

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

Region I

Report No. 79-03

Docket No. 50-029

License No. DPR-3 Priority -- Category C

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

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

Inspection at: Rowe, Massachusetts

Inspection conducted: April 22-25, 1979

Inspectors: *W. J. Lazarus*  
W. J. Lazarus, Reactor Inspector

6/18/79  
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Approved by: *R. R. Keimig*  
R. R. Keimig, Chief, Reactor Projects Section  
No. 1, RO&NS Branch

6-19-79  
date signed

Inspection Summary:

Inspection on April 22-25, 1979 (Report No. 50-29/79-03)

Areas Inspected: Routine unannounced inspection by a regional based inspector of plant operations, including a tour of accessible areas, a review shift logs and operating records, and operability of Emergency Safeguards Systems; review and onsite followup of Licensee Event Reports. (LER's); followup on selected IE Bulletins and Circulars; and, followup on previous inspection findings. The inspection involved 29 inspector-hours on site by one regional based NRC inspector.  
Results: No items of noncompliance were identified.

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## DETAILS

### 1. Persons Contacted

- H. Autio, Plant Superintendent
- T. Danek, Operations Supervisor
- M. Ebert, Reactor Supervisor
- P. Laird, Maintenance Supervisor
- \* J. Staub, Technical Assistant to the Plant Superintendent
- \*N. St. Laurent, Assistant Plant Superintendent

The inspector also interviewed several licensed operators and members of the technical and administrative staffs.

\* denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Followup item (29/77-30-01): The inspector verified that OP-4611 had been revised to add precautions to operators on removing pressurizer level channels from service.

(Closed) Unresolved item (29/78-07-01): Closing time requirements for solenoid operated containment isolation valves have been determined to be valid. OP 4216-7 has been revised to add the timing requirements for these valves.

(Closed) Noncompliance (29/78-10-02): Failure to Identify Nonconforming Cable Penetration Seals. The inspector verified that this item had been reviewed by the licensee and that corrective action had been completed in accordance with letter WYR 78-72 of August 2, 1979.

(Closed) Unresolved item (29/79-01-01): The inspector verified that OP 4702, Attachment N, had been revised to reflect the increased piping volume which was the result of the addition of emergency feedwater lines to the blowdown piping.

### 3. Shift Logs and Operating Records

The inspector reviewed the following plant procedures to determine the licensee established administrative requirements in this area in preparation for review of various logs and records.

- AP-0003, Plant Operations Review Committee Responsibilities and Authorities, Revision 3.
- AP-0004, Plant Information Reports, Revision 3.
- AP-0017, Switching and Tagging of Plant Equipment, Revision 4.
- AP-0207, Equipment Control, Revision 1.
- AP-0018, Bypass of Safety Function and Jumper Control Log, Revision 5.
- AP-0021, Operating Memos, Revision 3.
- AP-2007, Maintenance of Operations Department Logs, Revision 4.
- AP-0216, Housekeeping and Cleanliness Control, Original.
- AP-0042, Housekeeping for Maintenance and Modifications, Original.

The above procedures, Technical Specifications, ANSI N18.7-1972 "Quality Assurance Requirements for Nuclear Power Plants" and 10 CFR 50.59 were used by the inspector to determine the acceptability of the logs and records reviewed.

- b. Shift logs and operating records were reviewed to verify that:
- Control Room logs and shift surveillance sheets are properly completed and that selected Technical Specification limits were met.
  - Control Room log entries involving abnormal conditions provide sufficient detail to communicate equipment status, lockout status, correction, and restoration;
  - Log Book reviews are being conducted by the staff;
  - Operating or Special orders do not conflict with Technical Specifications requirements;
  - Jumper (Bypass) log does not contain bypassing discrepancies with Technical Specification requirements and that jumpers are properly approved and installed.
  - Plant Information Reports confirm that there is no violation of Technical Specification requirements.

c. The following plant logs and operating records were reviewed.

- Shift Supervisor's Control Room Log: March 1 - April 25, 1979.
- Operating Memos: 2E-1, 20-1, 2R-22, 2S-12, 2U-4, 2Z-3.
- Special Orders: 344, 346, 347, 349, 350, 351, and 352.
- Bypass of Safety Function and Jumper Control Log Requests: 79-10 through 79-76 (effective).
- Switching and Tagging Orders: 79-68 through 79-321 (effective).
- Plant Information Reports: 79-1 and 89-2.
- PORC Minutes: 79-2 through 79-20.

No items of noncompliance were identified.

#### 4. Plant Tour

The inspector conducted a tour of accessible areas of the plant including the Primary Auxiliary Building, Turbine Building, Safety Injection Building, Switch Gear Room, Diesel Rooms, Control Room, Spent Fuel Building, Radwaste Building, and HP Control Point Area. Details and findings are noted below.

##### a. Monitoring Instrumentation and Annunciators

Control Board annunciators were checked for alarms, abnormal for plant conditions, on several occasions during the inspection. None were identified. The following monitoring instrumentation was checked to verify that required instrumentation was operable and that, where applicable, values indicated were in accordance with Technical Specifications.

- Pressurizer pressure, level, and temperature
- Charging flow
- Bleed flow
- MCS Tavg., Tc, and TH
- MCS flow
- SI tank level

- PWST and DWST levels
- Feedwater flow
- Batteries 1, 2 and 3 bus voltages
- Stack Gas Radiation Monitor
- SI Accumulator pressure and level

No abnormal annunciators were energized. No items of noncompliance were identified.

b. Radiological Controls

Radiation controls established by the licensee, including posting of radiation areas, radiological surveys, condition of step-off pads, and the disposal of protective clothing were observed for conformance with the requirements of 10 CFR 20 and OP-8100, "Establishing and Posting Controlled Areas," and OP-8101, "Plant Radiological Surveys."

No items of noncompliance were identified.

c. Plant Housekeeping

Plant housekeeping conditions, including general cleanliness and storage of materials to prevent fire hazards were observed in all areas toured. Housekeeping and cleanliness were good. No items of noncompliance were identified.

d. Fluid Leaks and Piping Vibration

Systems and equipment in all areas toured were observed for the existence of fluid leaks and abnormal piping vibration. None were identified.

e. Pipe Hangers/Seismic Restraints

Pipe hangers and restraints installed on various piping systems through the plant were observed for proper installation and tension.

No discrepancies were identified.

f. Equipment Caution/Lockout Tags

The inspector verified that tags associated with the following tag orders were in place and that the equipment was in the condition indicated by the tags:

79-189, MC Loop Isolation Valves  
 79-192, SI-MOV-22, 23, 24, 25  
 79-193, CS-MOV-534, 536, 537, 538, 539

No discrepancies were identified.

g. Control Room Manning/Shift Turnover

Control Room Manning was reviewed for conformance with the requirements of 10 CFR 50.54(k) and Technical Specifications. The inspector verified, several times during the inspection that appropriate licensed operators were on shift. Manning requirements were met at all times. Several shift turnovers were observed during the course of the inspection. All were noted to be thorough and orderly.

h. Safeguards System Operability

The inspector performed a valve lineup verification for all valves in the Safety Injection systems which could affect the operability of the systems, up to the point where the injection piping entered the shielded pipe tunnel. Plant drawing M-7, "Safety Injection System" was used as reference. All valves inspected were properly positioned for system operability.

No items of noncompliance were identified.

i. Fire Protection System Operability

The inspector performed an inspection of Hose Houses 11, 12, and 15 and verified that Fire Main isolation valves FS-V-640, 643, and 644 were open as required by Technical Specification 3.7.10.

No items of noncompliance were identified.

5. In-Office Review of Licensee Event Reports (LER's)

The inspector reviewed LER's received in RI office to verify that details of the events were clearly reported including the accuracy of the description of cause and adequacy of corrective action. The inspector also determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted on-site followup. The following LER's were reviewed:

- 79-1, V.C. Air Particulate Monitor Failure
- \*-- 79-2, Stuck Control Rod
- 79-3, Steam Generator Water High Chloride
- 79-4, Rod Position Indicator Light Failure
- 79-5, TV-408. Failed Type C Leak Test
- \*-- 79-6, Cracked Fire Main
- 79-7, Steam Generator Water High Chloride
- \*-- 79-8, Inoperable Control Rod
- 79-9, Steam Dump Valve Failed to Operate
- 79-10, Primary Vent Stack Iodine Monitor Failure
- 79-11, SI Accumulator Cover Pressure Greater than 15 psig.

Except as noted below for those LER's identified by (\*), the inspector had no further questions in this area.

#### 6. On Site Licensee Event Followup

For those LER's selected for on site followup, the inspector verified that reporting requirements of Technical Specifications and Regulatory Guide 1.16 had been met, that appropriate corrective action had been taken, that the event was reviewed by the licensee as required, and that continued operation of the facility was conducted within Technical Specification limits. The review included discussions with licensee personnel, review of PORC meeting minutes, Plant Information Reports (in-house reports), and applicable logs. The following LER's were reviewed on site.

- 79-2, Stuck Control Rod

The inspector followed up on this malfunction shortly after the occurrence. The malfunction could not be duplicated and is suspected to be due to corrosion product buildup in the mechanism. Repeated rod drop timing tests for all rods were performed and all drop times were acceptable.

- 79-6, Cracked Fire Main



Investigation by the licensee indicated that the fire main cracked at a point of high stress due to a large stone which had been used in the back fill of the pipe trench and which was in contact with the pipe. Following repair of the crack, all the large stones were removed prior to refilling the trench.

-- 79-8, Inoperable Control Rod

The cause of the malfunction was due to wear and galling at the interface of the lift latch support tube and guide tube. The inspector reviewed the maintenance documentation associated with the replacement of the mechanism with a spare. No previous failures of this type have been experienced by the plant. Routine control rod operability surveillance testing has not indicated any similar malfunctions since the plant resumed operation.

7. IE Bulletins and Circulars

Licensee action concerning the following IE Bulletins and Circulars was reviewed by the inspector to verify that:

- The Bulletin or Circular was forwarded to appropriate onsite management;
- A review for applicability was performed;
- Information submitted in the licensee's response (if required) was accurate; and,
- Corrective action (if required) was adequate

IEC 78-13, Inoperability of Multiple Service Water Pumps

This circular was reviewed and determined not to be a concern at Yankee-Rowe. Ice clogging of Service Water suction has not happened at the plant in eighteen years of operation. Divers make routine checks for silt accumulation at the intake structure.

IEC 78-15, Tilting Disc Check Valves

The licensee's evaluation of this circular indicates that Anchor-Darling check valves are not installed in any safety related systems and that those check valves used are installed per the manufacturer's recommendation.



## IEC 78-16, Malfunctioning of Limitorque Valve Actuators

The inspector reviewed the licensee's evaluation of this circular which was in the form of a memo dated August 18, 1978, from one of the plant staff Technical Assistants. The memo identified one safety related valve with this type of operator but indicated that it is not operated by hand which should eliminate concern about this type of malfunction.

## IEC 79-02, Failure of 120 Volt AC Power Supplies

The inspector reviewed the licensee's evaluation of this circular contained in a memo dated January 23, 1979, which concluded that the concerns of the circular were not applicable at Yankee-Rowe due to their use of motor-generator sets in lieu of static inverters for vital AC power supplies.

## IEB 79-03, Weld Defects in Stainless Steel Piping

The inspector reviewed receipt inspection documentation for Material Purchase Requests 76-5Q/A11, 76-69Q/AZ, 76-78 Q/A9, 77-6 Q/A8, 78-1Q/A11, 78-39Q/A12, 78-6 Q/A1, 78-8 Q/A16, 78-10 Q/A16, and 79-1 Q/A4, to verify that ASME SA 312 pipe had not been procured for use in the plant as indicated in the licensee's response, WYR letter 79-41 dated April 4, 1979. No indications of use of this type of piping were identified.

The inspector had no further questions concerning the licensee's evaluation of these items.

8. Emergency Boiler Feedwater System Operability

The inspector verified that, as required by IE Bulletin 79-06, an additional operator had been assigned on each shift specifically for operation of the Emergency Boiler Feedwater (EBF) System if it became necessary. An interview with one of the operators so assigned, indicated that he was familiar with his duties and the operation of the EBF System.

During an inspection of the EBF System, the inspector verified that the following valves were in the proper positions:

EBF-V-807, 808, 809, 810: Closed  
 EBF-V-800: Locked Open  
 EBF-V-804: Open

No items of noncompliance were identified.

9. In-Office Review of Monthly Statistical Reports

The inspector reviewed the licensee's Monthly Statistical Reports for the period January - March, 1979 to verify that reporting requirements were being met.

No reporting inadequacies were identified.

10. Exit Interview

The inspector met with licensee representatives (see detail 1 for attendees) at the conclusion of the inspection to discuss the scope and findings of the inspection as detailed in this report.