

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No.: 50-293/85-01  
Docket No.: 50-293  
License No.: DPR-35 Category: C  
Licensee: Boston Edison Company  
800 Boylston Street  
Boston, Massachusetts 02199  
Facility: Pilgrim Nuclear Power Station  
Location: Plymouth, Massachusetts

Inspection Dates: January 1-31, 1985

Inspectors: J. E. Tripp  
for J. Johnson, Senior Resident Inspector

2/15/85  
Date

J. E. Tripp  
for M. McBride, Resident Inspector

2/15/85  
Date

J. E. Tripp  
for G. Meyer, Project Engineer

2/15/85  
Date

J. E. Tripp  
for J. Shedlosky, Senior Resident Inspector,  
Millstone Units 1 and 2

2/15/85  
Date

Approved By: J. E. Tripp  
L. Tripp, Chief, Reactor Projects  
Section 3A, DRP

2/15/85  
Date

Inspection Summary: Inspection on January 1-31, 1985 (Report No. 50-293/85-01)

Areas Inspected: Routine unannounced safety inspection of plant operations including: Followup on previous findings, operational safety verification, events, surveillance testing, maintenance and modifications, health physics, housekeeping activities, control room drawings, and management meetings. The inspection involved 293 inspector-hours by three resident and one region-based inspectors.

Results: Two violations were identified (failure to properly staff the control room, Paragraph 3.b; and failure to perform required surveillance testing, Paragraph 5.b). Additionally, concerns were identified regarding (1) a program for controlling overtime (Paragraph 3.b.(4)), (2) inaccuracies in a computer program used to calculate drywell to torus leak rate (Paragraph 5.b.(1)), and (3) the application of deficiency stickers on the post accident monitoring panel (Paragraph 6.b.(3)).

## DETAILS

### 1. Persons Contacted

Within this report period, interviews and discussions were conducted with members of the licensee and contractor staff and management to obtain the necessary information pertinent to the subjects being inspected.

### 2. Followup on Previous Inspection Findings

(Closed) Unresolved Item (83-06-02): Revise method of testing the Automatic Depressurization System (ADS) logic to ensure operability during testing. On January 11, 1985, the inspector observed testing of the ADS logic in the control room in accordance with procedure No. 8.M.2-2.10.9.1, Revision 7. This procedure had been revised to perform testing while maintaining system operability. However, a procedure prerequisite provided the statement that the DC supply fuses will be removed to preclude energizing the solenoids. Following additional licensee review this was deleted in Revision 8, and approved by the ORC on January 12, 1985. This item is resolved and closed.

(Closed) Follow Item (83-07-01): Review licensee's overtime policy with respect to NRR Generic Letter 82-12 dated June 15, 1983. The licensee incorporated overtime guidelines which were consistent with Generic Letter 82-12 into Procedure No. 1.3.34, "Conduct of Operations," Revision 5, December 21, 1984. However, no methods of implementing the procedural limits were developed. This item is closed for administrative purposes and will be tracked under Item 85-01-01, which is discussed in Section 3.b of this report.

(Closed) Follow Item (83-09-05): Review the preventive maintenance (PM) program for 480V General Electric AK-2 breakers. The inspector reviewed the licensee's upgraded PM program specified in Procedure No. 3.M.3.6. Specific reference is made to the vendor technical manuals and specific instructions are provided as to the method of cleaning and lubricating the breakers. The inspector also noted that the licensee (and its vendor, GE) overhauled and rebuilt these circuit breakers (including new bearings and brushings) during the most recent outage in accordance with TP 84-212. The licensee's electrical maintenance staff is continuing to evaluate vendor supplied information to further upgrade the program. The inspector had no further questions. This item is closed.

(Closed) Follow Item (83-09-06): Review once-per-cycle testing of the Anticipated Transient Without Scram (ATWS) system. The inspector verified that the full system integrated test had been scheduled for the refueling outage and was conducted on December 22, 1984 in accordance with Procedure No. 8.M.1-30. No concerns were identified. This item is closed.

(Closed) Follow Item (83-39-03): Review licensee evaluation of drywell-to-torus vacuum breaker leak rate test. Calculated leak rates from tests conducted on December 31, 1984 and January 1, 1985 were reviewed by the licensee and found to be inaccurate, due to errors in a computer program. This item is discussed further in Section 5 of this report.

(Open) Unresolved (84-39-04): Review the licensee's basis for allowable Main Steam Isolation Valve (MSIV) closing times. On January 25, 1985, the inspector discussed the closing time specified in Procedure No. 8.7.4.4 (3.5-5.5 seconds) with the designated licensee representative. The licensee did not provide an acceptable explanation as to why the time differed from the TS value (3-5 seconds).

The station manager and the inspector reviewed past procedure change information as well as previous NRC inspector review of this issue (see NRC Reports 79-04 and 79-21, Unresolved Item No. 79-04-02). The inspector also reviewed FSAR Section 4.6.4, and 14.7.1.5 regarding MSIVs and the steam line break accident analysis.

The inspector again questioned whether the licensee was misapplying a .5 second time (from flow restrictor differential pressure sensing to isolation signal generation) and erroneously adding it to the time in the TS for use in periodic timing from the control room.

The latest tests performed on December 24, 1984 show MSIV times ranging from 3.4 to 5.4 seconds with two valves (AO-203-1B and AO-203-2D) having times of 5.3 and 5.4 seconds. The inspector concluded that this was not an immediate safety concern because the FSAR (Sections 4.6.4 and 14.7.1.5) uses an assumed time of 10.5 seconds. This item remains open pending further review by the licensee.

### 3. Operational Safety Verification

#### a. Scope and Acceptance Criteria

The inspector observed control room operations, reviewed selected logs and records, and held discussions with control room operators. The inspector reviewed the operability of safety-related and radiation monitoring systems. Tours of the reactor building, turbine building, torus internals, station yard, switchgear rooms, SAS, HPCI room, RCIC room, diesel generator rooms, battery rooms, and control room were conducted.

Observations included a review of equipment condition, security, house-keeping, radiological controls, and equipment control (tagging).

These reviews were performed in order to verify conformance with the facility Technical Specifications and the licensee's procedures.

b. Findings

- (1) On January 3, 1985, the licensee's Compliance Group Leader informed the inspector of the initiation of a Failure and Malfunction Report regarding unusual readings from radiation dose monitoring badges provided to two contractor workers during the month of December, 1984.

The inspector reviewed the details of information known to date with the licensee's Chief Radiological Engineer, and forwarded this information to the NRC:Region I personnel.

This matter was subsequently reviewed by a Region I Radiation Specialist and the findings will be included in Inspection No. 85-02.

- (2) On January 4, 1985 at 9:48 pm, and on January 14, 1985 at 7:45 am, the lock on a non-technical specification non-security fire door, 181 (turbine deck to Administrative Building corridor) was found taped open. The licensee stated that the door was required to be locked and was inoperable in the taped condition. The licensee promptly checked the door and stated that painters in the area at the time of the second incident were cautioned to keep the door locked. The inspector found no additional instances of tampering with fire doors during the inspection period. The inspector had no further questions at this time.
- (3) On January 5, 1985 and January 7, 1985, the inspector reviewed the licensee's actions during backshift hours, in particular, performance in the control room. Routine surveillance, maintenance, and reactor startup activities were observed. Procedures were being reviewed, and appropriately implemented. A trainee took the reactor critical and was properly supervised by a licensed operator and senior operator. No items of concern were noted with respect to a professional atmosphere or procedural adherence, however, a concern regarding overtime is discussed below.
- (4) On January 5, 1985 at 11:20 am, the inspector entered the control room and observed an Instrument and Control technician sitting with his head down and eyes closed, apparently sleeping in a chair. The control room was quiet at the time and the technician sat in this position for several minutes near the front of the 904 and 905 panels.

The inspector questioned the control room supervisor about the individual and could not determine whether the supervisor considered sleeping in the control room acceptable or not. The inspector subsequently discussed the incident with the Watch Engineer, who stated that sleeping in the control room was unacceptable and that the technician's supervisor had been promptly notified.

The inspector discussed the incident with the Chief Operating and Maintenance Engineers. Both investigated the incident, but could not verify that the technician was actually sleeping. The Chief Operating Engineer stated that the control room supervisor had been counseled. The Chief Maintenance Engineer stated that the technician was apparently waiting at the end of his shift in the control room to start a surveillance and that future waiting would be done outside the control room.

The inspector noted that the technician had worked three sequential 13-hour days (including January 5, 1985). The licensee stated that one hour of each day was used for shift turnover and that the overtime limit of 24 hours worked in each 48-hour period in Procedure No. 1.3.34 had not been exceeded. However, the licensee also stated that there was currently no system in place to ensure that this limit was complied with.

In related discussions, the Chief Operating Engineer also stated that no system was in place to ensure that the overtime limits (particularly the 24-hour limit in a 48-hour period) in Procedure No. 1.3.34 were complied with. The inspector reviewed operator work records and noted that two licensed operators had worked 25 hours in a 48 hour period during the week ending December 29, 1984 without getting the approval required by procedure 1.3.34.

The licensee stated that a system to track work hours to ensure conformance with the overtime limits for safety related work in procedure 1.3.34 would be developed. The inspector expressed concern that the licensee had recently revised Procedure 1.3.34 to include additional overtime limits, but had failed to develop a system for complying with the limits. This item will be reviewed during a future inspection to ensure that an appropriate overtime tracking system is implemented (Unresolved Item 85-01-01).

- (5) On January 8, 1985 at about noon, the licensee calculated the drywell floor sump leak rate for the first time following the reactor startup on January 7, 1985. The licensee stated that the operators had forgotten to pump the sumps earlier in the day and that a Failure and Malfunction Report had been filled out for the incident. An NRC:NRR letter dated December 4, 1984 (which approved startup from the 1984 piping replacement outage) recommended determining unidentified leakage in the drywell every four hours.

The inspector verified that the licensee determined unidentified leakage (i.e. pumped the drywell floor sump) every four hours during plant operation in the rest of the inspection period (less than 0.6 gpm). This incident is licensee identified and is considered an isolated case. The inspector had no further questions at this time.

- (6) On January 11, 1985, with the reactor at about 35% power, the inspector noted that feedwater flow was erratic and that this caused oscillations in reactor power (APRM) and main steam pressure. No safety concern was identified but the licensee determined that the feedwater regulating valves were sluggish and on January 17, 1985 reduced power from 75% to 38% to repair them. Subsequent operation was noted to be much smoother without such severe oscillations. The inspector had no further questions.
- (7) During the month of January, 1985 while the reactor was in the startup mode and at power, the inspector noted that the Nuclear Operations Supervisor (NOS) routinely relieved the licensed operator at the 905 panel in the control room. During these periods, the operator left the reactor controls to check back panels and use the control room kitchen or control room bathroom.

This activity is consistent with procedure 1.3.34, which indicates that the NOS may relieve the operator at the controls only for brief periods of times. However, 10 CFR 50.54 requires that a licensed operator or senior operator be maintained at the reactor controls at all times in addition to the senior operator designated to be "in the control room".

The inspector also questioned whether the control room bathroom should be considered part of the control room because the control panel annunciators cannot be heard from inside the bathroom with its door closed. While the plant page is audible from inside the bathroom and could be used to notify the senior operator of deteriorating plant conditions in an emergency, the operator might have to leave the reactor controls to page, or get the senior operator, if the page was not functioning. The senior operator designated to be "in the control room" routinely used the bathroom while the reactor was in the startup mode and at power.

Failure to maintain: 1) a licensed operator at the reactor controls at all times in addition to the senior operator designated to be "in the control room" and 2) a senior operator in the control room while the reactor was in startup and at power is a violation of 10 CFR 50.54(m)(2)(iii) (85-01-02).

- (8) On January 13, 1985 at 1:10 pm, the licensee declared the "B" offgas radiation monitor (1705-3B) inoperable and tripped it downscale after it had generated spurious upscale signals. The inspector verified that the monitor was tripped and that the remaining monitor appeared normal. No indications of increased releases of radioactive material were noted on the main stack monitors at this time. The licensee stated that a maintenance request had been promptly initiated to fix the monitor and that it was returned to service at 9:24 pm on January 13. The inspector had no further questions.

- (9) On January 22, 1985 at about noon, the inspector noted that the "B" loop safety valve (PSV-1105-B) for the standby liquid control system was covered with boron crystals. The "A" loop valve was clean, with no visible crystals. The licensee stated that the crystals formed on the valve during testing at the beginning of January and that the valve was fully operational. The licensee further stated that the crystals would be promptly removed from the valve. The inspector had no further questions. Periodic review of the housekeeping in the area will be performed during future routine inspections.
- (10) During a tour of the reactor building on January 21, 1984, the inspector noted that several pieces of fibrous board material protecting cable trays throughout the building had broken pieces and were, most probably, due to past construction activities in the areas.

The licensee's fire protection officer stated that an engineering support request had previously been sent to the engineering department for an evaluation of the condition of the boards. The licensee's review indicated that the conditions were acceptable. The inspector had no further questions at this time. The licensee stated that a copy of the evaluation would be provided to the inspector for review.

- (11) At 11:52 pm on January 28, 1985, the licensee secured the 'A' recirculation pump as part of a preplanned maintenance activity which included changing the brushes on the motor-generator set. Following maintenance, the pump was restarted at 2:28 am on January 29, 1985. The licensee reported these actions to the NRC via the ENS system because of license condition E. which requires that the plant be placed in hot shutdown in 24 hours if operating on only one recirculation loop.

The inspector reviewed the licensee's actions and had no questions.

- (12) On January 10, 1985, the inspector walked down portions of the High Pressure Coolant Injection (HPCI) system, comparing the HPCI valve checklist (Procedure 2.2.21, Revision 22) and the HPCI P&ID drawings (M243, Revision E5 and M244, Revision E5) with the installed hardware configuration. The inspector found the information on the valve checklist and the P&IDs to be greatly improved over the information on previous editions reviewed on a similar HPCI walkdown three weeks ago. The inspector found no errors in the P&IDs, the checklist or the positioning of the valves. The inspector noted that the lack of any organized sequence (e.g., numerical order, location, etc.) in the 17 page checklist requires additional time by the operators positioning the valves and verifying the position to find the valve listing in the checklist. The inspector discussed this comment with the licensee and had no further concerns.

#### 4. Followup on Events and Nonroutine Reports

##### a. Events

- (1) At 2:30 am on January 1, 1985, the 'A' Standby Liquid Control System (SBLC) pump discharge relief valve lifted low (600 psig vs. 1425 psig) during a routine surveillance test. Debris (pieces of a rubber glove and masking tape) were found in the discharge of the 'B' pump (and in the piping as well as the storage tank and the test tank).

At 3:00 am on January 1, 1985, a plant shutdown was initiated and the NRC was appropriately notified. The inspector verified the reactor to be in the cold shutdown condition by 1:21 am on January 2, 1984.

The licensee drained the entire storage tank and temporarily kept the borated solution in heated shipping cask liners on the refueling floor until the piping was flushed. The inspector observed the inside of the storage tank and noted its cleanliness prior to re-filling.

Following flushing of the SBLC system and post maintenance testing, the reactor was taken critical at 9:07 pm on January 7, 1985. The inspector discussed this event with a licensee investigator who interviewed licensee personnel as to the source of debris. The cause was not determined but a recommendation was made to improve the use of covers on the test and storage tanks.

Further review of the licensee's LER will be performed in a future routine inspection.

- (2) On January 2, 1985 during a plant shutdown, the licensee noted that the temperature indicator for the 'A' main steam line safety relief valve (SRV) tailpipe increased. The licensee could not determine whether the valve actually lifted and replaced the temperature element and a solenoid valve during the January 2-7 outage. During the subsequent startup, the SRV tailpipe temperature was elevated until the valve was cycled at 600 psig. The tailpipe temperature decreased to normal as the valve apparently seated. No indication of leakage was noted on the SRV acoustic monitor, which was tested at 600 psig. The licensee has conducted an evaluation and has reviewed these indications with the valve manufacturer. No safety concerns have been identified to date. Proper operation of SRVs will continue to be reviewed in routine inspections.
- (3) On January 9, 1985 (with the reactor at power but with the drywell not yet inerted with nitrogen), the licensee made a drywell entry to modify (remove) a guide for a small bore (1 inch) recirculation



flow instrumentation line. The inspector followed up on these actions to determine the nature of the problem and determine whether there were any possible generic implications of the event.

The licensee received a phone call on January 9, 1985 from representatives of their engineering department and the piping design organization (Bechtel Power Corporation) that one section of piping (from the 'B' loop flow transmitter, 261-6C&D) could possibly become overstressed with thermal expansion of the large diameter recirculation piping. The licensee's onsite review committee reviewed Temporary Modification T.M. 85-04 and station maintenance personnel implemented the pipe guide removal on the evening of January 9, 1985. The pipe was not found to be stressed and had one eighth inch clearance for free movement.

The inspector reviewed T.M. 85-04 and discussed the event with the Watch Engineer. Following this discussion, the Watch Engineer initiated a Failure and Malfunction Report to ensure that the proper notifications and evaluations were performed.

The inspector held further discussions with the licensee's recirculation piping replacement project manager. The piping guide in question (PG-11) was installed in accordance with G.E. installation drawing SK 720.01, Sheet 1 of 2, Revision 8, dated October 15, 1984. This guide was added following the addition of vent valves at the high point of this one inch line and had received a review for acceptable stress by the design organization (Bechtel) on site prior to plant startup in December, 1984. The licensee subsequently received a letter from Bechtel (10394-BLE-3453) dated January 15, 1985 stating that final stress analyses and drawing review recommended removal of this pipe guide even though additional analysis (taking into account a one eighth inch clearance) would probably show acceptable results.

The licensee stated that the ASME Code, Section IWA 7000, W80 addenda, did not require a detailed stress analysis for pipe and fittings one inch and smaller, however, their program required the design group (Bechtel in this case) to perform this analysis. The inspector questioned the licensee as to why a final piping stress calculation was being performed on January 14, 1985 after the system was returned to service on December 24, 1984. The licensee has requested this information from Bechtel Power Corporation and it will be reviewed by the inspector in a future inspection (85-01-03).

- (4) At 7:35 pm on January 10, 1985, the watch in the Secondary Alarm Station (SAS) received a telephone call stating that a bomb was going off in 35 seconds. No bomb or unusual package was found. All vital areas and the protected area perimeter were searched with negative results.

The inspector observed the licensee's actions and discussed the event with the security force supervisor and Watch Engineer on duty at the time. The inspector also discussed further investigation efforts with licensee personnel on January 21, 1985. The inspector had no further concerns or questions at this time.

- (5) At 2:00 pm on January 11, 1985, the licensee declared the High Pressure Coolant Injection System (HPCI) inoperable while performing a routine test from the alternate shutdown panel. The licensee initiated a maintenance request to investigate and found that the HPCI steam supply valve (2301-3) was not operating smoothly because it was jamming on its back seat. Licensee corrective action was to reset the position limit switches to keep the valve from coasting into the backseat. Following repairs, the valve was tested several times successfully.

The inspector verified that alternative testing was performed as required and that post maintenance operability testing of the HPCI system was performed at 10:00 pm on January 11, 1985. The inspector had no further questions.

b. Review of Licensee Event Reports (LER's)

Licensee Event Reports submitted to the NRC:Region I office were reviewed to verify that the details were clearly reported and that corrective actions were adequate. The inspector also determined whether generic implications were involved and if on site followup was warranted. The following reports were reviewed:

<u>No.</u>	<u>Subject</u>
83-36	Control Rod Drive No. 30-51 (update report)
84-17	Unplanned Diesel Generator Start due to loss of off-site power.
84-18	LPCI injection valve MO-1001-28A inoperable motor operator.
84-19	Reactor vessel level divergence of 'A' instrumentation
84-20	Containment isolation due to a leaking LPCI valve and other inoperable LPCI valves.

The events surrounding LER's 84-17 and 84-19 are described in NRC Report No. 84-39. The inspector reviewed details of licensee action regarding LER 84-20 above. Two problems were noted. First the licensee did not implement all of the alternative tests required by the T.S. following inoperability of valve MO-1001-28B (see Section 5.b below) and second, the LER erroneously states that MO-1001-28B was returned to service on

December 26, 1984 vice an actual date of December 28, 1984. This information was provided to the licensee. The inspector had no further questions in this area.

5. Surveillance Testing

- a. The inspector reviewed the licensee's actions associated with surveillance testing in order to verify that the testing was performed in accordance with approved station procedures and the facility Technical Specifications.

Portions of the following tests were reviewed:

- Control rod scram time testing in accordance with procedure No. 9.9 on January 10 and 11, 1985.
- Drywell to torus leak rate tests in accordance with procedure 8.A.2 on December 31, 1984 and January 1, 1985.
- Drywell piping vibration and strain tests in accordance with Procedure TP 84-228 on January 15, 1985.
- Operability tests required when the LPCI subsystem was inoperable in accordance with procedure 8.5.2.5 on December 26 and 27, 1984.
- Post maintenance testing of the Standby Liquid Control System in accordance with procedure No. 8.4.1 on January 5, 1985.
- SRV Testing following startup on January 8, 1985, and
- Alternative equipment testing for an inoperable HPCI system on January 11, 1985.

b. Findings

- (1) On December 31, 1984 and January 1, 1985, the licensee tested the leakage between the drywell and torus using procedure 8.A.2 "Drywell to Torus Vacuum Breaker Leak Rate Test". The initial test results reported to the inspector were low (less than 10 lbm/hr). However, these results did not seem consistent with the observed leak rate. The actual leakage was sufficiently large to require the addition of nitrogen to the drywell every few minutes to maintain the required drywell to torus differential pressure (1.17 psid).

The inspector discussed the apparent discrepancy between the tested and observed leak rates with the licensee, who was independently evaluating the problem. The licensee subsequently determined that an error in a desk top computer program had caused the leak rate to be reported as lbm/hr when it should have been lbm/min. The

licensee stated that the computer program had been independently checked before use and the error had not been detected. The program has been used to calculate leak rates since 1983.

The licensee recalculated 1983 and 1984 leak rate test results and found that technical specification limits for drywell-to-torus leakage were still met. The licensee also found that drywell temperatures had been switched with dew point temperatures in the computer code. The licensee recalculated the data a second time and found that this error tended to be conservative. The inspector expressed concern to the licensee over this incident because a technical specification test result was low by a factor of sixty and questioned whether other computer codes used at the station might also have errors. The licensee is reviewing these codes to ensure their capability to perform technical specification-related calculations.

These errors are considered licensee identified and corrected. This is an open item (85-01-06) pending inspector review of licensee followup actions for other computer codes.

- (2) On January 15, 1984, the inspector reviewed testing of drywell piping vibration and strain according to procedure TP-84-228. The inspector discussed the testing with contractor personnel taking the measurements and reviewed collected data for conformance to acceptance criteria. No concerns were identified.
- (3) On January 16, 1985, the inspector reviewed surveillances conducted on December 26 and 27, 1984 when an injection valve for the "B" loop of the low pressure coolant injection (LPCI) system was inoperable. This valve, MJ-1001-28B, would not open on December 26, 1984 at 5:50 pm due to a grease problem with the spring pack in the operator. The licensee subsequently disassembled and degreased the spring pack. The valve was declared operable at 8:30 am on December 28, 1984.

The inspector noted that not all surveillance tests were completed immediately, as required by Technical Specification (T.S.) 4.5.A.5. Specifically, two LPCI pumps for the containment cooling subsystem were not determined to be operable until 8:13 pm on January 27, 1984 - 26 hours after the LPCI system was declared inoperable. This is a violation of T.S 4.5.A.5 (85-01-04).

Procedure No. 8.5.2.5, "LPCI Subsystem Inoperable", was initiated on December 26, 1984, and requires that an operability test be conducted on two LPCI pumps immediately, and daily thereafter, using Procedure No. 8.5.2.1, "LPCI Subsystem Operability, Surveillance Test". Pump operability was confirmed on December 27, 1984 using Procedure No. 8.5.2.1. The inspector noted that procedure No. 8.5.2.5 was not strictly complied with on December 27, however, in

that both tested pumps were in the same loop, rather than in different loops as the procedure requires. The Technical Specifications do not require that the operable pumps be in different loops. All other operability tests required by Procedure No. 8.5.2.5 and the technical specifications were completed in a timely manner.

## 6. Maintenance and Modification Activities

### a. Scope

The inspector reviewed the Licensee's actions associated with maintenance and modification activities in order to verify that they were conducted in accordance with station procedures and the facility Technical Specifications. The inspector verified for selected items that the activity was properly authorized and that appropriate radiological controls, equipment tagging, and fire protection were being implemented.

The items and documents reviewed included the following:

- Standby Liquid Control System maintenance between January 3-5, 1985.
- Drywell-to-torus vacuum breaker pre-maintenance inspections on January 2 and 5, 1985, and vacuum breaker repairs on January 6, 1985.
- Use of deficiency stickers on the Post Accident Monitoring Panel on January 24, 1985, and
- Maintenance of the RCIC system steam lines.

### b. Findings

- (1) During the period January 2-6, 1985, the inspector reviewed the licensee's actions in accordance with M.R. 85-14. These actions included draining the Standby Liquid Control System (SBLC) storage tank and piping, flushing, and refilling the system through a filter. The licensee maintained the sodium pentaborate solution heated in liners on the refueling floor while cleaning the system.

The inspector verified that the SBLC system maintenance was complete and testing performed to demonstrate system operability prior to plant startup. However, the inspector did caution the licensee on the operation of the Mode Switch to the refuel position at 10:00 am on January 4, 1985 prior to completing the surveillance (8.4.1) and M.R.s at 9:30 am on January 5, 1985. The inspector verified that the T.S. Section 3.4.A.1 states that the SBLC system need not be operable if in the cold condition with all rods fully inserted and noted that these conditions were met. The licensee acknowledged the inspectors concern and stated that the T.S. allows either posi-

tion. The inspector had no further questions at this time. Proper operation of the SBLC system will be reviewed in future re-inspections.

- (2) On January 2 and 5, 1985, the inspector toured the torus during pre-maintenance inspections of the drywell-to-torus vacuum breakers. The inspector noted the following problems during January 2, 1985 tour.

- The licensee contractor inspection team measured the force required to open the vacuum breakers improperly, in that they read the wrong scale on the force gauge. The licensee counseled them on the proper use of the force gauge.
- The "H" vacuum breaker would not fully shut after being slowly opened by hand. The valve would close fully if allowed to freely swing closed. The licensee detected binding at the top of the valve, between the gasket retaining ring and the valve body, which could hinder closing. The licensee stated that this binding was subsequently removed. The inspector verified that other vacuum breakers closed fully when opened by hand.

On January 6, 1985, the inspector reviewed repairs to a vacuum breaker in accordance with M.R. 85-6 in order to verify that (1) the repair was performed in accordance with a suitable, approved procedure, (2) the force gauges were properly calibrated and (3), the workers were qualified to do the work.

The 'A', 'D' and 'H' vacuum breakers were not properly seating during plant operation in December, 1984; causing excessive leakage to occur between the drywell and torus. Subsequent leak rate tests showed a substantially reduced leakage rate. The inspector had no further questions in this area.

- (3) On January 24, 1985, the inspector reviewed the deficiency stickers on the post accident monitoring panels (C170, C171) in the control room. The inspector noted that one sticker above a wide range torus level indicator had the indicators (L1-1001-604 A and B) and their associated recorders noted on the sticker. Neither the Control Room Supervisor nor the Watch Engineer could readily determine whether the four instruments (two indicators and two recorders) were operable. The instruments appeared to be reading normally.

Deficiency stickers and tags are usually used to indicate that plant equipment is not functioning properly and that a maintenance request has been generated. In this case, the maintenance request was not in the control room and the Watch Engineer had to contact an I and C supervisor to determine the status of the instruments.

Technical Specification Table 3.2.F requires that two of the four torus wide range level instruments be operable while the plant is at power. The licensee later stated that the sticker was misplaced and that only one recorder was inoperable. The inspector expressed concern that control room personnel could not readily determine the operability status of post accident monitoring equipment and further noted that several multipen recorders on the post accident monitoring panel would probably be assumed to be totally inoperable (because of deficiency stickers on the recorders), when they may have been partially functional. The licensee stated that (1) a new type of tag or label was being considered that would have space provided to write in a description of the deficiency and that (2), tags would be hung on the recorders with descriptions of the recorder status. The status of deficiency tags on control room panels will be reviewed during routine daily inspector tours of the control room.

- (4) During a tour of the RCIC quadrant in the reactor building with NRC:Region I management personnel on January 22, 1984, the inspector heard a noise indicative of a steam or air leak. This information was provided to the control room operator. The licensee initiated action to tighten up on the packing of RCIC valve 1301-32 and M.R. 85-115 was also initiated to dry out and repair a ground that had developed from the steam leak. The inspector had no further concerns.

#### 7. Health Physics Activities

On January 2, 1985, a former licensee employee contacted the Resident Office and requested information on his extremity radiation exposure during 1980. He had previously received an exposure report from the licensee which did not include extremity exposure data. The licensee reviewed the individual's exposure record and mailed the person a revised exposure report indicating that he had received about two rems of exposure to his hands in 1980. The inspector reviewed licensee dosimetry records and had no further questions.

On January 31, 1985, the inspector attended an Enforcement Conference regarding an unplanned exposure during entry to a radwaste tank. A summary of this conference will be included in NRC:Region I Specialist Report No. 85-02.

#### 8. Management Meetings

- a. At 2:00 pm on January 22, 1985, the inspector met with NRC:NRR and Region I personnel, as well as licensee personnel, to discuss actions being taken to improve the efficiency of the Onsite Review Committee (ORC) and Nuclear Safety Review and Audit Committee (NSRAC). A recent T.S. change proposal regarding organizational changes, and the use of subcommittees were also discussed. The licensee stated that actions being taken to make the ORC more efficient included (1) using alternates and assistant chief engineers, (2) separating station procedures into those that are required and not required to be reviewed by the ORC, and (3) proposing

a T.S. change regarding the ORC membership. Actions being taken to improve the performance of NSRAC include further use of subcommittees, the assignment of a full time NSRAC Coordinator, and the establishment of a list of safety-related procedures (that NSRAC would have to review safety evaluations for) for inclusion into the Updated Final Safety Analysis Report. The inspector acknowledged the licensee's actions. Further review of safety committee activities will be performed during future routine inspection. No further concerns were identified.

- b. At 7:30 pm on January 22, 1985, the inspector and other NRC:Region I Management personnel met with the local officials of the Town of Plymouth to discuss recent events and to ensure that both parties had an opportunity for communication. No additional concerns were identified during the meetings. NRC personnel stated that a summary of the recent Systematic Assessment of Licensee Performance (SALP) process would be provided to the Selectmen for their information.
- c. On January 23, 1985, the inspectors along with NRC:Region I and NRR personnel met with the licensee's management to discuss the findings of the most recent Systematic Assessment of Licensee Performance Report (No. 84-34). The licensee described their plans for improvement in several areas including operations, radiological controls, fire protection and housekeeping, emergency preparedness, and security.

No additional concerns were identified during this meeting. The licensee plans to provide written comments to the NRC regarding the report. They will be reviewed following receipt.

#### 9. Housekeeping

During the month of January 1985, the inspectors toured the station to review the conditions of housekeeping, cleanliness, and contamination control. The following observations were made.

- A plant shutdown was implemented on January 1, 1985 because of debris either falling into or being thrown into the SBLC test and storage tanks.
- A tour during January 8-11, 1985 noted that improvements in cleanliness of the electrical switch gear and battery room areas could be made.
- During a tour of the HPCI quadrant on January 10, 1985, the inspector noted that improvements in general housekeeping and in valve labeling were readily apparent compared to a tour three weeks earlier.
- A tour of the station on January 22, 1985 with NRC:Region I management personnel noted general improvements in housekeeping since plant restart from the recent outage; a discussion was also held with the Station Services Group leader to address plant decontamination efforts, and



- The licensee stated during the SALP meeting on January 23, 1985 that as a result of aggressive decontamination and painting efforts, personnel should be able to enter the reactor building quadrant areas in their street clothing within the next sixty days.

The inspector had no additional questions at this time. Housekeeping conditions will continue to be reviewed during future routine inspections of the station.

## 10. Piping and Instrumentation Drawings

### a. Scope

- (1) The inspector reviewed the control room file of Piping and Instrumentation Drawings (P&IDs) to verify that the drawing file was complete and up-to-date. The P&ID drawings in the file existed in three different formats:
  - Green laminated sheets measuring approximately one and a half feet by two feet. This is the preferred format and such sheets are enclosed into a ringed binder.
  - Aperture card photocopies measuring approximately one and a half feet by two feet. These drawings are produced onsite and are utilized while the green laminated sheets are being fabricated (about two to three weeks).
  - Blue line drawings measuring approximately three feet by four feet. These drawings are produced offsite at the engineering office and are sent to the site only in response to site requests.

### b. Findings

The inspector found the P&ID file to be complete, but noted the following problems:

- (1) The legibility of the aperture card photocopies was poor. Fine detail (valve numbers, instrument numbers, drawing symbols, etc.) was very hard to read.
- (2) The drawing index was out-of-date. On January 8, 1985, Revision 32 of the index, dated December 18, 1984 was placed into the file. The three week delay was due primarily to the time required for fabrication of the green laminate. Due to this delay, nine drawings in the file had been subsequently revised in the file, but a previous revision was listed on the index.

- (3) The general condition of the drawing file was poor. The ringed binders do not easily accept the three different formats. Some drawings were loose and some drawings were out of sequence.

On January 8, 1985, the inspector reviewed the drawing revisions of the site's aperture card file. There appeared to be no means of obtaining drawing revisions using a separate P&ID master list from the computer, and therefore the computer file for each drawing was reviewed. The inspector compared the revisions of the actual aperture cards with the computer listed revisions and found all aperture cards to be up-to-date. However, when comparing the aperture card revisions with the control room copy revisions, the inspector found four instances in which the control room did not have the latest revision. Document control personnel stated that aperture card photocopies of these revisions had been delivered to the control room, but that Watch Engineers had rejected the photocopies due to unacceptable legibility.

The inspector discussed the above problems of drawing legibility and time delays associated with drawing indices and laminated copies with the Plant Manager and Vice President, Nuclear Operations, on January 8, 1985. They noted that the existing shortcomings of the P&ID distribution process had been aggravated by the large number of drawing revisions following completion of the outage. They stated that the operating staff had been aware of the above problems and that evaluations were underway into the means to resolve them.

The above P&ID drawing problems represent an unresolved item (85-01-05) pending timely establishment and implementation of corrective actions.

#### 11. Management Meetings

During the inspection, licensee management was periodically notified of the preliminary findings by the resident inspectors. A summary was also provided at the conclusion of the inspection and prior to report issuance. No written material was provided to the licensee during this inspection.