for depressurization of the piping. However, the resin header line was not returned to service and the line could not be drained because decontamination support had not been provided. There was no documentation that the line was left in a pressurized condition, and this information was not provided to the appropriate supervisor. In addition, seat leakage on diaphragm valves on the upstream system piping may have contributed to the pressure in the header.

On November 13, 1989, while making final hose connections in preparation for transferring resin from the resin waste header to the receiving vessel, it was necessary to remove a cam-lock cap. The cam-lock fitting did not have an upstream isolation valve at the fitting which could be used for isolation while the hose connections were being made. The operators began the removal of the cam-lock fitting by opening one of the dog-ear connectors. The cap was manipulated in an attempt to relieve any pressure on the line. When no water was observed, the remaining connector was opened and the cap blew off spraying the employees with contaminated water.

The resin transfer procedure did not provide instructions or cautions on the correct operation of the cam-lock fitting. In addition, the procedure did not provide an appropriate level of detail for certain portions of the waste transfer process.

(3) CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED:

In accordance with station practice, the individuals involved prepared a report of the event and presented it to station management.

An additional instruction page for the operation of cam-lock type fittings was developed. This attachment will be used with evolutions utilizing cam-lock fittings, until permanent procedure changes can be completed.

The resin transfer header has been modified to provide an isolation valve upstream at the cam-lock fitting.

Resin transfer activities were suspended and no resin transfer activities will occur pending station safety committee (SNSOC) approval of a procedure providing the additional detailed steps for the evolutions involved in the transfer process.

(4) CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS:

A revision is being made to the procedure for resin transfers to provide more detailed instructions for the evolutions in the resin transfer process including instructions for cam-lock fittings.

A list of procedures that involve equipment using cam-lock fittings is being developed. These procedures will be revised to include appropriate cautions.

Since the lack of an appropriate inservice leak testing procedure may have contributed to the event, an additional testing procedure for inservice leak testing will be developed to include instructions for depressurization of the tested piping if it is not placed in service following the test.

(5) THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Resin transfers may resume when a revised procedure is approved by the SNSOC.

The procedure revisions covering the use of cam-lock fittings and the development of a procedure for inservice leak testing will be completed by June 30, 1990.

Full compliance will be achieved on June 30, 1990.

During review of this event and a subsequent event in January involving instrument air to this system, weaknesses were identified in the configuration control and modification turnover processes. Although not a direct contributor to the above violation, these weaknesses are being reviewed and applicable corrective actions initiated.

RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

A. 10CFR50, Appendix B, Criterion V, requires that activities affecting quality shall be prescribed by documented instructions or procedures appropriate to the circumstances. Contrary to the above, activities affecting quality were not prescribed by adequate instructions and/or procedures, in that:

3. On approximately October 25, 1989, the Unit 2 flood control dikes, which protect against flooding of the service water supply motor control valves to the recirculation spray heat exchangers, were removed with inadequate modification and operation procedure control resulting in heatup of the unit above 350⁰ F, on November 6 and 20, 1989, with inoperable recirculation spray systems, a violation of Technical Specification 3.4.

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

The violation is correct as stated.

(2) REASON FOR VIOLATION:

A Design Change was being implemented to replace portions of the Service Water piping and to install new 8" service water supply lines. A portion of the buried piping was routed just north of the service water valve pit containing the service water supply valves (2-SW-MOV-203A-D) to the recirculation spray heat exchangers. The original design and safety analysis had been prepared anticipating that the missile protection cover plates could be installed without affecting the dikes around the SW valve pit. However, the dikes created an interference when installing the plates, and a Field Change was issued revising the installation drawing to permit temporary removal and replacement of the dike wall "as required". UFSAR Appendix 9C on the flood control system was not complete in its description of the flood protection barriers, nor were the dikes physically labeled in the field to identify them as components of the flood control system. As a result, the flood protection significance of the dike components was overlooked, and the field change did not provide procedural steps to control this activity nor to limit the period during which the dike wall was removed.

(3) CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED:

- (a) The dikes were reinstalled on the same day the condition was identified.
- (b) The station flood protection dikes throughout the plant have been labeled with a cautionary legend.
- (c) A memorandum describing the incident and corrective actions to be taken to prevent recurrence of inadequate Field Change preparation and review was distributed to Design Engineering personnel on December 4, 1989.

(4) CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS:

The following corrective actions will be taken to avoid recurrence:

- (a) Information on the flood protection barriers will be included in the continuing training sessions for the Technical Support Staff to enhance general awareness of the need to maintain integrity of these barriers.
- (b) The UFSAR section on flood control will be reviewed and a change request processed to provide more complete information on the flood protection barriers.
- (c) An engineering review of the adequacy of testing and maintenance of flood control measures has been initiated.

(5) THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance will be achieved when the corrective actions identified in item (4) above are completed on September 30, 1990. The UFSAR change will be included in the annual update subsequent to September 30, 1990.

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INSPECTION REPORT NOS. 50-280/89-34 AND 50-281/89-34

- B. 10 CFR 50, Appendix B, Criterion VIII, requires that measures and controls shall be established to prevent the use of incorrect or defective material, parts, and components. Contrary to the above, adequate measures were not established to prevent incorrect gaskets from being installed in components in that:
1. Work Order 87218, dated October 28, 1989, identified that an incorrect gasket had been installed in safety injection check valve 2-SI-79 during the previous outage. This condition had contributed to a failure of the valve to properly seat during subsequent unit operation.
 2. Inspection of safety injection check valve 2-SI-91 in accordance with Engineering Work Request 89-684B, dated November 3, 1989, indicated that an incorrect gasket had been installed during the previous outage.
 3. After interim corrective action was conducted for examples 1 and 2 above on November 1, 1989, incorrect gaskets were installed in a Unit 2 pressurizer safety valve on November 14, 1989, and subsequent review revealed potential incorrect gaskets in the Unit 1 pressurizer safety valves.

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

The violation is correct as stated.

(2) REASON FOR VIOLATION:

Inaccuracies existed in certain aspects of model work orders in the area of parts and associated stock numbers required to perform the task. The model work orders were not subject to a formal control program and verification of the parts listed on the model work order were not performed by planning or maintenance personnel. This omission resulted in incorrect gaskets being installed in two (2) safety injection check valves (2-SI-79/2-SI-91) when model work order parts listings were used. Another incident occurred whereby wrong gasket material was installed on a Unit 2 pressurizer safety valve due to the same inadequacies.

(3) CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED:

Upon initial discovery of wrong material installation on certain safety related components, an investigation was performed within the maintenance department. The problem was determined to be inadequate parts verification prior to job implementation. The information concerning parts listed on the model work order was being incorrectly assumed as being correct. Once this problem was identified, an interim verification of parts for safety related work was established. The corrective steps taken by the Maintenance Department were as follows:

- a. Development of an "Engineering Parts Validation Program" which established the process whereby engineering personnel ensure that

correct parts/components (with regard to technical data and materials) are installed in the respective system per design and licensing requirements. This program applies to safety related and non-safety related (with special regulatory significance) work orders. Implementation of this "Validation Program" was effective on November 1, 1989. The Maintenance Engineering Department currently performs this function.

- b. Since the implementation of the parts validation process, there was the one instance referenced in the violation where the Maintenance Department inadvertently installed wrong gaskets in a Unit 2 pressurizer safety valve. At that time, the validation process was still in the initial stages, and it is felt that the incident was an isolated case. The validation process of parts verification now is very closely controlled. Since the incorrect gasket installation on November 14, 1989, there have been no identified cases of incorrect parts usage.

(4) CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS:

Concerning the Unit 1 Pressurizer Safety Valves and the possibility of incorrect gasket material being installed, the safety significance of this configuration has been evaluated and determined to be acceptable for continued operation. Work requests will be submitted to remove valves and inspect/replace gaskets as necessary to ensure the correct gasket type is installed. This replacement of gaskets will be performed at the next refueling outage.

(5) THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance with regard to programmatic changes for parts validation measures was achieved on November 15, 1989, although the pressurizer safety valve gasket concern on Unit 1 will be resolved during the upcoming refueling outage.

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C. Technical Specification 3.7, Table 3.7.5(a) requires that grab samples be collected and analyzed at least once per 12 hours whenever radioactive liquid effluent monitoring instrumentation is out of service. Contrary to the above, grab samples were not collected and analyzed at least once per 12 hours in that, on August 2, 1989, samples for the component cooling service water effluent line were collected and analyzed 30 minutes outside the required 12-hour time frame.

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

The violation is correct as stated.

(2) REASON FOR VIOLATION:

The cause of the event was personnel error. The turbine building operator log requires sampling once per eight hour shift. The previous sample had been obtained early in the shift, and the liquid waste control room operator did not effectively communicate to the turbine building operator when the next sample would be required.

(3) CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED:

The event was reviewed with the turbine building and liquid waste operators. The liquid waste operator was disciplined.

The liquid waste control room operator's log has been revised to include a section that specifically identifies the time and date the heat exchangers were last sampled and the time when the next sample is to be taken.

(4) CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS:

Design work is in progress to replace the existing component cooling service water radiation monitoring system concurrent with replacement of the Component Cooling Water Heat Exchangers. The new design consists of a detector that will be mounted in a dry well in each heat exchanger. This design contains no piping subject to fouling and provides an individual detector for each heat exchanger.

(5) THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Full compliance with Technical Specifications was achieved August 2, 1989. The heat exchanger replacement project is underway and is currently scheduled to be completed by Spring, 1991.