

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

May 29, 1992

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

Serial No. 92-314
SPS/NS&L R4
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. 50-280/92-07 AND 50-281/92-07

We have reviewed your Inspection Report Nos. 50-280/92-07 and 50-281/92-07 dated April 29, 1992, and the enclosed Notice of Violation. Our reply to the Notice of Violation is attached.

With respect to the containment integrity issue, once station personnel had identified the condition, prompt action was taken to restore integrity and to ascertain that no additional breaches existed. As described in our attached response, a number of additional corrective actions are being implemented to further strengthen our procedural and operational controls for maintaining containment integrity.

Regarding the discovery of foreign material in the service water side of the Unit 1 B Recirculation Spray Heat Exchanger, we have determined that the Recirculation Spray System remained operable, even with the foreign material present in the system. The attached response describes our investigation into this event and the current foreign material exclusion program.

Please contact us if you have any questions or require additional information.

Very truly yours,



W. L. Stewart
Senior Vice President - Nuclear

Attachment

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PDR ADDCK 05000280
Q PDR



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

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

REPLY TO A NOTICE OF VIOLATION
NRC INSPECTION CONDUCTED MARCH 8 - APRIL 4, 1992
SURRY POWER STATION UNITS 1 AND 2
INSPECTION REPORT NOS. 50-280/92-07 AND 50-281/92-07

NRC COMMENT:

- A. "Technical Specifications (TS) 3.10.A.1 requires that for those systems which provide a direct path from containment atmosphere to the outside atmosphere, at least one valve shall be closed in each line penetrating the containment during refueling operations.

TS 6.4.D requires that refueling procedures be followed.

Procedure 1-OP-1G, Refueling Containment Integrity and Reactor Coolant System Mid-Loop Containment Closure Checklist, dated March 19, 1992, requires that temporary flanges used to meet containment integrity be sealed with gaskets so that there are no visible air gaps.

Contrary to the above, direct paths from containment atmosphere to the outside atmosphere existed during refueling operations under the following conditions:

The removal of the core internals and core off-load that commenced at 5:42 p. m. on March 17, 1992 and completed at 7:19 p. m. on March 20, 1992, was conducted while a direct path existed via an opening inside containment from feedwater (FW) header drain valve 1-FW-9 through the A steam generator (SG) and out an improperly sealed blank covering a maintenance opening on the bonnet of the A main steam (MS) trip valve 1-MS-TV-101A.

The movement of fuel associated with core on-load from 2:17 p. m. to 3:01 p. m. on April 2, 1992, was conducted while a direct path existed via an opening inside containment at the hand hole on the B SG through the B MS line and out through an improperly sealed blank covering a maintenance opening on the bonnet of MS check valve, 1-MS-117. Additionally, during this period, the same direct path existed as described above.

This is a Severity Level IV violation (Supplement I).

- B. 10 CFR 50, Appendix B, Criterion V, as implemented by the licensee's Topical Report, VEP 1-5A, requires that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. These procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above, maintenance and modification activities affecting quality were not being accomplished according to steps in various sections of DCP no. 90-26-1, Heat Exchanger Service Water Piping Cleaning and Recoating of Surry/Unit 1, dated October 2, 1990, which required in part the removal of temporary lighting, tools, debris, and other equipment from the service water lines. Failure to follow these instructions became apparent when a rain suit was found in the service water side of the B recirculation spray heat exchanger.

This is a Severity Level IV Violation (Supplement I)."

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NRC INSPECTION CONDUCTED MARCH 8 - APRIL 4, 1992
SURRY POWER STATION UNITS 1 AND 2
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VIOLATION A

Reason for the Violation, or, if Contested, the Basis for Disputing the Violation

The violation was due to a programmatic weakness in the procedures and work practices associated with establishing and maintaining refueling containment integrity (refueling integrity). The specific weaknesses are summarized as follows:

In the first instance, procedure 1/2-OP-1G specifically lists those containment boundary components located outside containment, but does not give adequate guidance to establish the refueling integrity boundary inside containment. In addition, there are insufficient controls or restrictions on changing the containment boundary once it is established. On March 16, 1992, the containment boundary was established inside containment for the "A" Steam Generator (SG) by completing 1-OP-1G. During this process it was not recognized that 1-FW-9 was open thereby defeating containment integrity. Work on 1-MS-TV-101A was authorized based on the mistaken belief that the SG boundary was intact inside containment. A cover was installed on 1-MS-TV-101A, which was acceptable for foreign material exclusion (FME) purposes, but it did not satisfy procedural requirements for refueling containment integrity.

In the second instance, disassembly and inspection of 1-MS-117 had been initiated on March 13, 1992, before refueling integrity was required. On March 14, 1992, it was determined that replacement of the valve was necessary, and the bonnet was re-installed at that time. When work on the valve resumed on April 2, 1992, the valve had become part of the containment boundary. Welders preparing to replace the valve removed the bonnet without first notifying Operations. Personnel are not procedurally required to consult the Operations Department before resuming work on extended jobs. When air inleakage was noticed, the welders installed a FME cover and notified their foreman, since they would be unable to weld the new valve in place with a vacuum in the line.

Corrective Steps Which Have Been Taken and the Results Achieved

After the on-shift operating staff was notified of the air inleakage into 1-MS-117, they determined on April 2, 1992 at 1940 hours that refueling containment integrity did not exist. At the time this determination was made, fuel movement had already been suspended for unrelated reasons.

The bonnet was reinstalled on 1-MS-117 on April 2, 1992 at 2204 hours.

Walkdowns were conducted and tagouts were reviewed to determine if any other refueling integrity concerns existed. This review revealed that 1-FW-9 was tagged open. On April 3, 1992 at 0300 hours, 1-FW-9 was closed. At 0337 hours, refueling integrity was reestablished. Fuel load resumed at 0426 hours.

A Root Cause Evaluation was performed which determined that the violation was caused by a programmatic weakness in the procedures and work practices for establishing and maintaining refueling containment integrity.

Station personnel were coached during meetings with management on the importance of maintaining close attention to detail especially during the high level of activity associated with refueling outages.

Corrective Steps Which Will be Taken to Avoid Further Violations

The refueling containment integrity procedure will be enhanced to provide more detailed and specific requirements for establishing refueling integrity. Components used to establish integrity inside as well as outside containment will be listed. The station tagging system will be used to ensure boundary valves or flanges are not inadvertently mispositioned.

Outage activities will be planned to include refueling integrity "windows". During periods when refueling integrity is required, modifications to the containment boundary and access to boundary components will be administratively restricted.

The Operations Department will be notified before restarting work on an extended job to ensure work is not performed on a component which has become part of the refueling integrity boundary.

Model work orders will be revised to identify those components which may be used to establish refueling integrity. This will caution operations and maintenance personnel that work on these components has the potential to affect refueling containment integrity.

Procedure 1/2-OP-1G will be separated into two procedures. One procedure will control refueling containment integrity, and the other will control mid-loop containment closure. This will avoid any potential confusion which could result from the differing requirements for the two conditions.

The Date When Full Compliance Will be Achieved

Refueling integrity was properly established on April 3, 1992 at 0337 hours. Programmatic enhancements will be completed prior to the next scheduled refueling outage.

VIOLATION B

Reason for the Violation, or, If Contested, the Basis for Disputing the Violation

The violation is correct as stated. An investigation was conducted which examined the various means by which the rain-suit could have been introduced into the system. It was concluded that the most likely cause of this event was inadequate implementation of FME controls specified in DCP 90-26-1. While closeout inspections were performed under the DCP, we presume they were not adequately performed in accordance with the DCP's directions which would have ensured that the service water piping was free of foreign material. A more thorough performance of the FME closure inspections specified in DCP 90-26-1 would have resulted in the detection and removal of the rain-suit prior to closure of the system boundary in November, 1990.

Corrective Steps Which Have Been Taken and the Results Achieved

The rain-suit was removed, and the significance of this event on prior Unit 1 operability and Unit 2 operability was evaluated. This evaluation concluded that this was an isolated occurrence and thus did not affect Unit 2 operability. Additionally, the as found total flow for the Unit 1 "B" and "C" Recirculation Spray Heat Exchangers, even with the rain-suit present, was sufficient for the system to meet its design function.

In December 1990, VPAP-1302, "Foreign Material Exclusion Program" was issued which established station-wide FME controls applicable to implementation of design change packages, as well as the performance of maintenance activities. This procedure requires that a closeout inspection of an open system be performed which includes, in part, a "visual inspection of system cavity for debris, tools, protective films, or pipe dams (inspection should be made with adequate lighting and mirrors or other devices, when necessary)." This procedure also requires that "safety related components, where the size of the opening is greater than 2 inches, shall be inspected by Quality Control prior to system closure." These controls were in effect during the recent Unit 1 Cycle 11 refueling outage and the service water piping to the Unit 1 RSHX's was inspected by Quality Control just prior to closure to ensure foreign material had been removed.

Corrective Steps That Will be Taken to Avoid Further Violations

Revision 2 to VPAP-1302 is currently in the management approval process. This revision will enhance the FME program by providing additional administrative requirements for documenting the results of closeout inspections. Closeout inspections will either be documented as directed by an approved procedure or on a FME closeout inspection form provided in the procedure. The increase in administrative controls for closeout inspection instructions should reduce the likelihood of future occurrences.

The Date When Full Compliance Will be Achieved

Full compliance was achieved with the implementation of VPAP-1302 in December, 1990 and the Quality Control closeout inspections completed in April, 1992, following Unit 1 cycle 11 service water piping work. VPAP-1302, Revision 2, is scheduled for approval by August, 1992.