



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

Report Nos. 50-280/82-20 and 50-281/82-20

Licensee: Virginia Electric & Power Company  
Richmond, VA 23261

Facility Name: Surry Units 1 and 2

Docket Nos. 50-280 and 50-281

License Nos. DPR-32 and DPR-37

Inspection at Surry site near Surry, Virginia

Inspectors: *K. D. Landis* 7/30/82  
for D. J. Burke Date Signed

*K. D. Landis* 7/30/82  
for M. J. Davis Date Signed

Approved by: *C. Julian* 7/30/82  
C. Julian, Section Chief, Division of Date Signed  
Project and Resident Programs

SUMMARY

Inspection on June 1-30, 1982

Areas Inspected

This inspection involved 200 resident inspector-hours on site in the areas of plant operations and operating records, plant maintenance and testing, followup on I&E Bulletins and Circulars, and plant security.

Results

No violations were identified in the areas inspected.

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. L. Wilson, Station Manager
- \*R. F. Saunders, Assistant Station Manager
- \*G. E. Kane, Operations Superintendent
- \*D. A. Christian, Superintendent of Technical Services
- \*R. Driscoll, Director QA, Nuclear Operations
- \*D. Rickeard, Supervisor, Safety Engineering Staff
- S. Sarver, Health Physics Supervisor

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

\*Attended exit interview

### 2. Management Interviews

The inspection scope and findings were summarized on a biweekly basis with those persons indicated in Paragraph 1 above.

### 3. Licensee Action on Previous Inspection Findings

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Unit 1 Operations

Unit 1 operations were inspected and reviewed during the inspection period. During this time, the inspectors routinely toured the Unit 1 control room and other plant areas to verify that the plant operations, testing, and maintenance were being conducted in accordance with the facility Technical Specifications (TS) and procedures. Within the areas inspected, no violations were identified.

Specific areas of inspection and review included the following:

- a. Review of annunciator alarms in the control room and inspection of safety-related valve and pump alignments on the consoles and in the plant.
- b. Unit 1 operation at full power during the reporting period; no reactor trips or shutdowns occurred during the month.

- c. Inspection and review of maintenance and testing during the reporting period. Periodic Test (PT) 2.20, Containment Sump Level Instruments, and PT 2.26, Power Operated Relief Valves/OPS, were also reviewed.
- d. On June 20, 1982, while performing PT 18.5, Flushing of Sensitized Stainless Steel Piping, on B Loop, the reactor operator inadvertently opened HCV-1850B (Accumulator A test line isolation valve) and drained the A Safety Injection (SI) accumulator below the Technical Specification (TS) minimum required level of 53.3%. The decreasing level was observed and HCV-1850B was immediately closed; the accumulator level decreased to approximately 40%. During this time, the B accumulator discharge valve MOV-1865B had been closed as required by procedure PT 18.5 and the valve bypass switch was in the DEFEAT position to permit closure of the valve during power operations (MOV auto opens at 2000 psig primary pressure); however, the SI signal would have opened MOV-1865B if safety injection was required. The B accumulator valve (MOV-1865B) was reopened within six minutes, and the A accumulator level restored to within TS 3.3.A.2 limits in an additional 30 minutes. An engineering study has been initiated to determine if improved control panel markings or switch relocation would reduce the potential for personnel error, since the HCV-1850B controls for A accumulator are located under the B accumulator column of controls on the control room vertical board. During the occurrence, the licensee did not exceed the six hours action statement of TS 3.0.1, Limiting Conditions for Operations; therefore, reactor shutdown was not required. An LER will be submitted on this event.

## 6. Unit 2 Operations

Unit 2 operations were inspected and reviewed during the inspection period. During this time, the inspectors routinely toured the Unit 2 control room and other plant areas to verify that plant operations, testing and maintenance were being conducted in accordance with the facility Technical Specifications and procedures. Within the areas inspected, no violations were identified. Specific areas of inspection and review included the following:

- a. Review of alarms in the control room and inspection of safety-related valve and pump alignments on the consoles and in the plant.
- b. Unit 2 was operating at or near full power during the reporting period; no reactor trips or shutdowns occurred during the month.
- c. Periodic testing on the power operated relief valves (PORV's) and overpressure mitigating systems (PT 2.26) were also reviewed for the current year (1982). No violations were identified.
- d. A slight leak was determined to exist in the Unit 2 non-regenerative heat exchanger by monitoring RCS leakage and component cooling water activity. Normal letdown was isolated and the heat exchanger repaired during unit operations.

- e. On June 1, 1982, while inspecting various equipment and tank levels in the control room, the inspector observed that the Unit 2 refueling water storage tank (RWST) level was above the Unit 2 curve book RWST limit of 97.6%. The licensee reduced the RWST level to some 97% (TS minimum = 95.8%) until Design Change 78-537B was verified completed. The Design Change reinforced the RWST hold down lugs to eliminate the potential overstress condition during seismic events. The licensee revised the control room curve books to eliminate the RWST stress limits.

#### 7. Review of IE Circulars

- a. IE Circular 79-03 concerned inadequate guard training/qualification and falsified training records. Inspections of corporate and site security records and interviews with security personnel have not revealed similar problems at Surry Units 1 and 2. This circular is closed.
- b. IE Circular 79-10 concerned pipefittings manufactured from high carbon content material. A review of pipefitting receiving documents was conducted and concluded that Surry had not purchased any pipefittings manufactured from the defective material lot. This circular is closed for Surry 1 and 2.
- c. IE Circular 79-18 concerned proper installation of Target Rock Safety Relief Valves. The subject valves are not utilized at Surry Units 1 and 2. This circular is closed.
- d. IE Circular 79-19 concerned loose locking devices on Ingersoll-Rand pump impellers. Inspections conducted on site pumps of a similar design revealed no problems of the type mentioned in the circular. This circular is closed for Surry Units 1 and 2.
- e. IE Circular 79-20 concerned the failure of GTE Sylvania Relays Type PM Bulletin 7305. The relays are not utilized at Surry. This circular is closed for Surry Units 1 and 2.
- f. IE Circular 79-22 concerned periodic testing of power operated relief valve stroke times. At Surry, Periodic Test 2.26 requires testing and stroke time measurement of the PORV's to ensure that the valves are not degrading, otherwise, the PORV's are isolated. This circular is closed for Surry Units 1 and 2.
- g. IE Circular 79-23 concerned Gould motor starters and contactors which failed to operate. No Gould starters or contactors were used at Surry. This circular is closed for Surry Units 1 and 2.
- h. IE Circular 80-01 concerned service advice for GE induction disc relays. A program for inspection and cleaning (if necessary) of relays during refueling outages has been established. This circular is closed for Surry Units 1 and 2.

- i. IE Circular 80-02 concerned nuclear power plant staff work hours. The plant administrative procedures ADM-3, Hours of Work, was revised to comply with the circular and NUREG 0737. This circular is closed for Surry Units 1 and 2.
- j. IE Circular 80-03 concerned "Protection from Toxic Gas Hazards." This item is covered as part of NUREG 0737 Item III. D.3.4., Control Room Habitability Requirements. This circular is considered closed for Surry Units 1 and 2. The implementation of NUREG 0737 Item III. D. 3.4 will assure that the toxic gas issue is resolved.
- k. IE Circular 80-04 concerned securing of threaded locking devices on safety related equipment. Equipment inspections and procedures reviews are being conducted for Surry Units 1 and 2. This circular is closed.
- l. IE Circular 80-05 concerned emergency diesel generator lubricating oil addition and onsite oil supply. Changes were made to clarify Surry operating procedures concerning oil addition and to ensure an adequate onsite lube oil supply. This circular is closed for Surry Units 1 and 2.
- m. IE Circular 80-07 concerned problems with HPCI turbine oil systems at BWR plants and is not applicable to Surry Units 1 and 2. This circular is closed.
- n. IE Circular 80-09 concerned problems with plant internal communications systems. The source of power for Surry internal communications is the vital bus. The internal communications systems were upgraded to assure operability during the loss of offsite power and other possible events. This circular is closed for Surry Units 1 and 2.
- o. IE Circular 80-10 concerned failure to maintain environmental qualification of equipment due to improper maintenance or improper use. Station administrative procedures ensure that this equipment is properly identified, maintained, and used. In addition, maintenance personnel receive training on the maintenance of environmentally qualified equipment. This circular is closed for Surry Unit. 1 and 2.
- p. IE Circular 80-11 concerned emergency diesel generator lube oil cooler failures due to an interaction between the corrosion inhibitor and the solder that seals the tubes to the tubesheet. The corrosion inhibitor Calgon CS, a borate-nitrate type inhibitor, caused severe corrosion of the solder in the referenced circular. The corrosion inhibitor in use at Surry is the chromate type and is apparently compatible with the soft solder utilized in the cooling system. No corrosion has been observed. This circular is closed for Surry Units 1 and 2.
- q. IE Circular 80-12 concerned a problem with the Bettis/Pratt valve shaft to actuator key. The butterfly valve actuators in use at Surry are manufactured by Limatorque and Fisher, and a review of drawings revealed that the type of keyed connection used by these manufacturers

has not and would not present similar problems as the Bettis/Pratt connection. This circular is closed for Surry Units 1 and 2.

- r. IE Circular 80-13 concerned grid strap damage in Westinghouse fuel assemblies during vertical loading and unloading operations. A review of Surry refueling procedures, load cell limits, and operating experience concluded that increased loads during fuel handling would be easily detected. This circular is closed for Surry Units 1 and 2.
- s. IE Circular 80-14 concerned radioactive contamination of plant demineralized (DI) water system and the resultant internal contamination of personnel. At Surry administrative controls are in effect to prevent contamination of drinking water. A review of possible points of entry was conducted and mechanical back-flow prevention devices were installed. By design, only physical jumpers could contaminate the DI water. All temporary cross connections between systems are logged and evaluated for cross contamination concerns whenever one is utilized. Drinking or use of any water for human consumption which is not potable water is prohibited. This circular is closed for Surry Units 1 and 2.
- t. IE Circular 80-15 concerned loss of reactor coolant pump cooling water and natural circulation cooldown. The information in the circular was disseminated to licensed operating personnel in Operator Training Bulletin #40. Abnormal Procedure - 39, Natural Circulation of Primary Coolant, was revised to reflect the recommendations of the circular. An evaluation of the Component Cooling Water system to determine vulnerability to single failures was performed. Upper head area thermocouples are installed in Surry Unit 1. No modifications to Unit 2's system are planned. The reactor vessel head vent system and available external indications such as the sub-cooling monitor, pressurizer level and pressure and increased training in recognition of void formation provide adequate information on void formation. This circular is closed for Surry Units 1 and 2.
- u. IE Circular 80-17 concerned fuel pin damage due to water jet from baffle plate corners, Westinghouse informed VEPCO on November 3, 1980, that the Surry Unit 1 and 2 design did not use the configuration which caused water jet impingement problems at other plants, and Surry was not expected to experience the baffle jet phenomenon. This circular is closed for Surry Units 1 and 2.
- v. IE Circular 80-21 concerned regulation of refueling crews. Surry Technical Specifications require an SRO to directly supervise the refueling activity and for direct communication between the manipulator crane and the control room. Surry Units 1 and 2 are in compliance with the circular. This circular is closed.
- w. IE Circular 80-22 concerned confirmation of Employee qualifications. VEPCO Security background investigations now require checks with educational institutions as a normal requirement. The personnel

department requires certification of an applicant's degree. This circular is closed for Surry Units 1 and 2.

- x. IE Circular 81-01 concerned design problems involving Honeywell push-button switches. The switches in use at Surry Units 1 and 2 are manufactured by Namco, Hagen, and Westinghouse. Similar problems have not been experienced with these switches. This circular is closed for Surry Units 1 and 2.
- y. IE Circular 81-02 concerned performance of NRC-licensed individuals while on duty. A review of Surry Administrative Procedures was conducted and the procedures were in agreement with the circular. A memo to operations personnel and a Shift Order Book entry on this subject were also initiated. This circular is closed for Surry Units 1 and 2.
- z. IE Circular 81-04 concerned the role of STA's and the importance of reporting operational events. The functional duties of the STA are defined in station administrative procedures and formal guidelines on STA interaction with station operating staff was published. Guidelines for reporting of abnormal events are provided in Administrative Procedure ADM-29, and in Emergency Plan Implementing Procedures. Written reports, licensee event reports, and plant transient reports are prepared by the Safety Engineering Staff. This circular is closed for Surry Units 1 and 2.
- aa. IE Circular 81-06 concerned deficiencies with Foxboro 10 to 50 mil iampere transmitters. The subject Foxboro transmitters are not use at Surry Units 1 and 2. This circular is closed.
- bb. IE Circular 81-10 concerned steam voiding in the RCS during decay heat removal cooldown. Surry operating and abnormal procedures were reviewed to ensure sufficient information was available to recognize voiding symptoms and to take appropriate actions. The information in the circular was incorporated in an operator training bulletin and was added to operator training lectures. This circular is closed for Surry Units 1 and 2.

#### 8. Review of IE Bulletins

- a. IE Bulletins 79-15 concerned deep draft pump deficiencies. The licensee's response for IEB 79-15 dated September 14, 1979, was reviewed. NRR, memo dated May 4, 1981, had no further questions on this subject. IE Bulletin 79-15 is closed for Surry Units 1 and 2.
- b. IE Bulletin 80-09 concerned hydramotor actuator problems with ITT General Controls models AH-90 and NH-90 series actuators. The subject actuators are not used at Surry Units 1 and 2. This Bulletin is closed.

- c. IE Bulletin 80-21 concerned valve yokes supplied by Malcolm Foundry Company, Inc. None of the subject valves are in use or planned for use in safety-related systems at Surry. This Bulletin is closed for Surry Units 1 and 2.
- d. IE Bulletin 80-23 concerned failures of solenoid valves manufactured by VALCOR Engineering Corporation. Surry does not have installed, or in stock, solenoid valves of the type described in this bulletin. This bulletin is closed for Surry Units 1 and 2.

9. Plant Physical Protection

The inspector 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.