

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

November 18, 1983

Mr. James P. O'Reilly
Regional Administrator
Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

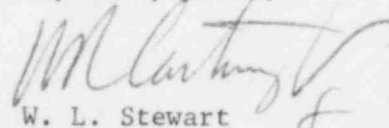
Serial No. 627
NO/JHL:acm
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Dear Mr. O'Reilly:

We have reviewed your letter of October 20, 1983 in reference to the inspection conducted at North Anna Power Station between May 6 and June 10, 1983 and reported in IE Inspection Report Nos. 50-338/83-13 and 50-339/83-13. Our response to the specific infractions are attached.

We have determined that no proprietary information is contained in the report. Accordingly, the Virginia Electric and Power Company has no objection to this inspection report being made a matter of public disclosure. The information contained in the attached pages is true and accurate to the best of my knowledge and belief.

Very truly yours,


W. L. Stewart

Attachment

cc: Mr. James R. Miller, Chief
Operating Reactors Branch No. 3
Division of Licensing

Mr. M. B. Shymlock
NRC Resident Inspector
North Anna Power Station

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RESPONSE TO NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-338/83-13 AND 50-339/83-13

NRC COMMENT:

- A. Technical Specification (TS) 3.3.1.1 and Limiting Safety System Settings, Table 2.2-1, require that the Intermediate Range Neutron Flux trip setpoints be operable and set between 25-30% of rated thermal power, while in Modes 1, 2, or with the reactor trip system breakers in the closed position and the control rod drive system capable of rod withdrawal.

Contrary to the above, on June 6 and during the startup on June 7, 1983, the trip setpoints were not within the required 25-30% band when rated thermal power exceeded 30%.

This is a Severity Level IV Violation (Supplement I), and applies to Unit 2 only.

RESPONSE:

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

This violation is correct as stated.

(2) REASONS FOR VIOLATION:

This infraction was the result of an administrative error. The unconservatively high IR neutron flux trip setpoint was a result of failure to properly assess the effect of a new, "modified" leakage core design on IR nuclear instrumentation. The current cycle on Unit 2 (Cycle 3) is a "reduced" or "modified" leakage core in that previously burned fuel has been placed in periphery location in the core to reduce the neutron fluence to the reactor vessel as well as obtain some economics in the neutron utilization in the core. Previous loadings for Unit 2 had been the "traditional" configuration where new fuel was placed in periphery locations. When the transition was made from a traditional core to the newer configuration, the effect of reduced neutron leakage on IR nuclear instrumentation was not evaluated.

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

When it became apparent that the then present IR trip setpoint was incorrect and nonconservative, an interpolation was carried by engineering personnel which determined 2.5×10^{-4} amps to be the current equivalent of 25 percent power. Subsequent review of this setpoint during a planned power reduction resulted in a further modification of this setpoint to 2.0×10^{-4} amps.

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In order to provide verification of proper IR trip setpoint for unit start-up other than from refueling, the operating procedure covering mode 2 to mode 1 power ascension was revised to include a visual verification of illumination of the IR reactor trip annunciator windows prior to exceeding 25% power. Included is a provision to have trip setpoints adjusted in the event the annunciators are not present by 25% power.

To provide a highly conservative level of protection during zero power start-up physics testing, an IR trip setpoint value of 1×10^{-4} amps is utilized. Once zero power physics testing is completed, the IR trip setpoint is set to a value which is equivalent to 25% power. We are presently evaluating methods of predicting, based on core load design data, an initial start-up IR trip setpoint value which will provide an adequate level of conservatism while still allowing the P-10 permissive to be received prior to reading IR trip setpoints.

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

Continued use of the revised OP should assure further violations of this nature do not occur for all cases other than initial power ascension following refueling. Planned corrective action in this case was discussed under number 3 above and will be completed on a schedule consistent with the discussion under number 5 below.

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

Full compliance has been achieved for cases other than initial power ascension following refueling. Compliance for this case will be achieved by May 31, 1984 for both units.

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NRC COMMENT:

- B. TS 6.8.1 requires written procedures to be established, implemented, and maintained.

Contrary to the above, the following procedures were not implemented:

1. Discharge valve 1-QS-29 on the off line chemical addition tank recirculation pump was found shut on May 24, 1983, and valve lineup sheets required it to be open. The system remained operable and no TS or LCO was violated. This applies to Unit 1 only.
2. Inlet valve 1-RS-163 to casing cooling tank chiller was shut on June 1, 1983, and valve lineup sheet 1-OP-7.1QA required it to be open. TS3.6.2.2C was not violated, in that the cooling tank temperature remained between 35 and 50°F and the system remained operable. This applies to Unit 1 only.
3. Periodic Test 2-PT-71.3 completed April 23, 1983, was signed off that pressure instruments had current calibration stickers, however, they did not. This applies to Unit 2 only.

This is a Severity Level V Violation, and applies to both units.

RESPONSE:

(1) ADMISSION OR DENIAL OF THE ALLEGED VIOLATION:

This violation is correct as stated.

(2) REASONS FOR VIOLATION:

Valve 1-QS-29 is the discharge isolation valve for the recirculation pump on the Refueling Water Chemical Addition Tank. This pump is run periodically prior to tank sampling to ensure that the sample is representative. The sample valve is located at the pump suction, between the pump suction and discharge valve. When the sampling procedure was last completed prior to May 24, 1983 the sample valve had a slight leak. The operator performing the recirculation procedure notified the Shift Supervisor who directed that valve 1-QS-29 be closed to provide additional isolation (the pump suction valve was already closed per the procedure). This action was correct, effective in stopping the leak, and did not in any way impair the operability of the Quench Spray system. However, no tag was placed on the valve. This was an error since the valve's abnormal status should have been under administrative control.

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There are two mechanical chiller units serving the casing cooling tank. Valve 1-RS-163 is the outlet valve from the No. 1 chiller. This valve and the No. 1 chiller inlet valve, 1-RS-164, are shut when the No. 2 chiller is in service to prevent back flow. On June 1, 1983, the No. 2 chiller was in service and valve 1-RS-163 was closed as it should have been. Valve 1-RS-164 was open which is contrary to the established lineup for No. 2 chiller operation. It is believed that valve 1-RS-164 was misaligned due to failure to properly follow the chiller lineup procedure. Since valve 1-RS-163 was closed, back flow was prevented and the failure to close 1-RS-164 had no effect on chiller operation or on the casing cooling system.

The improper sign-off of the PT procedural step was due to personnel error. The individual involved did not properly adhere to the procedure.

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

1-QS-29 was tagged as soon as the problem was identified. The sample valve leakage has been repaired and the system lineup has been returned to normal.

Regarding valve 1-RS-163, the procedure has been revised to include double verification of the standby chiller isolation to ensure that backflow cannot occur.

The periodic test in question was subsequently performed satisfactorily with properly calibrated instrumentation.

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

All Operations shift personnel will be instructed in these events with emphasis on the requirements to properly document and control abnormal system status, procedural step adherence and compliance.

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

Full compliance has been achieved.