

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-29/79-04

Docket No. 50-29

License No. DPR-3                      Priority --                      Category C

Licensee: Yankee Atomic Electric Company  
20 Turnpike Road  
Westborough, Massachusetts 01581

Facility Name: Yankee Nuclear Power Station (Yankee-Rowe)

Inspection At: Rowe, Massachusetts

Inspection Conducted: April 24-27, 1979

Inspectors: RP Zimmerman for                      6/18/79  
W. H. Bannack, Reactor Inspector                      date signed

RP Zimmerman                      6/18/79  
R. P. Zimmerman, Reactor Inspector                      date signed

Approved By: H. B. Kister                      6/19/79  
H. B. Kister, Chief, Nuclear Support                      date signed  
Section No. 2, RO&NS Branch

Inspection Summary:

Inspection on April 24-27, 1979 (Report No. 50-029/79-04)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of licensee action on previous inspection findings; administrative controls for surveillance procedures; surveillance testing; inspector witnessing of surveillance tests; administrative control of safety-related maintenance; review of safety-related maintenance activities; technician qualifications; and, facility tours. The inspection involved 48 inspector-hours onsite by two NRC regional based inspectors.

Results: No items of noncompliance were identified during the conduct of the inspection.

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## DETAILS

### 1. Persons Contacted

- \*R. Aron, Technical Assistant - Operations
- \*T. Danek, Operations Supervisor
- \*P. Laird, Maintenance Supervisor
  - F. Newton, Shift Supervisor
  - R. Randall, Technical Assistant - Reactor Engineering
- \*N. St. Laurent, Assistant Station Superintendent
- J. Shippee, Instrument and Control Supervisor
- \*J. Staub, Technical Assistant to Plant Superintendent

The inspector also interviewed other licensee employees including members of the technical and engineering staff and reactor operators.

\*Denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (29/77-28-05): Feedwater temperature determination. The licensee has replaced the feedwater RTD. Records, including Certification of Compliance, were verified. The feedwater RTD temperature channel has been included in the licensee's calibration program.

(Closed) Unresolved Item (29/77-28-04): Core Thermal Power Calorimetric. OP-7302 was revised February, 1978, to be performed on a weekly frequency. OP-7302 results are to verify the results of OP-4201.

(Closed) Unresolved Item (29/78-06-01): Main Coolant Pump NPSH. New Net Positive Suction Head Limit Curves for Main Coolant Pump Operation of OP2100 and OP2105 agree with Technical Specification requirements.

(Closed) Unresolved Item (29/78-06-02): Fuel Oil Transfer System. OP2100 has been revised to include a valve checkoff list.

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3. Administrative Controls for Surveillance Procedures

The inspector performed an audit of the licensee's administrative controls by conducting a sampling review of the below listed administrative procedures with respect to the requirements of the Technical Specification, Section 6, "Administrative Controls", ANSI N18.7 "Administrative Controls for Nuclear Power Plants" and Regulatory Guide 1.33 "Quality Assurance Program Requirements".

- Administrative Procedure (AP) - 0001, Plant Procedures and Instructions, Revision 8.
- AP-0041, Plant Surveillance Schedule, Revision 1.
- AP-218, Test Control, Revision 3.
- AP-0220, Surveillance Tests and Records, Revision II.
- AP-0223, Document Control, Revision 3.

No items of noncompliance were identified.

4. Surveillance Testing

- a. The inspector reviewed surveillance tests on a sampling basis to verify the following:
- Tests required by Technical Specifications are available and covered by properly approved procedures.
  - Test format and technical content are adequate and provide satisfactory testing of related systems or components.
  - Test results of selected tests are in conformance with Technical Specifications and procedure requirements have been reviewed by someone other than the tester or individual directing the test.

- b. The following surveillance tests were reviewed to verify the items identified above.
- Operating Procedure (OP) - 4214, Chemical Shutdown System Operability Check, Revision 6. Data from Attachment A (weekly) was reviewed for eleven tests performed February 5, 1979 through April 2, 1979. Data from Attachment B (monthly) was reviewed for five tests performed December 4, 1978 through March 26, 1979.
  - OP-4217, Changing System Operability Test, Revision 5. Data from Attachment A (weekly) was reviewed for eleven tests performed February 16, 1979 through April 23, 1979. Data from Attachment C (monthly) was reviewed for four tests performed February 9, 1979 through April 20, 1979.
  - OP-4220, Primary System Water Balance, Revision 4. Data was reviewed for daily tests performed February 1 through 26, 1979.
  - OP-4204, Monthly Test or Special Operation of the Safety Injection Pumps, Revision 13. Data was reviewed for eleven tests performed February 8, 1979 through April 12, 1979.
  - OP-4203, Monthly Valve Check, Revision 11. Data was reviewed for 5 tests performed December 15, 1978 through March 28, 1979.
  - OP-4207, Surveillance of the Station Power System and the Emergency Diesel Generators, Revision 10. Data was reviewed for 12 tests performed February 6, 1979 through April 24, 1979.
  - OP-4232, Vapor Container Inspection, Revision 7. Data was reviewed for six tests performed February 13, 1979 through April 11, 1979.
  - OP-4210, Fire System Operability Test, Revision 7. Data was reviewed for 13 tests performed January 29, 1979 through April 20, 1979.

- OP-4238, Test of the Control Room Ventilation Emergency Shutdown System, Revision 1. Data was reviewed for seven tests performed December 8, 1978 through April 11, 1979.
  - OP-4243, Functional Test of the Fire Suppression System. Data reviewed for test performed June 29, 1978.
- c. The following items were identified as a result of the above review:
- (1) OP 4220, Primary System Water Balance, Revision 4, considers the 24 hour Vapor Container Drain Tank (VCDT) level change as accountable leakage. Based on the various leakage paths available to the VCDT which cannot be specifically determined, it did not appear that all leakage can be considered accountable. The inspector noted that the possibility of masking a true leak may exist, by considering the above leakage accountable, when in fact, the exact source of the leakage cannot be determined. However, review of past data by the inspector considering the VCDT level change as unaccountable leakage, did not contain leakage amounts in excess of Technical Specification requirements. The licensee representative has issued a procedure change considering VCDT level change as unaccountable leakage. This item is unresolved pending licensee revision of the above procedure and subsequent NRC-RI review. (50-29/79-04-01)
  - (2) OP-4203, Monthly Valve Check, written in part to satisfy TS 4.6.1.1a.1, omitted four required manual isolation valves which, upon review, were found to be adequately covered by another surveillance procedure. The licensee conducted a review to determine if other valves should have been included in OP-4203, and found all other required valves already contained in the procedure. The licensee representative stated that the procedure would be revised to include the omitted valves. The above procedure will be reviewed during a subsequent NRC-RI inspection.

- (3) OP 4243, Functional Test of the Fire Suppression System, written in part to satisfy TS 4.7.10.1.d, requires each fire pump to produce at least 1000 gpm at a system head of 125 psig. Data from the surveillance test performed June 29, 1978, contained pump capacity values for Fire Pump No. 2 of 1091 gpm and 123 psig. The remarks section of the procedure stated that the pond, from which the fire pump takes a suction, was down in level by four feet, therefore, satisfying the 125 psig requirement (differential pressure across the pump). The inspector noted that the 125 psig requirement is for system head and not differential pressure across the pump. The licensee acknowledged the inspector's comment. When the applicable pump curve was consulted, the capacity values stated above were found to satisfy the TS requirement. The inspector had no further questions in this area.

5. Inspector Witnessing of Surveillance Test

- a. The inspector witnessed the below listed surveillance tests to verify the following:
- Surveillance test procedure was available and in use.
  - Special test equipment, if required by procedure, was calibrated and in use.
  - Test prerequisites were met.
  - The procedure was adequately detailed to assure performance of a satisfactory surveillance.
- b. The inspector witnessed the performance of:
- OP-4211, Emergency Boiler Feed Water System, Revision 7.
  - OP-4204, Monthly Test or Special Operation of the Safety Injection Pumps, Revision 13.
  - Turbine Control Valve Exercise, Revision 0.

No items of noncompliance were identified.

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6. Administrative Control of Safety Related Maintenance

The inspector reviewed the licensee's administrative procedures for the control of safety related maintenance to verify that the controls required by Technical Specifications and ANSI N18.7 and N18.1 had been established. These procedures and the above standards and specifications were then used as the acceptance criteria for the review of individual maintenance activities discussed in Paragraph 7, below. The following procedures were reviewed.

- Administrative Procedure (AP) - 5000, Maintenance Department Surveillance Schedule, Revision 5.
- AP-5002, Maintenance Department Corrective and Preventive Maintenance Program, Revision 3.
- AP5003, Maintenance Department Unanticipated Corrective Maintenance, Revision . .
- AP-5004, Control of Maintenance Department Measuring and Test Equipment, Revision 4.
- AP-5006, Training of Maintenance Department Personnel Including Initial and Annual Review Training Requirements, Revision 2.
- AP-5010, Maintenance Department Routine Corrective Maintenance, Revision 1.
- AP-0222, Job Orders, Revision 3.
- AP-0223, Document Control, Revision 3.
- AP-0001, Plant Procedures and Instructions, Revision 8.
- AP-0017, Switching and Tagging of Plant Equipment, Revision 4.
- AP-0018, Bypass of Safety Function and Jumper Control, Revision 5.

- AP-0042, Housekeeping for Maintenance and Modifications, Revision 0.
- AP-0204, Safety Classification of Systems, Components and Structures, Revision 4.
- AP-0212, Material Receipt, Revision 7.
- AP-0213, Material Identification and Control, Revision 4.

No items of noncompliance were identified.

7. Review of Safety Related Maintenance Activities

- a. The inspector reviewed specific safety related maintenance activities conducted at the facility on a sampling basis to verify the following:
  - The limiting condition for operation was met while components/systems were out of service.
  - Required administrative approvals were obtained prior to initiating work.
  - Approved maintenance procedures were used as required by the task.
  - Maintenance activities were inspected in accordance with the licensee's requirements.
  - System/Components were functionally tested and/or calibrated prior to return to service.
  - Applicable quality control records were available.
  - Maintenance activities were accomplished by qualified personnel.
  - The circumstances of the maintenance were reported as Reportable Occurrences, if required by Technical Specifications.

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b. The following maintenance activities, including associated maintenance requests, procedures, and functional tests, were reviewed.

- Job Order (JO) 79-55, No. 1 Charging Pump Relief Valve leak.
- JO 79-30, SA-MOV-511 not operational electrically.
- JO 79-17, Pressurizer vent line blank flange leak.
- JO 79-08, No. 2 Charging Pump Recirculation Valve leak.
- JO 79-13, No. 2 HPSI Pump Control Switch not working properly.
- JO 79-42, Repiping of the Turbine Throttle and Control Valve Stem Leakoff Headers.
- JO 79-51, No. 1 Diesel Day Tank Fill Line-fusible link cable requires tightening.
- JO 79-28, No. 2 Control Rod Inoperable.
- JO 78-286, TV-604 (SI) does not close tightly.
- JO 78-285, Emergency Boiler Feed Pump Throttle Valve leaks by.
- JO 78-275, No. 1 Component Cooling Pump repacking.
- JO 78-122, Addition of plug connectors on ECCS MOV breaker compartment.
- JO 78-123, Rerouting Charging Pump Relief Valve discharge.
- JO 78-124, Diesel Generator Alarm Modification.
- JO 78-79, LPSI Pumps Mechanical Seal Installation.

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- JO 78-78, Refurbish Spare Charging Pump Relief Valve.
- JO 78-65, Removal of water filters from diesel generator.
- JO 78-225, Safety Injection Accumulator Safety Valve leak.
- JO 78-105, No. 3 Intermediate Range - Nuclear Instrumentation Operations/Test Selector Switch defective.
- JO 78-222, Pressurizer Pressure Transmitter repair.
- JO 78-245, Main Coolant Pressure Detector repair.
- JO 78-308, Vapor Container Main Coolant Leakage Air Particulate Monitor.
- JO 78-226, Accumulator Check valve SI-V-612 leaking.

c. During the above review, the inspector noted that AP-5010, Maintenance Department Routine Corrective Maintenance, serves as a generic procedure which is used frequently for some of the more basic safety related maintenance activities. AP-5010 did not contain documentation by the Operations Department for granting permission for release of equipment for maintenance. However, Operations Department knowledge of the maintenance activities was evident through the licensee's controls for tagging equipment out of service, and jumper placement, which require Operations Department approval. The licensee representative stated that a change would be issued to the above procedure requiring Shift Supervisor (Operational) sign off, granting permission for release of equipment for maintenance. Maintenance activities performed with AP-5010 will be reviewed during a subsequent inspection.

#### 8. Technician Qualifications

The inspector reviewed the qualification records of selected technicians having responsibility for surveillance testing and maintenance of safety related components to verify that the

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individuals experience and training were in accordance with ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel."

9. Facility Tour

The inspector toured the facility on various occasions during the inspection. Areas toured included the turbine building, safety injection equipment areas, battery rooms, and portions of the security fence. The inspector also observed control room operation on both day and evening shifts for proper control room manning, and facility operation in accordance with selected Administrative and Technical Specification Requirements.

No items of noncompliance were identified.

10. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable, an item of noncompliance, or a deviation. An unresolved item identified during the inspection is discussed in Paragraph 4.

11. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection of March 27, 1979. The purpose, scope, and findings of the inspection were summarized.

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