UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-280/85-07 and 50-281/85-07

Licensee: Virginia Electric and Power Company
Richmond, VA 28261

Docket Nos.: 50-280 and 50-281 License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection Conducted: February 11 - March 4, 1985

Inspectors: Kenneth M Jenison for 21 March 1985
D. J. Burke, Senior Resident Inspector Date Signed

Kenneth M Jenison for 21 March 1985
M. J. Davis, Resident Inspector Date Signed

Approved by: S Elrod 17 April 1985
S. Elrod, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine, unannounced inspection entailed 150 inspector-hours on site in the areas of plant operations and operating records, plant maintenance and surveillance, plant security, followup of events, licensee action on previous enforcement actions, and licensee event reports.

Result: In the areas inspected, one violation was identified in the area of plant operations; Unit 2 charging pump intermediate seal coolers not operating in accordance with Technical Specification (TS) 3.13.B.3 - paragraph 5.d.

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   R. F. Saunders, Station Manager
   D. L. Benson, Assistant Station Manager
   H. L. Miller, Assistant Station Manager
   D. A. Christian, Superintendent of Operations
   E. S. Grecheck, Superintendent of Technical Services
   H. W. Kibler, Superintendent of Maintenance
   D. Rickeard, Supervisor, Safety Engineering Staff
   S. Sarver, Superintendent of Health Physics
   R. Johnson, Operations Supervisor
   R. Driscoll, Site QA Manager
   W. R. Runner, Supervisor, Administrative Services

   Other licensee employees contacted included control room operators, shift technical advisors (STAs), 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. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

   a. (Closed) - Violation (281/84-10-01), Reactor Coolant System (RCS) cooldown rate exceeded the 50 degrees F/hr limit of TS 3.1.B.1. Appropriate retraining and instructions have been provided on this event.

   b. (Closed) - Violation (280, 281/84-15-01), Failure to follow Fire Protection procedures. Administrative procedures were strengthened and personnel reinstructed to ensure compliance.

   c. (Closed) - Violation (280, 281/84-15-02), Inadequate periodic testing and post-maintenance testing procedures. The procedures have been revised and the program strengthened; smoke and heat detectors are being specifically identified.

d. (Closed) - Violation (281/84-20-01), Inadequate maintenance procedures for setting motor operated valve (MOV) torque switches. Procedures have been revised to ensure proper torque switch inspections and settings (EMP-C-MOV-50).

e. (Closed) - Violation (280, 281/84-24-01), Written safety evaluation for modifying component cooling water system (CCW) to reactor coolant pump (RCP) thermal barriers, etc. as described in Final Safety Analysis Report (FSAR), not performed. The evaluation was performed and documented, and determined that an unreviewed safety question does not exist. High pressure trip and check valves will be installed in the CCW system as described in the FSAR, during upcoming refueling outages.

f. (Closed) - Violation (281/84-24-02), Electrical maintenance procedure EMP-C-RT-24 not properly followed. The procedure was revised and the violation reviewed with electrical department personnel, emphasizing the proper use of jumpers.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Operations

a. Unit 1 and 2 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 TSs and procedures. The inspectors verified that monitoring equipment was recording as required, equipment was properly tagged, and plant housekeeping efforts were adequate. The inspectors also determined that appropriate radiation controls were properly established, clean areas were being controlled in accordance with procedures, excess material or equipment was stored properly, and combustible material and debris were disposed of expeditiously. During tours, the inspectors looked for the existence of unusual fluid leaks, piping vibrations, piping hanger and seismic restraint settings, various valve and breaker positions, equipment caution and danger tags, component positions, adequacy of fire fighting equipment, and instrument calibration dates. Some tours were conducted on backshifts. Inspections included areas in the Unit 1 and 2 cable vaults, switchgear rooms, control rooms, auxiliary building, and cable penetration areas to verify certain breaker and equipment positions for safety-related components. The inspectors routinely conduct partial walkdowns of Emergency Core Cooling System (ECCS) and Engineered Safety Features (ESF) systems.

b. During periodic stroke testing of the Unit 2 Service Water (SW) motor operated valves MOV-SW-203A through D, a report of service water spraying into the safeguards building containment spray pump room was made. The event was repeated when MOV-SW-203A was subsequently stroked

on March 4, 1985. The rapid flow of service water into the 36 inch SW lines when the MOVs are opened, apparently causes a momentary surge of water into the SW vent line standpipes which vent into the safeguards room, when the water reaches the closed valves MOV-SW-204A through D. Some of the vented SW sprayed onto certain Containment Spray System pump motors and valves in the room. All affected pumps were operationally tested and MOVs stroked to verify operability; no problems were observed. The licensee will redirect the vents or manually isolate them during MOV testing to prevent recurrence. IFI (281/85-07-03.)

c. Unit 1 and Unit 2 operated at power for the duration of the reporting period. No trips or shutdowns occurred.

d. On February 15, 1985, operations personnel discovered valve misalignment on the Unit 2 charging pump cooling water subsystems. The subsystems consist of two water systems, a closed loop component cooling water (CCW) system which cools two seal coolers on each of the three charging pumps, and a service water (SW) system which removes heat from the CCW system via the intermediate seal coolers or heat exchangers. Service water also directly cools the charging pump lubricating oil coolers on each charging pump. At 5:45 a.m. on February 15, 1985, service water pump 2-SW-P-10B was secured for inspection and 2-SW-P-10A was placed into service; two operations team members were directed to shift the SW and CCW subsystems to the A intermediate seal cooler (ISC) and verify valve positions. The individuals reported that the transfer to A ISC was completed and verified. Neither the operating procedures (2-OP-51.5 series) nor the valve checkoff (alignment) procedures were used although independent verification was required. During a routine valve alignment check at 9:30 p.m. on February 15, 1985, operations personnel discovered that CCW was isolated to the B ISC, while SW was isolated to the A ISC, rendering both Unit 2 ISC inoperable during power operation. This is a violation of TS 3.13.B.3, which requires that one charging pump ISC shall be operating when the Unit is critical (281/85-07-01). The coolers were apparently valved out approximately 15.7 hours. A similar event occurred on Unit 1 on May 18, 1984 (see Inspection Report 50-280/84-17), however, a Notice of Violation was not issued in accordance with 10 CFR 2, Appendix C, IV.A. During the time the coolers were valved out, no notable increases in charging pump temperatures were observed due to ambient heat losses and the full operability of the charging pump lubricating oil coolers, which remove about 75 percent of the heat load (seal coolers remove 25 percent). A subsequent engineering study determined that the charging pumps could operate under emergency or normal conditions for more than a week without exceeding any pump temperature limits. The intermediate seal cooler valve alignments are inspected/verified weekly per valve checklist 2-CL-54. In addition, the opposite unit charging pump cross-tie was available to supply Unit 2. The individuals involved were suspended for not utilizing the procedures, which appear adequate.

e. The licensee identified an additional example of the violation (280/85-01-02), regarding the implementation of TS Amendment 100 for Unit 1. Specifically, TS 4.1.B.5.a requires that each reactor vessel head vent path shall be demonstrated operable following each refueling by verifying that the upstream manual isolation valve in each vent path is locked in the open position. Although the Unit 1 vent valve 1-RC-602 was opened and independently verified open, as documented December 9, 1984, on the OP 5.1A checklist, the valve was not locked in the open position. The licensee will include this item in the response to (280/85-01-02) as discussed above.

6. Maintenance and Testing

a. During routine stroke testing of Units 1 and 2 MOVs, the following MOVs did not perform satisfactorily:

MOV-SW-103c, torqued out
MOV-SW-202B, manual lever did not disengage
MOV-SW-105C, did not close
MOV-CS-200A, did not open
MOV-FW-151F, thermally overloaded - replaced breaker heater coil

The MOVs were worked or manually stroked, and subsequently satisfactorily tested. The licensee agreed to perform a programmatic review of safety-related MOVs during the upcoming outages. The review will include torque and limit switch inspections, breaker heater coil verifications and inspection of the manual tripper arms on certain SMB-000 and -00 valves Open Item (281/85-07-02).

b. The inspectors reviewed the maintenance performed on the Units 1 and 2 Service Water (SW) flow-instrumentation. Some seaweed-type plugging was found in certain instrument tubing, and two of the pilot tubes had to be reoriented to perform properly. IFI (280/84-30-03) is closed; periodic inspections and calibrations of the instruments are performed during outages.

c. The inspectors observed that all specified under voltage trip actuator (UVTA) modifications appeared to be in place on the Unit 1 trip breaker UVTAs. Extensive testing and inspections continue to verify operability of the components. Open Item (280/84-17-01) is closed. The Westinghouse DB-50 shunt coil trip circuitry has also been installed and is tested as required on Units 1 and 2.

7. LER Review

The inspectors reviewed the Licensee Event Reports (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 Site

Nuclear Safety Operating Committee SNSOC meeting minutes, and discussions with various staff members. Within the areas inspected, no violations were identified.

(Closed) LER 280/85-002 concerned a reactor trip from 20 percent power caused by an operator's failure to adequately control steam generator level during transfer from bypass to the main feedwater regulating valves.

(Closed) LER 281/85-01 concerned an inadvertent start of an auxiliary feedwater pump during monthly testing of reactor protection logic. Instrument technicians failed to perform the test in the specified sequence. The test switch for the C steam generator low low level was actuated out of sequence in lieu of the switch for pressurizer high pressure. The pump was stopped and the test suspended. Instrument technicians were made aware of the importance of following procedures.

(Closed) LER 280/84-24 concerned a spurious safety injection (SI) which occurred while the unit was in a refueling shutdown with the core defueled. The spurious SI was due to an inadequate procedure in that the procedure did not require the resetting of CLS-hi. Outstanding work procedures that required the de-energizing of CLS-hi were held in abeyance until the procedures could be modified.

(Closed) LER 280/83-58 and 280/83-43 concerned malfunctioning main feedwater regulating valves that failed to fully close upon receipt of a RCS low Tave feedwater isolation signal following a reactor trip. The feedwater regulator valves were rebuilt during a subsequent outage, and are routinely tested.

(Closed) LER 280/83-03 concerned recirculation spray service water motor operated valve (MOV) failures on both Units. Operators continued to be assigned to monitor valve performance or operate the valves manually during emergency conditions. The valves are cycled on a quarterly basis. Larger valve operators have been installed on the Unit 1 valves and are to be installed on the Unit 2 valves during the upcoming outage.

(Closed) LER 281/83-46 concerned sheared operator mounting bolts on MOV-RS-255A ('A' outside recirculation spray pump suction valve). The one quarter inch diameter bolts used in the base were not of sufficient strength to support the shear forces encountered when operating the valve. The valve motor operator support stands on both units now use six half inch diameter by seven inch long Hilti concrete anchor bolts to attach the stands to the concrete floor.

8. Plant Physical Protection

The inspectors verified the following by observation:

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 or plant access control.