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

Report Nos.: 50-280/78-22 and 50-281/78-22

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Licensee: Virginia Electric and Power Company
P. O. Box 2666
Richmond, Virginia 23261

Facility Name: Surry Power Station

Inspection at: Surry, Virginia

Inspection conducted: August 21-24, 1978

Inspectors: D. J. Burke
W. H. Bradford
J. J. Buzy

Approved by: R.C. Lewis 10/3/78
R. C. Lewis, Chief Date
Reactor Projects Section No. 2
Reactor Operations and Nuclear Support Branch

Inspection Summary

Inspection on August 21-24, 1978 (Report Nos. 50-280/78-22 and 50-281/78-22)
Areas Inspected: Routine, unannounced inspection of plant operations, license event reports, Unit 2 snubber inspection results, fire protection, operator requalification program, non-licensed personnel training, and followup of previously identified noncompliance and unresolved items. The inspection involved 81 inspector-hours onsite by three NRC inspectors.
Results: Of the seven areas inspected, no items of noncompliance were found in six areas; two apparent items of noncompliance were found in one area (infraction - failure to follow procedures - paragraph 5 (281/78-22-01); deficiency - LER's not submitted to NRC within required times - paragraph 5 (280/281/78-22-02)).

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DETAILS I

Prepared by: D. J. Burke 9/29/78
D. J. Burke, Reactor Inspector
Reactor Projects Section No. 2
Reactor Operations and Nuclear Support Branch
Date

Dates of Inspection: August 21-24, 1978

Reviewed by: R. C. Lewis 10/2/78
R. C. Lewis, Chief
Reactor Projects Section No. 2
Reactor Operations and Nuclear Support Branch
Date

1. Persons Contacted

Virginia Electric and Power Company (VEPCO)

*T. L. Baucom, Station Manager
*W. L. Stewart, Superintendent, Station Operations
*J. L. Wilson, Operating Supervisor
*E. P. Dewandel, Administrative Assistant
*L. A. Johnson, Supervisor, Engineering Services
*D. S. Taylor, Supervisor, Mechanical Maintenance
*G. E. Kane, Assistant Operating Supervisor
W. Quinn, Associate Chemist
M. R. Kansler, Assistant Engineer, Engineering Services

Several Control Room Operators, Shift Supervisors, QA and records personnel.

*Denotes those present at the exit interview.

2. Licensee Actions on Previous Inspection Findings Noncompliance

a. Noncompliance

(Closed) Infraction (78-16-01): Inadequate corrective actions and documentation of low fluid levels for certain hydraulic suppressors. Revisions to PT 39 and retraining of appropriate personnel have corrected this item; subsequent snubber inspections have been adequate.

(Closed) Infraction (78-16-02): Snubber inspections not performed within 31 days in accordance with the TS 4.17.A. Periodic Test 39 has been revised and now provides plant management with the information necessary to determine that snubber inspection intervals are in accordance with TS 4.17.A.

(Closed) Infraction (78-16-03): Licensee event report of certain inoperable snubbers was not submitted in accordance with TS 6.6.2.b.(2). Snubber inspection and reporting procedures have been revised, and inoperable snubbers are currently being reported as required.

(Closed) Infraction (78-16-04): Two containment isolation valve discs were modified without appropriate staff reviews and approvals. The licensee replaced the modified valve discs with qualified spares from the North Anna site, and verified operability. The station maintenance personnel have been reinstructed on the limitation of work that may be performed without engineering and staff reviews.

(Closed) Infraction (78-16-05): Unauthorized use of foreign substances as valve disc lubricants. Procedures have been revised and adminstrative memoranda issued to prohibit the use of foreign materials in valves which are leak-tested. Evaluations have been conducted and certain valves have been opened and inspected to assure that all such valves are free of foreign materials.

b. Unresolved Items

(Closed) Unresolved Item (78-13-03): Periodic Test 39 - Suppressor Inspection, has been revised and reviewed and provides: (1) more specific acceptance criteria for determining acceptable fluid level in Grinnell (PH-74) suppressors; (2) that as-found, as-left data be recorded; and (3) that any suspected deficiency be recorded for subsequent evaluation and closeout. Recent snubber inspections have been performed under Revised PT 39.

(Closed) Unresolved Item (78-16-09): The licensee has determined what scaffolding or other arrangement is needed to provide access to inaccessible suppressors to assure proper inspection, and is in the process of installing the ladders and scaffolding necessary.

(Closed) Unresolved Item (78-16-11): The inspector reviewed the licensee's survey, evaluation, and inspection results of containment isolation valves for each unit. Based on the above, the valves are considered to be free of all foreign substances.

(Closed) Unresolved Item (78-16-12): The inspector verified that an as-found and as-left inspection of the Unit 1 snubbers was performed in accordance with PT 39 prior to plant startup, and that snubber discrepancies were identified, documented, and corrected. In addition, PT 39 establishes acceptance criteria which assures snubber operability.

3. Unresolved Items

No new unresolved items were identified.

4. Exit Interview

The inspectors met with licensee representatives as indicated in paragraph 1 at the conclusion of the inspection on August 24, 1978. The inspectors summarized the scope and findings of the inspection. The item of noncompliance (infraction) in paragraph 5.i was discussed in detail with the licensee. The licensee stated that a supplement to licensee event report 281/78-013 will be submitted. In addition, the inspectors detailed some of the recent experiences which have occurred during the shipment of low-level contaminated waste.

5. Review of Reportable Occurrences

In the office, the inspector reviewed the Reportable Occurrence (RO) reports listed below to ascertain that NRC reporting requirements were being met and to determine the appropriateness of corrective action taken and planned. Certain reports were reviewed at the site to verify corrective action and determine compliance with the Technical Specifications and other regulatory requirements. The review included examination of log books, internal correspondence and records, review of SNS&OC meeting minutes, and discussions with various staff members. Within the areas inspected, two items of noncompliance were identified; one for failing to follow procedures (item i) and one for late reports (items b, c, h and i). (280/281/78-22-02)

a. LER 280/78-01, dated February 24, 1978, concerned an inoperable hydraulic snubber. A new snubber was installed and locked in place to prevent rotation.

b. LER 280/78-03, dated March 28, 1978, involved a failure on one of the boric acid system heat tracing circuits. The redundant circuit was operable and the failed wiring was replaced. The report was submitted 31 days after the event.

c. LER 280/78-06, dated April 19, 1978, concerned one branch of fire protection yard piping which was installed according to the National Fire Code, but which utilized materials that were not seismic qualified. The piping leads to the main warehouse. A design change has been initiated to upgrade the piping to the required criteria. Although initial notification was prompt, the 14 day written report was submitted one day late.

d. LER 280/78-8, dated May 23, 1978, concerned inoperability of a control room vent supply damper during shutdown. The unit operated properly during subsequent retesting.

e. LER 280/78-09, dated May 23, 1978, concerned an inoperable condenser circulating water outlet valve. The lead found lifted was reconnected and the valve functionally tested.

f. LER 280/78-10, dated May 23, 1978, concerned an inoperable main steam trip valve. Inoperability was discovered during cold shutdown and since it could not be repeated was determined to be a random event.

g. LER 280/78-12, dated June 7, 1978, concerned the possible inoperability of the inside recirculation spray pump RS-P-1A; the pump could not be rotated by hand. Since the event occurred during a refueling outage, the pump bushings were examined and replaced prior to pump operation and testing.

h. LER 281/78-08, dated March 30, 1978, concerned the apparent inoperability of a hydraulic snubber due to mechanical interference. The interference was corrected, and engineering evaluations performed to verify correct snubber installations. The thirty day reportable item was submitted 31 days after the event.

i. LER 281/78-13, dated May 12, 1978, addressed the April 8, 1978, reactor criticality on control bank "D" below the control rod insertion limits of Technical Specification (TS) 3.12.A. This event was due to errors made in the estimated critical position (ECP) calculation which led to over-dilution of the reactor coolant system. The inspector verified that a shutdown margin calculation was performed promptly after the event, and that the TS shutdown margin requirements were met during the most dilute condition. However, while reviewing the rod bank position and nuclear instrumentation charts for the event, the inspector observed that a startup and apparent criticality on bank "C" had occurred some twenty minutes prior to the reported event. This initial startup was not documented in the Shift Supervisors or Control Room Operators logbook, and only one ECP was available for the two startups. This failure to follow procedures for documenting significant events and performing ECP's is an infraction (281/78-22-01).

The inspector also reviewed certain licensed personnel actions with regard to the event (LER 78-13), and discussed the following with licensee management:

(1) There were no times, dates, or initials on the nuclear instrumentation chart (NR45) for a considerable period of time prior to, during, or after the event. Although there is no requirement to date, time or initial these charts, it is of considerable benefit in the reconstruction of events.

(2) The source range nuclear instrumentation was blocked below 10^4 cps before good overlap was established with the intermediate range instrumentation.

(3) The second startup was made with no source range channel displayed on the NR 45 strip chart; two IRM channels were selected.

(4) Emergency boration to correct the control rod bank low insertion limit alarm following the initial startup could not be verified due to the lack of records; however, according to the chemist's log, a significant increase in the primary system boron concentration did not occur until the second criticality and shutdown were completed.

The licensee stated that a supplement to LER-78-013 will be submitted.

6. Review of Hydraulic Shock Suppressor (Snubber) Inspections

The inspector reviewed snubber periodic test data contained in PT 39A and B for Unit 2 performed in June and July, 1978. Although snubbers had hydraulic fluid levels and mountings or connections which appeared inadequate (eg-fluid levels below target levels), subsequent engineering evaluation by the licensee determined that only seven snubbers were determined to be inoperable. The evaluations included verifications that snubber alignments were within ten degrees of proper orientation and that adequate fluid was available in the reservoirs for full extension of the snubber without loss of level in the reservoir. Based on this number of inoperable snubbers (7) the licensee will inspect all Unit 2 snubbers within 62 days (±25%) according to TS 4.17.A. The inspector had no further questions at this time.

7. Plant Operations

The inspector toured the Unit 1 and Unit 2 control rooms and certain plant areas to observe that monitoring equipment and plant instrumentation was functioning as required, and that the facility operations were in accordance with the Technical Specifications. Within the areas inspected, no items of noncompliance or deviations were identified.

DETAILS II

Prepared by: W. H. Bradford, Reactor Inspector, Nuclear Support Section No. 2, Reactor Operations and Nuclear Support Branch — Date: 9/ /78

J. J. Buzy, Region II Representative, Operating Licensing Branch — Date: 9/26/78

Dates of Inspection: August 21-24, 1978

Reviewed by: P. J. Kellogg, Chief, Nuclear Support Section No. 2, Reactor Operation and Nuclear Support Branch — Date: 9/26/78

1. Persons Contacted

Virginia Electric and Power Company (VEPCO)

T. L. Bacoum, Station Manager
*W. L. Stewart, Superintendent, Station Operations
*G. E. Kane, Assistant Operating Supervisor
*R. G. Smith, III-Health Physics Supervisor
*M. R. Kansler, Assistant Engineer
*J. S. Fisher, Fire Marshall
*J. A. Hanson, Jr. - Nuclear Training (Supervisor)
*D. S. Taylor, Supervisor, Mechanical Maintenance
*R. Kulp, QA Engineer
*E. P. Dewandel, Administrative Assistant
W. E. Snoberger, Assistant Supervisor, Instrumentation and Control
A. R. Lassley, Electrical Maintenance Forman
D. L. Hahn, Mechanical Maintenance Foreman
J. Edmonds, Nuclear Training Coordinator
W. Hunter, Nuclear Training Coordinator
L. Morriss, Nuclear Training Coordinator

2. Licensee Action on Previous Inspection Findings

Not inspected

3. Unresolved Items

None identified during this inspection.

4. Exit Interview

A management interview was conducted at the conclusion of the inspection on August 24, 1978, with Mr. T. L. Baucom and other licensee staff members (denoted in paragraph 1). All subjects presented in these details were discussed. The licensee acknowledgement of the inspection findings are discussed in paragraph 7.

5. Fire Protection and Prevention

a. The inspector reviewed the licensee's fire protection and prevention program to verify that controls had been established which include:

- Work control procedures which include welding and burning control.

- Plant operations approval and control of work done under the work control procedure.

- A requirement for a fire watch for welding and burning operations with capability of communication with the control room.

- A requirement for QA surveillance during maintenance and modification of fire stop penetrations seals.

- Assurance that the cable penetration sealing material is controlled and that sealing material is not substituted which could be flammable.

- Plant emergency procedures had been established which include fire fighting procedures for specific vital areas and emergency procedures which provide for orderly plant shutdown in cases of loss of normal and preferred alternate cooling.

b. The inspector reviewed the results of the latest fire insurance inspection.

c. The inspector reviewed the fire protection/prevention technical specification surveillance test requirements, the fire protection/prevention administrative controls and implementing procedures.

d. The inspector toured various areas of the facility to observe operations in progress, to inspect the general state of cleanliness, housekeeping and fire protection/prevention systems and condition. The inspector noted that in some areas there was an accumulation of paper and left over material from maintenance. The inspector also observed other potential fire hazards. These items were discussed with the licensee at the management exit interview. The licensee stated that these areas would be cleaned up and that the potential fire hazards would be removed.

e. The inspector used one or more of the following acceptance criteria for the above items:

Technical Specifications

Appendices A and B of 10 CFR 50

Regulatory Guide 1.20 "Fire Fighting (rules for Nuclear Power Plants)

Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants"

Section 3.2.3 of ANSI N45.2

Section 6 of Appendix A to Regulatory Guide 1.33

Within the areas inspected no deviations or items of noncompliance were identified.

6. Retraining and Replacement Training for NonLicensed Personnel

The inspector reviewed training related documentation and procedures and interviewed eight nonlicensed personnel to verify that the training described in Administrative Procedure 12.0, "General Employee Training", was being provided for nonlicensed personnel and met the requirements of Section 6.4 of the Technical Specifications, ANSI N18.1-1971, and Section 13.2 of the FSAR. Interviews with female employees also confirmed that information had been provided to them with regards to prenatal radiation exposure. Within the areas inspected, no discrepancies were identified.

7. Licensed Operator Requalification Program

The inspector reviewed documents and training records to verify that a requalifications training program for NRC licensed reactor operators (ROs) and senior reactor operators (SROs) had been established and was consistent with the requirements of the licensee's approved Operator Requalification Training Program, Section 6.4 of the Technical Specifications and Appendix A to 10CFR55. The inspector reviewed individual training records for eight licensed operators.

The inspector reviewed Administrative Procedure No. 12, "Qualification and Training", dated September 21, 1977. Section 5.1.4, "Requalifcation Program for Nuclear Operators" had not been up dated to conform to the requirements of the Approved Operator Requalification Program dated January 1978.

The licensee stated that section 5.1.4 of Administrative Procedure No. 12 will be revised to incorporate the changes to the Approved Operator Requalification Program.

This is open item No. 280/281/78-22-03. This item will remain open pending a review by the inspector of the final approved procedure. During the inspection, records were not available for review by the inspector for two Senior Reactor Operators (SROs) to verify that these individuals supervised the required reactivity manipulations. The licensee stated in the exit interview that these records would be made available. The licensee subsequently located and transmitted documentation for the two individuals to the Nuclear Regulatory Commission on August 30, 1978. The inspector reviewed these documents and determined that the reactivity manpulations met or exceeded the number required by the Approved Requalification Program. Within the areas inspected no items of noncompliance were identified.