



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-280/84-04 and 50-281/84-04

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection at Surry site near Williamsburg, Virginia

Inspectors: *S. Elrod for*
D. J. Burke

23 Feb 84
Date Signed

S. Elrod for
M. J. Davis

23 Feb 84
Date Signed

Approved by: *S. Elrod*
S. Elrod, Section Chief
Division of Project and Resident Programs

23 Feb 84
Date Signed

SUMMARY

Inspection on January 3-31, 1984

Areas Inspected

This inspection involved 200 resident inspector-hours on site in the areas of plant operations and operating records, plant maintenance and surveillance, plant security, followup of events and licensee event reports.

Results

Of the four areas inspected, no violations were identified in three areas, and one violation was identified in one area; (failure to properly monitor a radioactive gaseous waste release - paragraph 5.b).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. L. Wilson, Station Manager
R. F. Saunders, Assistant Station Manager
D. A. Christian, Operations Superintendent
M. R. Kansler, Superintendent of Technical Services
H. W. Kibler, Superintendent of Maintenance
D. Rickeard, Supervisor, Safety Engineering Staff
S. Sarver, Health Physics Supervisor
R. Johnson, Operations Supervisor
R. Lriscoll, Director, QA, Nuclear Operations

Other licensee employees contacted included control room operators, shift technical advisors (STA's), shift supervisors, chemistry, health physics, plant maintenance, security engineering, administrative, records, and contractor personnel and supervisors.

2. Exit Interview

The inspection scope and findings were summarized on a biweekly basis with certain individuals in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

Not inspected

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Operations

Units 1 and 2 operations were inspected and reviewed during the inspection period. The inspectors routinely toured the control room and other plant areas to verify that plant operations, testing, and maintenance were being conducted in accordance with the facility Technical Specifications (TS) and procedures. Within the areas inspected, one violation was identified for failing to properly monitor a radioactive gaseous waste release (paragraph 5b).

Specific areas of inspection and review included the following:

- a. Review was made of annunciated alarms in the control room and inspection of safety-related valve, pump, and equipment alignments on the console and in the plant.

- b. On the afternoon of January 10, 1984, the inspector observed that the air sampling pump for the process vent radiation monitors (RI-GW-101 and 102) was rotating much slower than normal. The local flow gauge (in the auxiliary building) confirmed that proper flow was not being maintained to the process vent radiation monitors. However, the local and control room flow fault alarm was not annunciated. The licensee subsequently determined that the flow switch had failed and would not alarm or annunciate the low flow condition; the failure was subsequently corrected. The radiation monitors (RM) and flows are checked daily (PT 26.1). The inspector noted that a maintenance request (MR) 1312290804 had been written on December 29, 1983, to repair the process vent RM pump. In addition, the redundant process vent RM, RI-GW-130-1, was also inoperable due to equipment failures. The inspector discussed these items with operations personnel at the end of the workday.

At 0922, on January 11, the licensee stopped the A waste gas decay tank (WGDT) release to verify flow to the process vent RM, and subsequently entered Abnormal procedure AP 5.16 "Process Vent RM Malfunction". The A WGDT release to the process vent commenced at 1515 on January 10, 1984, at 3 CFM with 107 psig in the tank (Release #84-1). The release was stopped at 0922 on January 11, with the tank at 36 psig, when the effluent RM's were determined to be inoperable. WGDT A activity was $3E-3$ uci/ml for Xe-133, and $6E-8$ uci/ml for I-131. TS 3.11.B.4 requires that gaseous waste gross and particulate activity and flow rate shall be continuously monitored and recorded during release of radioactive gaseous wastes to the process vent. The failure to verify operability of the RM during this WGDT release caused a Violation of TS 3.11.B.4 (280/84-04-01).

During the exit interview conducted for this inspection the licensee asked if he would be cited for equipment failures. The inspector stated that the NRC does not normally issue violations for equipment failures; however, with the multiple problems noted above, licensee personnel should have verified that the required monitoring equipment was operable prior to the WGDT A release.

- c. Unit 1 experienced a reactor trip from full power on overtemperature delta T (OTDT) during periodic testing on January 6, 1984. With channel II of the reactor protection system (RPS) logic in the tripped mode during the performance of periodic test (PT 2.1), a momentary voltage spike on vital bus I caused channel I OTDT to trip, initiating RPS coincidence and the reactor trip. Electricians working on the Unit 1 control room Gaitrionics (plant paging phone) module, which is powered from the Vital Buss, caused the voltage spike. The plant safety systems responded normally during the event. The A main feedwater regulating valve (MFRV) stuck open following the trip, which led to a high water level in the A steam generator and tripping of the main feedwater pumps. The auxiliary feedwater pumps maintained condensate flow to the steam generators (SG) as required. The Senior Resident Inspector was in the control room when the trip occurred. The A MFRV was disassembled and inspected. A treaded nut was found in the valve

plug cage and removed; the valve was reassembled, tested, and returned to service. Following the reactor trip, the RCS Iodine-131 dose equivalent activity peaked at 1.6 uci/ml.

- d. Unit 2 experienced a reactor trip from full power on January 13, 1984. A manual reactor trip was initiated by the reactor operator when he noticed the A main steamline trip (isolation) valve closure. A cracked air line to the valve operator was subsequently determined to be the reason for the valve closure and was repaired. Safety systems functioned as required following the trip. During the ensuing startup on January 14, 1984, a second trip occurred in the performance of electrical maintenance procedure EMP-C-RT-24. The maintenance was conducted to repair a faulty relay in the reactor trip system, during which a wrong lead was lifted, and the undervoltage coil on the A reactor trip breaker was de-energized. The responsible electrician failed to follow the procedure, in that the bypass breaker for the A reactor trip breaker was not closed during maintenance on the system. The relay was replaced and the unit restarted. The licensee identified the failure to follow the procedure and took corrective action on this matter; no additional violations were identified.

During the subsequent startup on January 14, 1984, Unit 2, experienced a reactor trip shortly after the Unit went on line. A high-high water level condition on the A SG, caused by the A MFRV failing open due to a broken air line, resulted in a turbine trip/reactor trip. Safety systems responded normally during the transient.

During the subsequent restart, at 55% power, feedwater line vibration occurred when the second feed pump was placed in service, due to another broken air line. The unit subsequently returned to full power operation. The unit operated at power for the remainder of the reporting period. The licensee and inspectors examined the instrument air lines to the main and bypass feedwater regulating valves; several air line supports were tightened, repaired, or added to reduce vibration induced cracking of the copper lines and joints. The feedwater recirculation controls are also being reviewed.

- e. Unit 1 experienced a manual reactor trip from full power on January 18, 1984, when spiking in a semi-vital bus caused various plant control systems and instruments to become erratic, including a runback and control rod position indication oscillations. Due to these anomalous indications, the operator manually tripped the reactor. The cause of the alarms and indications was apparently a loose cable termination lug which allowed a cable to come loose from its semi-vital bus breaker in the Unit 1 emergency switchgear room. Cable pulling was in progress adjacent to the termination lug and breaker, and probably resulted in the removal of the cable from its loose lug. Repairs were made, other lugs were inspected and the unit was restarted. The resident inspector was in the control room at the time of the trip. source range channel N-32 failed to re-energize automatically and had to be manually reset on low intermediate range indication. The A MFRV did not go fully

closed after the trip. The valve was adjusted and stroked, and the unit operated at power for the remainder of the reporting period.

6. Inspections, Surveillances and Maintenance Review

During the reporting period, the inspectors reviewed various surveillance and maintenance activities to assure compliance with the appropriate procedures and TS, and verified the operability of major plant systems. Inspection areas included the following:

Walkdown inspection of the auxiliary building, subsurface drain system, cable penetration areas, Units 1 and 2 battery rooms, switchgear and cable rooms, outside areas, and the turbine building were conducted. No additional violations were identified in the areas inspected. The licensee is installing new, more legible valve identification tags on valves in the safeguards building (eg-AFW systems) and the boric acid flat.

- b. A walkdown inspection of the fire protection system (FPS) was conducted using licensee checklist OP 52.2A. Several problems with valve identification labels were identified to the licensee. For example, four valves were listed twice in OP 52.2A using the same valve numbers to identify different valves. However, all FPS valves inspected were observed to be in the correct position and in accordance with the checklists.
- c. The inspectors reviewed the control room logs and operations daily and reviewed the reactor coolant system leak rates on a daily basis. Several LCO's in Section 3 of the Technical Specifications were also verified on a periodic basis to insure compliance with the requirements. The inspectors also verified that at least two Senior Reactor Operators (SRO) were on duty at all times during reactor operations, and at least one SRO was in the reactor control room at all times.
- d. The licensee continues to experience temperature increases in the Unit 2 auxiliary feedwater (AFW) discharge piping, due to apparent backleakage of main feedwater (approx. 430 degrees F) through the AFW discharge checkvalves. (See IE Information Notice No. 84-06). Recent check valve inspections and seat repairs have not eliminated the backleakage through the four checkvalves in series. Temperatures are taken on the AFW discharge lines every few hours; recently, temperature appears to have stabilized at a maximum of 175 degrees F. Unit 1 has not experienced similar temperature increases in the AFW discharge lines.
- e. Following reactor trips, the operators frequently must manually re-energize the source range (SR) nuclear instruments when the intermediate range (IR) detectors approach the low end of their scale. The IR detectors appear properly compensated, but the auto reset of the SR high voltage below P-6 appears to malfunction. The licensee is investigating this matter. (Item 280/84-04-02).

7. LER Review

The inspectors reviewed the Licensee Event Report (LERs) listed below to ascertain that NRC reporting requirements were being met and to determine the appropriateness of corrective action taken and planned. Certain LERs were reviewed in greater detail to verify corrective action and determine compliance with TS and other regulatory requirements. The review included examination of logbooks, internal correspondence and records review of SNSOC meeting minutes, and discussions with various staff members. Within the areas inspected, no violations were identified.

(Closed) LER 280/83-57 concerned high post reactor trip Dose Equivalent Iodine-131 activity in the RCS caused by known fuel element defects in the core. Activities were monitored every four hours until the level returned to less than 1.0 uci/ml. The peak activity level was 1.68 uci/ml.

(Closed) LER 281/83-45 concerned an open circuit breaker for MOV-2876D, which apparently was accidentally bumped, causing it to open. The breaker was closed and the valve responded properly.

8. Plant Physical Protection

The inspectors verified the following by observations:

- a. Gates and doors in protected and vital area barriers were closed and locked when not attended.
- b. Isolation zones described in the physical security plans were not compromised or obstructed.
- c. Personnel were properly identified, searched, authorized, badged and escorted as necessary for plant access control.

No violations were identified.