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

Report Nos.: 50-280/85-38 and 50-281/85-38

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 Conducted: December 3, 1985 - January 6, 1986

Inspectors: A. J. Ignatonis for D. J. Burke, Senior Resident Inspector — 1/30/86 Date Signed

A. J. Ignatonis for M. J. Davis, Resident Inspector — 1/30/86 Date Signed

Approved by: A. J. Ignatonis, Acting Section Chief, Division of Reactor Projects — 1/30/86 Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 180 inspector-hours in the areas of plant operations and operating records, plant maintenance and surveillance, plant security, followup of events, and Licensee Event Report (LER) review.

Results: No violations or deviations were identified.

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
J. W. Patrick, Superintendent of Maintenance
J. Logan, Supervisor, Safety Engineering Staff
S. Sarver, Superintendent of Health Physics
R. Johnson, Operations Supervisor
D. Driscoll, Site Quality Assurance Manager

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

2. Exit Interview

The inspection scope and findings were summarized on a biweekly basis with certain individuals identified in paragraph 1. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. At no time during the inspection was written material provided to the licensee by the inspector.

3. Licensee Action on Previous Enforcement Matters

This was not inspected during this reporting period.

4. Operations (71707 and 93702)

a. Units 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 Technical Specifications (TS) and procedures. The inspectors verified that monitoring equipment was recording as required, that equipment was properly tagged, and that plant housekeeping efforts were adequate. The inspectors also deter-

mined that appropriate radiation controls were properly established, that clean areas were being controlled in accordance with procedures, that excess material or equipment was stored properly, and that combustible material and debris were disposed of expeditiously. During tours, the inspectors monitored the plant for 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.

Certain tours were conducted on backshifts. Inspections included areas in the Units 1 and 2 cable vaults, vital battery rooms, fire pump house, low level intake structure, emergency switchgear rooms, diesel generator rooms, control room, auxiliary building, and cable penetration areas to verify certain breaker and equipment conditions and positions for safety-related components. The inspectors routinely conducted partial walkdowns of emergency core cooling systems and engineered safety features systems to verify operability and observe maintenance and testing of certain equipment and components in these systems.

During the auxiliary building tours, the inspectors specifically verified that the charging pump intermediate seal cooler systems were properly aligned and operating in accordance with Technical Specification 3.3.A.7 and operating procedures. The inspectors noted that the service water (SW) flow instruments for both units (e.g., FI-SW-101A, B, C and -201A, B, C) were difficult to read due to internal deposits on the sight gauge, although the flow is automatically regulated by a temperature control valve. This is inspector followup item (IFI 280,281/85-38-01), Clean Service Water Flow Instruments. While in the auxiliary building basement, the inspectors verified that the containment instrument air line jumper (Temporary Modification 52-85-284) was properly installed between valves 977 and 992 and was constructed of a proper high pressure material. The licensee continues to experience containment instrument air compressor failures. Licensee engineers are working with the manufacturer to resolve the failures.

While verifying auxiliary feedwater system (AFW) alignments and temperatures, the inspectors observed that the insulation and minor debris had been cleaned from the AFW pump seal water catch basins and that the safeguard rooms were also cleaned. In addition, the reason for the difference in AFW pump seal water supply systems appears to be related to the old bunker-type (buried) emergency condensate tanks. The above ground tanks (eg-2-CN-TU-1) currently in use supply adequate seal water pressure at the pump. IFI (280/85-32-01) is closed.

During inspections in the Unit 2 safeguards building, the inspectors observed some slight deposits of dry mud and salt water residue marks in the area of containment spray (CS) valves CS-MOV-203B and D; service water apparently sprayed again from the SW line vents behind the CS valve area during quarterly testing of the SW-MOV-203A through D

valves. The licensee is revising the SW motor operated valve test procedures (PT 25.2) to isolate the vents during testing. IFI (281/85-07-03) remains open.

b. Both Units 1 and 2 operated at power for the duration of the reporting period. No reactor trips or shutdowns occurred. Unit 2 did experience a turbine runback from full power to approximately 350 MWe on January 2, 1986, at 3:00 p.m. A cable fault in the electrical lead between the switchyeard breaker (252) and the B reserve station service (RSS) transformer caused a pilot wire ground or cable differential signal which opened the 252 and 15E1 breakers, thereby, isolating the B RSS transformer. The turbine runback was initiated by the nuclear instrumentation rod drop protection circuitry (high negative flux rate) when the Unit 2 Vital Bus 2-I and NI-41 were momentarily lost, which occurs when B RSS power is interrupted. Emergency diesel generator #2 (EDG) automatically started and supplied the emergency and vital busses. During the event, a rod urgent failure occurred for approximately 25 minutes; all other safety systems performed satisfactorily. The steam dump valves opened to bypass the difference between reactor and turbine power. The reactor operators performed a 150 gallon emergency boration to reduce reactor power and, subsequently, increased turbine load to match reactor and turbine power which closed the steam dump valves. The plant was stabilized at approximately 88 percent power and later returned to full power operation. The Resident Inspectors observed that the response and recovery operations of the control room staff after the runback were appropriate, and that notification of the EDG #2 start was made to the NRC Incident Response Center within the required four hours. EDG #2 supplied electrical power to the 2H (and 2-I) bus throughout the event until the cable fault was identified and corrected. A failed stress cone on phase C of feeder breaker 252 cable leak was found, which apparently shortened the cable to ground. The failed cable was spliced and the connection replaced; all stress cones of the breaker were satisfactorily tested before returning the breaker and RSS transformer to service at 6:15 a.m. on January 3, 1986. EDG #2 was subsequently secured at 7:18 a.m.

5. Surveillance and Maintenance Inspections (61726 and 62703)

During the reporting period, the inspectors reviewed various surveillance and maintenance activities to assure compliance with the appropriate procedures and TSs. Inspection areas included the following:

a. On December 19th, the inspector observed troubleshooting activities on the overspeed trip mechanism of the 1A emergency SW pump at the low level intake structure. Adjustments were performed in accordance with the mechanical preventive maintenance procedure SW-P-M/2A for the emergency SW pumps and the Detroit Diesel V-71 Technical Manual. No discrepancies were observed.

b. On December 26th, the inspector observed troubleshooting activities on the Unit 2 rod control system in response to a rod control urgent failure in the logic cabinet. Activities were conducted in accordance with corrective maintenance procedure IMP-C-EPCR-46 "Maintenance of the Rod Control System". A faulty pulsar card and an alarm card were replaced and the alarm condition cleared.

c. Reactor coolant system leak rates were reviewed to ensure that detected or suspected leakage from the system was recorded, investigated, and evaluated and that appropriate actions were taken if required. No abnormal leakage was observed.

d. A walkdown inspection of the circulating water and the emergency service water systems was conducted at the low level intake structure. Repairs were being made to the emergency service water pump manifold exhaust piping hangars and items identified in Inspection Report 280/85-34.

e. The inspectors observed portions of the monthly Periodic Test PT 8.1, "Reactor Protection Logic", including operation of the DB-50 reactor trip breakers on Unit 1.

6. Information Meeting with Local Officials (94600)

On December 5, 1985, the Senior Resident Inspector (SRI) met with the Surry County Board of Supervisors at their regular meeting to discuss items of general interest related to the Surry Power Station. A brief description of the NRC organization and mission was presented, plant status, and a description of the local Public Document Room (PDR) facility. The SRI than responded to questions from the Supervisors and members of the audience. The majority of questions concerned the NRC licensing and inspection activities for the Surry Power Station Dry Cask Independent Spent Fuel Storage Installation (ISFSI), which is being constructed at the station. The Board of Supervisors thanked the NRC for its presentation, communications, and discussion, and moved to additional business items on the meeting agenda.

7. Licensee Event Report (LER) Review (92700)

The inspectors reviewed the LERs listed below to ascertain whether NRC reporting requirements were being met and to determine the appropriateness of corrective actions taken and planned.

Certain LERs were reviewed in greater detail to verify corrective action and determine compliance with the TS and other regulatory requirements. The review included examination of the logbooks, internal correspondence and records, review of Station Nuclear Safety and Operating Committee meeting minutes and discussion with various staff members.

(Closed) LER 281/85-04 concerned discrepancies found with Rosemount Model 1153 transmitters and Conax environmental seal assemblies. Degraded terminal screws used to terminate field wiring were found inside the transmitters, and Conax seal assemblies that did not provide a positive environmental seal were found. The failure of the terminal screws was due to overtorquing the hollow (bored) screws installed by the vendor. The Conax connectors had been improperly installed due to inadequate installation procedures as well as failure to follow certain procedures. Solid terminal screws were installed in the environmentally qualified transmitters located in both containments. Conax connector discrepancies were corrected and the installation procedures were modified.

(Closed) LER 281/85-09 concerned individual rod position indicators (IRPI) that deviated from the bank demand position by more than 12 steps. Instrument drift appears to have been the cause; the digital step counters did not change. The IRPIs for the affected rods were calibrated to give the correct indication.

(Closed) LER 281/85-13 concerned a turbine trip/reactor trip from 22 percent power during Unit 2 startup. The cause of the trip was high steam generator level during manual control of feedwater flow. The importance of using experienced plant personnel for critical functions and the importance of coordination between operations was stressed to the personnel involved.

(Closed) LER 280/85-13 concerned Unit 1 containment temperature exceeding 120 degrees Fahrenheit for approximately three hours due to component cooling chiller unit 1-CD-REF-1A tripping due to high chiller condenser pressure initiated by tube fouling on the service water side of the chiller condenser. The 1A chiller was restarted and both the 1A and 1B chiller were aligned to cool Unit 1 containment. The chiller condenser service water tubes were subsequently cleaned for all three chiller units.

8. Plant Physical Protection

   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.