

U.S. NUCLEAR REGULATORY COMMISSION
Region I

Report No. 50-29/85-14
Docket No. 50-29
Licensee No. DPR-3
Licensee: Yankee Atomic Electric Company
1671 Worcester Road
Framingham, Massachusetts 01701
Facility Name: Yankee Nuclear Power Station
Inspection at: Rowe, Massachusetts
Inspection Conducted: June 11 - July 29, 1985

Inspector: K P Fenli (For) 8/30/85
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Inspection Summary: Inspection on June 11- July 29, 1985 (Report No. 50-29/85-14)

Areas Inspected: Routine onsite regular and backshift inspection by the resident inspector (181 hours). Areas inspected included: Review of licensee action on previous findings, operational safety verification reviews, bi-monthly safety system walkdown, reviews of events requiring telephone notification to the NRC, review of radiological controls, review of plant events, maintenance observations, Licensee Event Report reviews and followup, surveillance observations, followup of IE Bulletins, Plant Operations Review Committee activities, review of changes to the licensee organization structure, licensee action on NUREG 0660, review of the effects of siphoning of the spent fuel pool, survey of the licensee's response to selected safety issues, and transportation activities.

Results: No violations were identified. Licensee responsiveness to timely corrections of NRC concerns in the operations, fire protection and housekeeping areas (Section 4) was considered a notable licensee strength. Improvements were noted in the quality and detail of safety evaluation reviews (Section 13). Areas needing increased licensee attention involve control room recordkeeping and shift turnover practices (Section 4 and 8) and resolution of redundant instrument capability for containment hydrogen monitoring (Section 15).

DETAILS

1. Persons Contacted

Plant Operations

B. Drawbridge, Assistant Plant Superintendent
T. Henderson, Technical Director
N. St. Laurent, Plant Superintendent

The inspector also interviewed other licensee employees during the inspection, including members of the Operations, Radiation Protection, Chemistry, Instrument and Control, Maintenance, Reactor Engineering, Security, Training, Technical Services, and General Office Staffs.

2. Summary of Facility Activities

On June 11, 1985, the plant was at full power. Plant conditions remained stable until June 29, 1985 when a load reduction to 50% power was initiated to facilitate scheduled turbine throttle valve testing and condenser tube cleaning operations. As a result of inspections of both condenser water boxes, one tube was plugged in the west water box. A load increase was initiated on June 29, 1985 and full power achieved on June 30, 1985. For the remainder of the inspection period the plant was at essentially full power.

Throughout this inspection period, the licensee continued to maintain the core in a rodged condition (i.e., control rod Group C inserted below 83 inches withdrawn. This is in response to the issue of licensee compliance with 10 CFR 50.46 while using analysis codes associated with Exxon Fuel. An evaluation by the licensee on July 18, 1985 indicates that further operational restrictions are not warranted. The NRC:NRR is actively reviewing the issue, including the licensee's planned and implemented compensating actions.

At the completion of this inspection period, the plant had been in continuous operation for 255 days.

3. Licensee Action on Previous Inspection Findings

(Open) Inspector Follow Item (50-29/84-20-09) Follow Dose Equivalent Iodine (DEI) levels due to apparent fuel cladding failure in core XVII. During the period of June 11 to July 29, 1985, fluctuations in DEI were noted to vary from 8.3% to 13% of the allowable TS limit. The licensee continues to maintain maximum bleed, purification, and changing flow rates (50 GPM) to maintain the steady state DEI levels at a minimum.

4. Operational Safety Verification Reviews

a. Daily Inspection

During routine facility tours, the following were checked: manning, access control, adherence to procedures and LCO's, instrumentation, recorder traces, protective systems, control rod positions, Containment temperature and pressure, control room annunciator, radiation monitors, radiation monitoring, emergency power source operability, control room and shift supervisor logs, tagout logs, and operating orders.

A review of control room annunciators indicated that the following two spurious alarms were intermittently illuminated:

1. Safety Injection Tank Low Level
2. High Startup Rate

In discussing this with operations, which attempts to maintain a black board policy, the inspector was informed that the SI tank level alarm was due to noise in the electronic signal and a Maintenance Request (MR) 85-797 was issued to correct the problem. Other control room indications showed that the tank level was acceptable.

No MR had been issued for the spurious startup rate alarm, which is used to alert operators of a abnormal condition when the reactor power level is below 15 MWe. Technical Specifications Table 3.3-1, RPS Instrumentation, action 3, allows continued operation above 15 MWe with one channel inoperable. Both channels are required to be operable below mode 2 when the reactor trip system breakers are closed and the control rod drive system capable of rod withdrawal. Discussions with the I&C Supervisor indicated that the source of the problem was within the nuclear instrumentation and corrective action to eliminate it was factored into Plant Design Change Request 85-01, High Startup Rate Alarm and Boiler Feedwater Pump Trip Permissive Circuit Modification, which would be installed during the Fall, 1985 Refueling Outage.

Regarding maintaining control room log and shift turnover logs, the inspector held a discussion with the Plant Operations Manager (POM) on July 22, 1985 about an apparent omission from both logs involving stationing an ongoing fire watch for the switchgear room. On July 18, 1985, a continuous fire watch was instituted on one side of the fire barrier for a switchgear room wall due to ongoing modifications associated with the battery rooms. Shift personnel failed to log the required action in the appropriate logs. When brought to the Operations Department's attention, appropriate entries were made. The Operations Department has been making progress in addressing NRC concerns relative to proper log keeping practices. Although the number of inspector identified deficiencies has significantly decreased during the recent facility inspections, this example suggests that continued diligence by the plant operators is necessary to continue the noted positive trend. Additional comments relative to control room log entries is contained in Section 8 of this report.

b. System Alignment Inspection

Operating confirmation was made of selected piping system trains. Accessible valve positions and status were examined. Power supply and breaker alignment were checked. Visual inspections of major components were performed. Operability of instruments essential to system performance was assessed. The following systems were checked:

- Emergency Diesel Generator (EDG) unit standby verified during tours of the EDG rooms and control room board status review.
- Low Pressure and High Pressure Injection Systems
- Spent Fuel Cooling System verified during tours of the Spent Fuel Pool.
- Low Pressure Accumulator System during tours of the control room and Safety Injection Building

No deficiencies were identified.

c. Biweekly and other Inspections

1. During Plant tours, the inspector observed shift turnovers; compared boric acid tank samples and tank levels to the Technical Specification; and reviewed the use of radiation work permits and Health Physics procedures. Area radiation and air monitor use and operational status were reviewed. Verification of tagouts indicated the action was properly conducted. There were no inspector identified deficiencies in this area.

2. Observations of Physical Security

Checks were made to determine whether security conditions met regulatory requirements, the physical security plan, and approved procedures. Those checks included security staffing, protected and vital area barriers, vehicle searches, and personnel identification, access control, badging, and compensatory measures when required.

No violations were identified.

3. Fire Protection and Housekeeping

Work associated with the seismic reinforcement of the battery room (No. 1 & 2) ceilings was observed by the inspector during several tours of the switchgear area. The licensee has instituted measures to minimize dust which could degrade breaker and relay performance. Protective coverings over the batteries are also being installed prior to drilling through the ceilings. These measures are appropriate to the circumstances.

Fire protection technical specifications related to the switchgear and battery rooms can be found in LCOs 3.7.10.5 and 3.7.11. These address the operability of the fire suppression system (Halon tanks) and fire barriers. The inspector noted that the battery room Halon system remained operable as these rooms remain intact. The doors were used only for area egress and not propped open, ensuring that the Halon concentration limits would be met if the system were needed. The inspector did note that the doors were not marked as being required to be kept closed. This condition was brought to the attention of the Fire Protection Coordinator, who immediately arranged to have signs installed on the doors that require they be maintained in a closed position. Licensee action in this regard is reflective of their cooperative spirit usually demonstrated in resolving inspector concerns in the fire protection area.

During the inspection period the inspector noted that housekeeping throughout the facility was very good, even with significant construction/modification activities in progress, and that the facility is being well maintained. However, it was noted that the control room appears to lack the same attention that the rest of the facility has been receiving, e.g., crowded conditions (personnel and equipment), poor lighting, and overall control room appearance. Control room habitability improvements are planned, but in the interim the area does not meet the standards set by the licensee for other less important areas. Attention to this area may be warranted.

On June 26, 1985, the inspector developed concerns relative to the storage conditions for new Spent Fuel Pool Racks in the controlled side storage building (Cutler Building). Inspector observations were transmitted to the Plant Superintendent. Corrective measures implemented by the Stores and Maintenance Departments consisted of cleaning and inspecting the racks for damage, recovering the racks in plastic, removing debris from the vicinity of the racks, segregating the rack storage area within the building to preclude recurrence of degraded storage conditions, and placing the area on a weekly surveillance schedule. An evaluation by the cognizant Plant Maintenance Engineer determined that the racks are non nuclear safety category equipment, which indicates that the storage of the racks within the designated storage building is appropriate. Based upon the licensee's corrective actions the inspector had no further questions on this item.

d. Deficiency Tracking

The licensee maintenance request system was reviewed to verify that the backlog level is acceptable, that various MRs are prioritized for safety related items, and that administrative controls are in place to ensure that this list is reviewed for possible mode hold points, should the plant shut down. For 1985, there are about 180 open MRs out of 800 written to date. Of these, 105 are outage items. From 1984, more than one dozen safety related outage required MRs are still open. This appears to be a manageable level that does not adversely affect plant operation.

Discussions with control room personnel indicated that they were cognizant that one of the startup rate meters was out of service, which precludes a mode change should the plant be shut down. This currently is the only such hold item. Administrative controls require the section group heads to verify that all required work and hold points have been satisfactorily completed prior to start up. Inspector discussions with several of these groups indicated that each maintained an up to date outage MR list from which to work. The inspector identified no concerns at this time.

5. Bimonthly Safety System Walkdown

The inspector independently verified the operability of a selected engineered safety feature (ESF) system by performing a complete walkdown of the accessible portions of the system to:

- Confirm that the licensee's system lineup procedures match plant drawings and the as-built configurations;
- Identify equipment conditions and items that might degrade performance;
- Inspect equipment and cabinets for abnormal conditions;
- Verify proper valve position, availability for function and position indication; and
- Verify compliance with Technical Specification requirements

The Low Pressure Safety Injection Accumulator System was examined. All applicable specifications of TS 3.5.1. a-g were verified to be acceptable. Discussions with plant operators indicated that they were fully knowledgeable of the system design and operation. Inspection of the system revealed that all the valves examined were properly positioned, that the system was well maintained, and appeared to be in a stand-by status capable of performing its intended function.

No inadequacies were identified.

6. Review of Events Requiring Telephone Notification to the NRC

The circumstances surrounding the following events requiring NRC notification via the dedicated ENS-line were reviewed. A summary of the inspector's review findings follows:

- At 3 p.m. on July 5, 1985, the NRC was notified in accordance with 50.72 (b)(1)(v) that the Safety Parameter Display System (SPDS) was removed from service at 8:44 a.m. on July 5, 1985. The licensee specified that maintenance was being performed on the system. The licensee returned the SPDS to service on July 12, 1985. The NRC was appropriately notified via the ENS. No deficiencies were identified.

- At 6:13 p.m. on July 13, 1985, the NRC was notified in accordance with 50.72 (b)(1)(v) that a major loss of emergency communications capability had occurred at 5:39 p.m. as a result equipment inoperability associated with the tone alert weather radio portion of the Public Notification System (PNS). On July 14, 1985 at 00:15 a.m., the NRC was notified by the licensee that temporary repairs were made to the PNS equipment and that the system was operable. No deficiencies were identified.
- At 10:45 a.m. on July 23, 1985, the NRC was notified in accordance with 50.72 (b)(1)(v) that a loss of differential temperature indication from the Meteorological Monitoring System (MMS) had occurred at 9:48 a.m. Subsequent to inspector review of licensee actions pertaining to this event, the licensee initiated an ENS call at 2:39 p.m. on July 24, 1985, that reported the MMS fully operational as of 4:40 p.m. on July 23, 1985. The results of the inspector's review of this event are contained in Section 8 of this report.

7. Radiological Controls

Radiological Controls were observed on a routine basis during the reporting period. Standard industry radiological work practices, conformance to radiological control procedures and 10 CFR Part 20 requirements, were observed. Independent surveys of radiological boundaries and random surveys of non-radiological points throughout the facility were taken by the inspector.

During a tour of the facility on June 27, 1985, the inspector noted that contaminated plant equipment was being stored in one of the rooms of the Post Incident Cooling System (PICS) Building. The entrances to this room did not contain postings that indicated radioactive materials were inside. This condition was brought to the Plant Superintendents attention for review. On a subsequent tour, the inspector observed the entrances to the room to be posted with a "Caution-Radioactive Materials Area" sign. The inspector had no further questions on this item.

8. Inspector Review of Plant Events

- a. On June 26, the plant operators noted that the Boric Acid Mixing Tank (BAMT) level had increased approximately one foot. This was attributed to a steam heating coil leak within the tank. TS 3.1.2.3. requires an operable BAMT with an allowance that it can be inoperable for up to 72 hours provided the Safety Injection Tank is operable. TS 3.1.2.11 requires the BAMT temperature to be maintained at or above 150 degrees F and a concentration of 12% to 12.5% Boric Acid by weight.

Upon discovery, the licensee secured the steam heating to the BAMT and sampled the concentration of the tank. Steam heating was initiated manually followed by sampling for the succeeding period while a Plant Alteration (PA) was being developed. During this period, the tank concentration and temperature varied from the required specifications by a small amount, and when it occurred the plant operators returned the parameters to the

required specification within the allotted time provided by the TS action statement. On June 29, 1985 the Plant Operations Review Committee approved PA 85-19, Boric Acid Mix Tank Electrical Heating. The inspector attended the meeting, reviewed the Safety Evaluation, and noted that the package appeared to be comprehensive and thorough. The PA was initially placed in service in June 29, 1985; however, moisture problems developed with the heater's electrical connectors that resulted in temporarily requiring a return to the use of steam heating. Following resolution of the electrical heater connection difficulty on July 1, 1985, there were no further problems with the BAMT.

The Operations Department issued three Special Orders (85-41, 42 & 43) related to this event that were judged by the inspector to be informative to the plant operators. Information provided included the nature and extent of the problem, required corrective measures, and the status of the plant equipment involved.

No inadequacies were identified.

- b. On July 23, 1985 at 9:48 a.m., the control room was notified that the primary Meteorological Monitoring System (MMS) tower's Delta T indication was inoperable. Additionally, the plant operators were told that the backup MMS's Delta T indication was not functioning properly. Although Maintenance Request 85-827 was issued on July 22, 1985, regarding the problem with the backup MMS, the inspector noted that neither control room nor shift turnover log entries for this condition were made. At 10:45 a.m., the licensee reported the condition to the NRC via the ENS. The control room log and shift turnover log did reflect the status of the primary system and recognized the LCO aspects of TS 3.3.3.3. Additionally, on July 24, 1985 the licensee issued Advanced Change Notice No. 2 to procedure OP-3310, Evaluation of Radiological Data, to provide appropriate instructions to the operators in the event that the Delta T data (i.e., information used to derive the stability class) is unavailable.

During a control room tour on the evening of July 23, 1985, the inspector questioned the control room operators as to the status of the MMS and concluded that the shift turnover practices failed to provide a clear understanding of the status of the backup system. At this time the inspector noted that licensee contractor personnel were performing maintenance activities on the primary MMS System. It appears that the backup MMS was operable at 4:40 p.m. on July 23, 1985 although this is not reflected on shift records. On July 24, 1985 the inspector questioned the Shift Supervisor as to the extent of updating, if any, that was provided to the NRC on the status of the 10 CFR 50.72 (b)(1)(v) event. At 2:39 p.m. on July 24, 1985 an ENS call was made to notify the NRC Operations Center that the backup MMS was functioning as of 4:40 p.m. on July 23, 1985.

Based upon the review of this event, the inspector informed the Plant Operations Manager that additional attention to shift turnover and log keeping practices is warranted. The inspector concluded that the failure to update the NRC on the termination of the event is related to continued weaknesses associated with information transfer and record keeping practices.

9. Monthly Maintenance Observation

The inspector observed and reviewed maintenance and problem investigation activities to verify compliance with regulations, administrative and maintenance procedures, codes and standards, proper QA/QC involvement, safety tag use, equipment alignment, jumper use, personnel qualification, radiological controls for worker protection, fire protection, retest requirements, and re-transportability per Technical Specification. The following activities were included.

- Maintenance Request (MR) 85-519, Boric Acid Mix Tank Steam Heat Coils Leak
- MR 85-699, No. 1 Charging Pump Excessive Leakage
- MR 85-705, No. 2 Component Cooling Pump Excessive Leakage
- MR 85-784, Diesel Fire Pump Oil Tank Level Indication Problem
- MR 85-796, Non Return Valve Northeast Fire Detection Zone Constant Alarm
- MR 85-797, NA-5 Safety Injection Tank Low Level Alarm - Noise on Channel Causes Spurious Alarm.

No deficiencies were identified by the inspector as a result of reviewing these activities.

10. Review of Licensee Event Reports (LERs)

LERs submitted to NRC:RI were reviewed to verify that the details were clearly reported, including accuracy of the description of cause and adequacy of corrective action. The inspector determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted onsite followup. The following LER was reviewed.

<u>LER No.</u>	<u>Event Date</u>	<u>Report Date</u>	<u>Subject</u>
50-29/84-11 Rev. 2	7/3/84	5/6/85	Pressurizer Code Safety Valve PR-SV-182 Setpoint Tolerance Error

- a. LER 50-29/84-11 was reviewed in Inspection Reports 50-29/84-13 and 85-04, and remained open pending the licensee's submittal of a revised LER. This action was considered necessary by the inspector since the LER neither

specified the relationship of the event to a design change inadequacy nor enumerated appropriate corrective action. The current revision to the LER has adequately addressed all of the inspector's concerns.

The inspection reviewed two licensee memorandums YRP 478/85 and TSD 85-39, dated May 9 and 24, 1985, respectively, which documented training given to project and plant engineers to emphasize the requirements of 10 CFR 50.59 and the contents of the LER.

This LER is closed.

- b. On July 10, 1985, the licensee submitted letter FYR 85-76 to NRC:NRR on the issue of Low Temperature Overpressure Protection (LTOP). This issue was the subject of LER 50-29/83-13/OIT, which notified the NRC that the licensee review of the design basis for the reactor vessel LTOP indicated some events postulated in the original design basis could potentially exceed the pressure restrictions for the cycle then in progress. In its letter FYR 84-51 dated April 23, 1984, the licensee indicated that modifications to the LTOP system were planned, as well as stipulating the interim action enumerated in the LER that will be taken in order to maintain the similar levels of protection as demonstrated in the original design basis.

In Inspection Report 50-29/85-04, the inspector closed the LER as a result of an NRC Safety Evaluation, dated December 3, 1984, which reviewed the interim and proposed long term corrective actions associated with the LER. In the July 10, 1985 licensee letter, the licensee revised its previous plans that involved modifying the LTOP system, and stipulated that this action was the result of reviewing recent drafts of the revision of Regulatory Guide 1.99. Furthermore, the inspector noted that the interim action specified in the LER that would be taken until the LTOP issue is resolved have been modified by this licensee letter. As a result, the inspector discussed with the plant's Technical Services Manager (TSM) the appropriateness of a revised LER to be submitted to the NRC. On July 19, 1985, the TSM informed the inspector the licensee will develop and submit a revised LER on the LTOP issue.

This LER is considered to be in an open status pending further licensee action and subsequent NRC review.

11. Monthly Surveillance Observation

The inspector observed tests and parts of tests to assess performance in accordance with approved procedures and LCO's, test results (if completed), removal and restoration of equipment, and deficiency review and resolution. The following tests were reviewed:

- OP-4204, Monthly Test of Safety Injection Trains

- OP-4207, Weekly Surveillance Test of the No. 2 Emergency Diesel Generator and the AC Power Distribution System
 - OP-4210, Fire System and Diesel Fire Pump Weekly Operability Checks
 - OP-4217, Testing of the Charging Pumps
 - OP-4214, Chemical Shutdown Systems Operability Check
 - OP-4630, Accumulator Time Delay Actuation Verification
- a. Portions of OP-4210, Attachment C, Fire System Weekly Operational Checks, was observed by the inspector from both the diesel driven pump house and the control room on July 12, 1985. The test required the pump to be auto-started from the field by isolating pressure switch P-2 and venting the trapped pressure off until diesel startup. No local or control room pressure indication exists to identify the pressure level reached when the auto function makes up. Review of Technical Specification 4.7.10.11 and 4.7.10.1.2 require the diesel driven fire pump to be proven operable once per 31 days by starting it from ambient conditions and running it for 30 minutes, and once per 18 months by starting it with an auto-start signal. It appears that the setpoint of pressure switch P-2 is checked in OP 4243, which verifies that the pumps start prior to header pressure dropping below 85 psig. As this test is performed on an 18 month frequency, the TS requirements are being met by the station.
 - b. While touring the control room on July 16, 1985, the inspector was informed by the shift supervisor that one of four timers in the safety injection accumulator had failed its 31 day surveillance test. The Agastat timing relay, model SS12PCA, designated TDC4 by the station, exhibited setpoint drift when tested per OP 4630. The test switch was left in the "test" position, which makes up the relay contacts to provide its safety function while the I&C Department conducted trouble shooting.

The inspector observed relay replacement with a QA qualified spare. During subsequent testing the I&C technicians encountered problems with the test instruments. After a spare instrument was obtained and TDC4 successfully tested to OP 4630, the I&C Supervisor directed that the three previously tested relays be retested to remove any doubt raised by the malfunctioning test timer. The new values reproduced the previous data.

Retests of the problem relay failed to duplicate the erratic behavior. The I&C Supervisor stated that additional tests would be conducted in an attempt to fail the timer and identify the failure mechanism, but whatever the results, the questionable timer would be discarded. The licensees actions were satisfactory.

- c. A review of OP 4214, Chemical Shutdown System Operability Check, Attachment A, indicated that several normally locked open manual valves are cycled as part of the test. The auxiliary operator is responsible for

ensuring the valve is correctly aligned, and attests to this by initialing an appropriate step in the OP. No double verification of the alignment is required by the OP.

Discussions with station personnel indicated that the licensee was currently in the process of revising all procedures to meet the NUREG-0737, Item I.C.6, commitments for verification of critical operational activities. The licensee informed the inspector that the biannual procedure review was the mechanism being used to update those procedures. Review of the current list indicated that OP-4214 was not so scheduled through December 1985. Since the licensee was committed to, and already performing the second verification on most procedures, the inspector stated that it would be appropriate to issue an operating memo (or other similar document) to require that all locked valves, referenced in procedures still to be updated, receive the second verification. This comment was acknowledged by the licensee.

On July 18, 1985, the inspector found valve CS-V-703, which is part of the safety injection to charging pump flow path, to be in the open position, but the lock holding the chain in place was not secured as required in OP-4214. This observation was given to the licensee to correct the deficiency.

Subsequent to the close of the inspection period, the Assistant Plant Operations Manager issued Special Order 85-56, dated August 8, 1985, that requires second operator verification when performing procedures that require verification of locked valves. This action was taken in advance of issuance of the procedures still requiring revision (approximately 14 procedures in this category) and was responsive to inspector concerns on this issue.

- d. During the inspector's review of OP-4207 on June 11, 1985 for the weekly surveillance on the No. 2 Emergency Diesel Generator (EDG) it was observed on the control room KW meter that the EDG loading was dropping slightly below the 200 KW TS 4.8.1.1.2.a requirement. The loading on the EDG appeared to fluctuate as a function of plant equipment loading on the station electrical buses. The inspector discussed the situation with control room personnel at the time, and subsequently with the POM who acknowledged the inspector's concerns. The POM was responsive to the NRC concerns by providing a timely revision to OP-4207 that directs the control room operator to stabilize EDG loading at approximately 250KW. This procedural requirement should prevent station loading changes from reducing the loading on an EDG below the TS value.

The inspector had no further questions on this item.

12. Followup on I.E. Bulletins

The licensee's response to the following I.E. Bulletin (IEB) was reviewed. This review included: adequacy of the response to IEB requirements, timeliness of the response, completion of identified corrective actions and timeliness of completion.

- IE Bulletin No. 83-07 and Supplements 1 and 2, Apparently Fraudulent Products sold by Ray Miller Inc. dated July 22, October 26, and December 9, 1983, respectively. The licensee's actions in response to the bulletin requirements were reviewed in Inspection Report 50-29/84-23, and remained open pending a licensee submittal that is responsive to the bulletin request for corrective actions and a schedule of implementation that will prevent the use of these materials at the plant.

The inspector reviewed licensee letter FYR 85-63 to NRC:RI dated May 29, 1985. This letter described the licensee's short-term and long term corrective actions that will minimize the likelihood of fraudulent materials at the plant and included a schedule of implementation.

This bulletin is closed.

- IE Bulletin No. 80-06, ESF Reset Controls. This bulletin was issued to alert licensees of a problem whereby the use of the SI reset pushbutton alone resulted in certain ESF equipment changing position from its emergency mode to the normal alignment. Consequently, the licensee was requested to:
 - (1) Review ESF schematics to determine whether components remain in their emergency mode upon SI reset;
 - (2) Test installed equipment to verify that the schematics agree with the as-built plant; and,
 - (3) Make any necessary modifications to those ESF systems, trains or components that do not remain in their emergency mode upon SI reset.

NRC Inspection Report 50-29/80-12 performed the initial review of item 2. Inspection Follow Item (80-12-03) tracked circuit modifications and was subsequently closed out in Inspection Report 81-02.

The NRC:NRR issued a Safety Evaluation (SE), dated February 22, 1982, that determined that the licensee's response to action items 1 and 3 was satisfactory. This occurred after a request for additional information, dated March 28, 1981. The subsequent response by the licensee determined that the containment isolation circuit, charging pump circuit and accumulator nitrogen pilot supply valves circuit were satisfactory. Since no further modifications were deemed necessary, the original inspections in 1980 and 1981 have verified licensee compliance.

However, the SE's Technical Evaluation Report indicated that there may be a question concerning the adequacy of the pilot solenoid circuit for the containment isolation system. It was noted that this circuit should be looked at by the Systematic Evaluation Program (SEP) study for compliance with the requirements of GDC-23 because at least one solenoid valve must be energized to keep the isolation valve closed.

The inspector determined that although the issue relating to licensee conformance to GDC-23 is left unresolved by the SE, the NRC's review found the licensee's response to I & E Bulletin 80-06 acceptable. The inspector has brought the issue of GDC-23 conformance for the licensee's containment isolation circuit design to the attention of the NRC:NRR Project Manager for his review and resolution.

This bulletin is closed.

- IE Bulletin No. 83-05: ASME Nuclear Code Pumps and Spare Parts Manufactured by the Haywood Tyler Pump Company (HTPC). This bulletin alerted licensees to problems in the HTPC's QA program that could adversely affect the ability of ASME Code pumps and spare parts manufactured by them to perform their long term safety function. The NRC recommended that all such pumps important to safety be subjected to an expanded commissioning test to ensure reliability.

In reviewing the licensee action; it was determined that the facility does not use any pump manufactured by HTPC. Spare parts from HTPC are used in the condensate and circ water pumps, which are not safety related.

To verify that HTPC spare parts could not be inadvertently interchanged and used in place of ASME parts, the inspector reviewed the licensee administrative controls in this area. All corrective maintenance is performed under a Maintenance Request (MR). The originator classifies the system/component to its safety category through a review of the Safety Classification of System Manual or through discussions with the Technical Services Division. A copy of the MR goes to Operational Quality Assurance Group for assignment of any designated hold points. The mechanic can then present a copy of the MR to stores for needed parts. Stores personnel use the safety classification of the MR and mark numbers to obtain those parts. A tour of the stores area showed that safety related and non-safety related parts were physically separated and in color coded storage bins, which are labeled for each pump. This appears to be a good practice that insures that the correct replacement parts are used by station personnel.

This bulletin is closed.

13. Onsite Review Committee

On June 13, June 28, July 2 and July 23 1985, the inspector observed meetings of the Yankee NPS onsite review committee (PORC) to ascertain that the provisions of TS 6.5.1. were met.

Except for the following items, the inspector had no further comments as a result of reviewing the licensee's activities associated with the onsite review committee:

- At meeting 85-26 on June 13, 1985, the PORC reviewed and approved Plant Design Change Request (PDCR) 85-5, Addition of A Syringe Sample Point To The Comsip kIII Hydrogen Analyzer. Implementation will provide compliance with NUREG 0737, Item II.B.3, which requires that samples taken from the containment be returned to the containment or to a closed system. In Inspection Report 50-29/85-07, Section 13, the inspector discussed concerns related to the PDCR that involved an incomplete Safety Evaluation (SE) and review. The licensee had committed to develop a new SE and PORC review the revised PDCR.

The inspector reviewed the revised SE and determined that the licensee's actions were fully responsive to the inspector's concerns. Licensee representatives were informed by the inspector that the written revised safety evaluation and the detailed PORC review for the PDCR was a positive step in resolving NRC concerns in this area.

Implementation details for the PDCR required removal of the Comsip kIII Hydrogen analyzer from service while relying on the Bendix analyzer (located in the Switchgear Room) to meet TS 3.6.3.1 requirements of having a containment hydrogen analyzer operable. It was the licensee's intent to utilize the Bendix Monitor as the operable system and preclude entering the 7 day action statement of the TSs. The inspector questioned the PORC as to the appropriateness of utilizing the Bendix System since the sample flow is neither returned to the containment nor to a closed system. Sample flow for the system is sent to the Primary Vent Stack which releases to the environment. Following review of this issue, the PORC 1) directed that the PDCR and its implementing procedures be revised to not take credit for the Bendix analyzer, and 2) requested via a PORC Follow Item that the Plant Chemistry Manager conduct an evaluation of the status of the Bendix and Comsip hydrogen analyzers with particular attention to the redundancy aspects of the two analyzers. Further discussion on this item is contained in Section 15 of this report.

- At meeting 85-31 on July 2, 1985, the PORC reviewed and approved a Memorandum dated June 27, 1985 from the Maintenance Support Supervisor to the Committee that requested concurrence for a recommendation to delete the requirements for obtaining "as-found" calibration and setpoint data (for refueling surveillance requirements) prior to actual calibration for certain Reactor Protective System (RPS) channels involved in Engineering Design Change Request (EDCR) 84-307. The licensee's plans for the 1985 Refueling Outage calls for installation of the EDCR to provide an RPS upgrade that will replace five (5) TS instrument channels (low main coolant steam generator delta P flow (four) and pressurizer wide range level). Information details provided to the PORC for its consideration were 1) uniqueness of the plants' instrument channel components, 2) review of instrument channel past performance, 3) radiation exposure data, and 4) a Safety Evaluation.

The inspector reviewed the licensee's plans with cognizant NRC:Region I personnel and determined them to be acceptable. This conclusion was based upon the lack of open technical issues with the NRC involving the specified equipment and appropriate consideration of the licensee's exposure concerns, which are in keeping with the Commission's policy to reduce radiation exposure to levels as low as reasonably achievable (ALARA).

The inspector identified no deficiencies and had no further questions on this item.

14. Organization and Administration

During the inspection period, the inspector reviewed changes to the licensee's staff or organization structure as described below. The review included: verification that licensee's onsite organization structure is as described in the facility TS, and verification that personnel qualification levels are in conformance with ANSI N18.1-1971, as described in TS 6.3.1.

Effective May 1, 1985 the following changes in the licensee's staff were implemented.

- G.M. Babineau, formally Reactor Engineering Manager, was appointed to the position of Radiation Protection Manager
- R.N. Williams, formally a Shift Technical Advisor, was appointed to the position of Reactor Engineering Manager

No inadequacies were identified.

15. Licensee Action on NUREG-0660, NRC Action Plan Developed as a Result of the TMI-2 Accident

The NRC's Region I Office has inspection responsibility for selected action plan items. These items have been broken down into numbered description (enclosure 1 to NUREG-0737, Clarification of TMI Action Plan Items). Licensee letters containing commitments to the NRC were used as the basis for acceptability, along with NRC clarification letters and inspector judgment. The following items were reviewed:

-- NUREG-0737, I.A.1.3.2, Shift Manning

The licensee's letter to NRC:NRR dated June 16, 1982 provides the commitment for maintaining minimum levels of shift manning per NUREG-0737 by July 1, 1982. On January 1, 1984, 10 CFR 50.54m became effective which stipulates license conditions associated with shift staffing. The inspector verified that the licensee's station procedure AP-2001 denotes

shift manning requirements, specifies that the shift complement will include two Senior Reactor Operators, and is in accordance with the requirements of 10 CFR 50.54m.

This item is closed.

-- NUREG-0737, II.F.1.6, Containment Hydrogen Monitor System (CHMS)

In its' April 28, 1983 Safety Evaluation sent to the licensee, the staff describes their scope of evaluation for the CHMS, and references the documents submitted by the licensee describing the CHMS design. Based upon the licensee's submittal and a followup staff information request, the staff determined that the requirements of this item have been met.

The licensee has two monitoring channels that are capable of providing indication of hydrogen concentration. The Channel "A" Hydrogen Monitor, a Bendix analyzer, is located in the switchgear room of the Turbine Building, with the sample flow being exhausted to the Primary Vent Stack (PVS) for release to the environment. The Channel "B" Hydrogen Monitor, a Comsip analyzer, is located in the stack house addition on the Primary Auxiliary Building roof, with the sample flow being returned to the containment. Both channels have indication located on the Control Monitoring Panel B in the control room.

As noted in Section 13 of this report, the inspector questioned the licensee's PORC on the acceptability of using the Bendix analyzer since the sample flow is released to the environment. The inspector's concern resulted from the NRC:Region I determination, as documented in Inspection Report 50-29/85-05, that the licensee's design for taking a grab sample of containment atmosphere should be modified. This determination was based upon the grab sample flow being vented directly to the PVS which is not in accordance with the recommendation of NUREG 0737 Item II.B.3 because the sample flow was neither returned to the containment nor to a closed system. The inspector noted that 1) NUREG 0737 Item II.F.1.6 which governs the design requirements for the CHMS does not specify requirements pertaining to the sample residues, and 2) the NRC:NR safety evaluation did not evaluate this aspect of the design when it reviewed the licensee's CHMS design.

The PORC assigned the responsibility for evaluating the redundancy aspects of the two analyzers for meeting the requirements of TS 3.6.3 to the Chemistry Manager. Prior to the question being raised about the Bendix analyzer, either channel being operable would meet the single channel requirement of the TSs. The Chemistry Manager documented his evaluation to the PORC in a July 17, 1985 memorandum which recommended, in part, the following:

1. Based upon the potential for an off-site dose at the exclusion area boundary, the Bendix should not be considered as an immediate backup system to the Comsip for the purpose of compliance with TS 3.6.3.

2. Since the September 25, 1984 dosimetric evaluation of the release of containment air from the hydrogen vent line (or the Bendix analyzer) post dates the last YAEC commitment to redundant hydrogen analyzers, licensing should evaluate YAEC current commitments to the USNRC and any Proposed Changes to the TSs which affect the hydrogen analysis system. These commitments should be clarified if required.

A PORC meeting on July 17, 1985 endorsed the Chemistry Manager's recommendations, with Yankee Plant Service Request 85-30, dated July 18, 1985, being issued by the plant management to evaluate the Chemistry Manager's memorandum and, if required, to modify licensing commitments. With regard to licensing commitments, the inspector noted that Generic Letter No. 83-37, dated November 1, 1983, provided NRC staff guidance on TSs for NUREG 0737 items including II.F.1.6, and requested a licensee response stipulating their schedule for submitting TSs. The NRC guidance for the Containment Hydrogen Monitors specifies that two independent containment hydrogen monitors should be operable at all times when the reactor is operating in Power Operation or Startup modes. The licensee responded to the Generic Letter in its letter FYR 84-111 dated November 19, 1984, which transmitted draft TSs that were consistent with the NRC staff guidance and a commitment to formally submit them with their Cycle 18 Refueling TS (approximately October 1985).

Since the licensee is in the process of evaluating the use of the Bendix analyzer as part of its' commitment to provide redundant channel capability for the CHMS, Item II.F.1.6. will be maintained in an open status in the TMI Task Action Plan Tracking System.

16. Followup of Regional Request: Examine Potential for Siphoning of the Spent Fuel Pool

On June 13, 1985, the inspector was directed by NRC:Region I Division of Reactor Projects to review the licensee's piping systems that interconnect with the Spent Fuel Pool (SFP). The review was undertaken to ascertain the possibility of a loss of SPF water inventory due to siphoning action.

The inspector determined that although the two SFP cooling suction lines are submerged within the pool, any siphoning action could not reduce the SFP level to less than 3 1/2 ft. above the upper fuel support structure. The inspector had no further questions on this item.

17. Survey of Licensee's Response to Selected Safety Issues - Control Rod Mispositioning

An inspection was conducted to verify the licensee's response to the safety issue of control rod mispositioning.

This issue has been identified in IE Information Notice 84-06. The primary purpose of the inspection is to gather information to be used in determining if NRC staff action is necessary on this safety issue.

The scope of the inspection, as contained in Temporary Instruction 2515/67 of the NRC's I & E Manual, includes a determination of whether procedural changes have been initiated and whether training has been implemented. For those items which the licensee has not implemented, an alternate reason or justification was provided if documented by the licensee. All reported licensee actions were those implemented prior to April 1, 1985.

Inspection results are documented in Appendix A to this report and were submitted to NRC:I&E for inclusion in their survey results.

18. Transportation Activities

On June 27, 1985 the inspector reviewed preparations for shipment of Offsite Radioactive Material Shipment No. 85-13 consisting of four compacted and un-compacted waste wooden boxes and 12-55 gallon drums. The inspector witnessed trailer placards and final bracing of the load. Each pallet consisted of 4-55 gallon drums held in place by a wooden cap and bottom pallet. Each pallet was blocked-in to the trailer bottom by wooden strips.

The inspector witnessed licensee activities and reviewed documentation required by plant procedure OP-8301, Radioactive Material Shipment.

No violations or deficiencies were identified.

19. Managements Meetings

During the inspection period, the following management meetings were conducted or attended by the inspector as noted below:

- At periodic intervals during the course of the inspection period, meetings were held with senior facility management to discuss the inspection scope and preliminary findings of the resident inspector.

APPENDIX A

SURVEY OF LICENSEE'S RESPONSE TO SELECTED SAFETY ISSUES

YANKEE NUCLEAR POWER STATION

Item 03.02b. Mispositioned Control Rod

1. Do procedures define the steps necessary for recovery from a mispositioned rod?

Yes, however procedure OP-3118, Mispositioned or Dropped Control Rods," does not address INPO recommendation 1b and 1d.

2. Are procedures implemented for verifying rod position when one form of normal indication is lost?

Yes. Procedure OP-7204. "Control Rod Position Check." references the use of the Incore Flux Mapping System, procedure OP-7105, to verify control rod position.

Items 3-6 are not applicable to PWR's

7. Has training been provided for operators in the proper movement of control rods, the consequences of improper movement, and the consequences of operating with the mispositioned rod?

Yes. The current program includes lectures, on the job training, and simulator training under normal and abnormal situations concerning the above items.

8. For any items which are not implemented, does the licensee have an alternate reason or justification?

Item 1b

There is no operating procedure to determine how long a control rod has been mispositioned. Yankee operating procedures require the recording of control rod position every hour. The rod position indicator lights in the control room are quite prominent and the licensee justifies that any change would be recognized immediately.

Item 1d

Operating procedures do not address the rate of control rod recovery in the event of rod mispositioning. The licensee reasons that INPO's concerns of Xenon Oscillations and localized power peaking due to rapid rod recovery are not warranted at Yankee because of the limited sized of their reactor.