U.S. NUCLEAR REGULATORY COMMISSION
REGION I

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Licensee:	Northeast Nuclear Energy Company P.O. Box 270 Hartford, CT 06141-0270
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Scope: Special inspection of concerns brought to Northeast Utilities by the NRC. This report is a continuation of the special inspection described in NRC Inspection Report numbers 50-245/91-23 and 50-336/91-27, and 50-336/91-29. It includes plant operations, maintenance and surveillance, and engineering and technical support issues.

Inspection Results: See Executive Summary

EXECUTIVE SUMMARY

MILLSTONE UNIT 2 INSPECTION 91-31

There are several observations related to the consistency of interpretation and implementation of quality assurance program requirements, and attention to detail in procedural compliance. Our overall assessment is that performance is adequate, but we identified weaknesses in several areas listed below:

PLANT OPERATIONS

Management expectations were not always clearly defined and communicated to workers. Examples included the conduct of independent verification activities, qualification requirements for independent verifiers, prerequisites for closure of short form PDCRs, maintenance of instrument calibration data sheets, values for alarm setpoints in procedures, and administration of the work control center.

A strength was NNECO's practice of controlling unnecessary traffic in the control room by effectively using a work control center.

MAINTENANCE AND SURVEILLANCE

The following were additional examples of weaknesses described in previous inspection reports:

- Biennial review of procedures was not always accomplished in a timely manner.
- Supervisors did not always ensure technicians and maintenance personnel had the requisite qualification for assigned tasks.
- Housekeeping was inadequate in some plant areas because unanchored material was stored near safety related components and could detrimentally affect operability of those components during a seismic event.

Opportunities for personnel to improve attention to detail exist, such as the validation of some valve line up sheets, one instance in which workers did not appropriately transition to a three page work order, and one instance in which changes to a surveillance procedure were not identified in a timely manner.

ENGINEERING AND TECHNICAL SUPPORT

There was inadequate maintenance of some as-built drawings for the Emergency Operations Facility Emergency Diesel Generator. Also, in two instances there was inadequate attention to detail in design control. Further, the NRC questioned the adequacy of NNECO's programmatic evaluation of non-seismically qualified instrumentation in seismic category I systems.

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DETAILS

1.0 WORK CONTROL

Concerns have been identified regarding work control procedures in the I&C Department at Millstone Unit 2.

1.1 Control Room Air Conditioning System

One concern involved the troubleshooting efforts associated with the ventilation heater control circuit in the Control Room Air Conditioning (CRAC) system. The CRAC heaters could be energized when the associated fan was not running.

Assessment

The inspector interviewed the personnel involved with the troubleshooting effort on the CRAC system and reviewed the documentation used as well as the pertinent governing plant procedures and directives. The following information was obtained:

An Automated Work Request (AWO) was generated (M2-91-06068) to test the operation of the flow switches in the CRAC ventilation heater control circuit. Local ID X60A was used on the AWO. The switches tested satisfactorily, so the problem was assumed to be with the design of the installation. The problem with the flow switches was identified around June 17, 1991, and a memorandum from a technician to the I&C Manager described the problem and recommended a change in the sensing points of the switches to allow them to function properly.

AWOs, M2-91-06744/06745, were issued to investigate the flow switch problem, but different pressure switches were used for the Local ID on the work requests. This action was contrary to the Caution statement in ACP-QA-2.02C, "WORK ORDERS," paragraph 6.2.1, which applies to the PMMS Planner or Authorized Person in Lead Department and states, "Many of the Quality Indicators, Cautions and Other Information which appear on the AWO are automatically filled in by the PMMS computer based on the Local ID which is used. For this reason, it is important to select a Local ID that properly represents the equipment to be maintained. If the ID used is for a procedure, then the nuclear indicators must reflect the QA status of the equipment affected by the procedure." No Local ID was assigned in the PMMS system for the flow switches associated with the X60A/B heaters, so the I&C maintenance personnel incorrectly used the Local ID of closely related components for the Control Room Air Filter Inlet D/P switches (PDS-8347/8348). As a result, the QA status was incorrectly indicated on the AWOs. The job description stated, "Evaluate for new design. Investigate changing sensing points of flow switches on Control Room HVAC heaters to prevent them from inadvertently turning on." This was the correct reason for the AWOs, but the incorrect Local ID identified the troubleshooting effort on another part of the CRAC system.

To properly evaluate a change to the sensing location of the flow switches, a jumper device, BJ 2-91-57, was proposed, properly approved by PORC in accordance with established administrative procedures (ACP QA-2.06B) on October 8, and installed on October 30, 1991. The purpose of the jumper was to test the effectiveness of shifting the sensing point of the flow switch to the inlet plenum of the associated fan.

The test of the flow switch in the X60A heater control circuit was first performed in the morning of October 30, 1991, and the results indicated that a shift in the sensor position did not change the performance of the switch. The flow switch still did not prevent the heater from being turned on when the associated fan was secured. This testing and the subsequent removal of the flow switch were accomplished under the AWOs that used the Inlet Filter D/P switches (DPS-8347/8348) for the Local ID. At this point, new AWOs were generated to support the subsequent troubleshooting effort that was expected. The new AWOs, M2-91-11519/20, used the appropriate X60A/B for the Local ID and included directions in the Job Description that "A three-PAGE AWO will be needed for Repair/Modifications."

At the completion of the initial testing and the removal of the flow switch, an I&C technician told the Control Room watchstanders that the CRAC system may be inoperative due to the removal of the flow switch and the Control Room watchstanders initiated an LCO action statement (LCO 3.7.6.1) at 10:55 a.m. that day, in accordance with ACP-QA-2.02C, paragraph 5.10. Since that was the first time any work was performed on the CRAC system, no LCO action statements were appropriate or required prior to October 30, 1991. However, the afternoon Control Room watchstanders on October 30, 1991, incorrectly determined that the switch provided no important function; therefore, there was no need for the LCO action statement and they lined out the entry. Although the CRAC duct heaters are not safety related, the ventilation system pressure boundary requires QA controls. System operability evaluations are required prior to work breaching this boundary.

Subsequent work progress/planning meetings in the I&C Department identified the errors associated with the incorrect use of a two-page AWO, because the work on the CRAC system heaters required QA procedures. The error in deleting the LCO action statement was also identified and corrected at that time. A Plant Incident Report (PIR 91-118) was initiated and a proper three-page AWO (M2-91-11622) was issued to complete the troubleshooting effort associated with the X60A heater control circuit, remove the test equipment, and return the system to normal. The new AWO also identified the appropriate LCO action statement associated with the work. No work or troubleshooting had been performed on the X60B heater control circuit at that time, so the required corrective actions were only associated with the X60A heater control circuit.

PIR 91-118 designated the cause of the incident to be personal error on the part of the I&C engineer because he had assumed that the system was out of service. The PIR listed the wrong local ID as only a contributing cause. The failure of the PMMS Planner/I&C Department authorized person to heed the caution in paragraph 6.2.1 of ACP-QA-2.02C was not even mentioned in the PIR. The fact that the Shift Supervisor/Senior Control Operator is responsible

for LCO requirements, in accordance with ACP-QA-2.02C, paragraph 5.10, not an I&C engineer, was also not included in the PIR.

The CRAC ventilation heater flow switch, which is a common commercially used switch and sub-component of the duct heaters, is not identified in the PMMS system and, therefore, is not classified by the Material Equipment Parts List (MEPL).

Conclusion

The original ventilation heater troubleshooting AWOs, M2-91-06744/06745, were incorrectly prepared. As a result, the workers failed to properly transition over to a three-page, QA orientated, AWO during the course of the troubleshooting effort. However, the workers did properly carry out the work described in the AWO (i.e., investigate changing sensing points of flow switches on Control Room HVAC heaters to prevent them from inadvertently turning on). Therefore, the supervisory review was at least adequate to make sure that the correct work was accomplished. In addition, LCO action statement implementation errors would most likely have been avoided, if the appropriate Local ID were used in the AWOs. In fact, the correct equipment was tagged out. Both the LCO implementation errors and the AWO procedural errors were promptly identified by NNECo and appropriately corrected; there was no safety significance to this event.

1.2 Radioactive Waste Gas Compressor

A second concern involved the work control procedures used to replace a failed suction pressure switch for the radioactive Waste Gas Compressor, "F1A."

Assessment

The inspector interviewed the I&C technicians involved in the replacement of the suction pressure switch for the radioactive Waste Gas Compressor, "F1A," and reviewed the documentation associated with the replacement. The following information was obtained:

After verifying that the installed pressure switch was defective, the I&C technicians obtained a replacement switch based on the information contained on the pressure boundary cover that was installed on the switch. When the replacement switch arrived, it was noted to be physically different from the failed switch and would not adjust to the required trip point. The I&C technicians initially procured the wrong replacement switch, because they mistakenly used the identification data on the pressure boundary cover. The I&C technicians went to the associated Loop Folder and requisitioned the listed part, which was in stock in the warehouse. This switch was bench calibrated and satisfactorily installed.

The Loop Folder was updated with additional schematics showing the switch and its appropriate setpoint. The I&C technicians verified and reinstalled the pressure boundary covers on the appropriate suction and discharge pressure switches.

Conclusion

When the replacement switch identification error was detected, the technicians referred to available documentation and obtained the correct switch. The technicians made an initial procurement mistake, but correctly resolved the problem. The incorrect switch was never installed in this non-safety-related system.

2.0 SERVICE WATER SYSTEM PDCR 2-057-90

The NRC provided a concern related to a plant design change request (PDCR) for installation of a sample valve and "T" fitting on the service water (SW) strainer differential pressure (D/P) instrument tubing at MP2. For reference, Inspection Reports 50-336/91-20 (section 6.2) and 50-336/91-28 (section 6.4) described the NRC's review of NNECO's MP2 SW system biofouling protection program.

Assessment

The SW system is a safety related fluid system that supplies cooling water (sea water) to the emergency diesel generators, the reactor building closed cooling water system heat exchangers, and the turbine building closed cooling water system heat exchangers. There are three 50% capacity SW pumps rated at 12,000 gpm each. At the discharge of each pump, there is a 24" automatic self-cleaning strainer. Each strainer has D/P monitoring instrumentation that initiates strainer backwash and provides a differential pressure alarm.

The purpose of (short form) PDCR 2-057-90 was facilitation of SW system sampling for chlorine content. Implementation and testing of PDCR 2-057-90 was done per work order AWO M2-90-15617. To reduce biological fouling, a sodium hypochlorite system chlorinated the SW system. PDCR 2-057-90 involved addition of a tee fitting, a 1/4" Whitey valve, and associated instrument tubing in the 1/4" SW strainer D/P instrument tubing for each strainer. The new sample valves were numbered 2-SW-276A, B, and C. PDCR 2-057-90 included a safety evaluation that concluded "this design change is safe and does not constitute an unreviewed safety question as defined in 10CFR50.59."

MP2 Technical Specification 3/4.7.4 required SW operability in modes 1, 2, 3, and 4. Prior to work approval, as required by ACP-QA-2.02C, section 6.5, the Senior Control Room Operator (SCO) determined installation of PDCR 2-057-90 in accordance with AWO M2-90-15617 did not affect SW operability.

The test plan in PDCR 2-057-90 required in-service leak testing (which was done on December 13, 1990) for the completed installation of sampling valves 2-SW-276A and B. Because the "C" SW strainer was unavailable at that time, NNECO deferred in-service leak testing of sampling valve 2-SW-276C.

ACP-QA-2.02C, revision 25, section 6.12, assigned responsibility for overall implementation and testing of plant modifications to the Plant Engineer. ACP-QA-2.02C, section 6.12.5, required (in part) that before a system or component may be declared operable and accepted by Operations, the Plant Engineer must verify that applicable administrative requirements of ACP-QA-3.10 have been met.

ACP-QA-3.10, Attachment 1, section 6.1, required (in part) completion of "applicable administrative impact items" and evaluation of other required administrative updates such as the examples listed on a PDCR (Form B)." Although not listed as an "administrative impact item" or "administrative update," Item 13D in Form B required completion of construction and pre-operational testing.

NNECO closed PDCR 2-057-90 on January 19, 1991. NNECO completed in service leak testing of 2-SW-276C on August 13, 1991 and closed AWO M2-90-15617 on September 12, 1991.

Conclusions

Based on discussions with cognizant NNECO personnel, physical inspection of the equipment in question, and review of relevant documentation, the inspector concluded the following: because NNECO closed PDCR 2-057-90 prior to completion of the testing specified in AWO M2-90-15617, in this instance there was inadequate attention to detail in compliance with applicable administrative control procedures. Further, requirements for completion of all necessary work documents and testing were not clearly promulgated by ACP-QA-3.10 for short form PDCRs. NNECO agreed to evaluate opportunities for improvement in ACP-QA-3.10 (that would help ensure completion of work documents and testing prior to PDCR closures), take appropriate action as necessary, and respond to the NRC.

Also, based on the preceding assessment and review of the PDCR 2-057-90 safety evaluation, the inspector concluded that closure of PDCR 2-057-90 prior to closure of AWO M2-90-15617 did not materially affect SW system operability.

3.0 RADIATION MONITOR DRAWINGS

The NRC provided concerns to NU related to certain procedures and a plant design change (PDC) for radiation monitoring equipment at MP2. NRC disposition of those concerns involved providing the concerns to NNECO for review and resolution, with subsequent NRC evaluation to ensure the adequacy of NNECO's actions. NNECO letter A09559, dated August 9, 1991, described NNECO's review of those concerns.

3.1 PDCR M2-90-032

During implementation of PDCR MP2-90-032 in early 1991, NNECO found some discrepancies between drawing 25203-39092, sheet 14C, and the as-built status of equipment.

Background

Inspection Reports 50-245/91-23 and 50-336/91-27 (IR 91-27), section 7.2, identified a similar concern regarding incorporation of design changes in drawings for radiation monitoring equipment. IR 91-27 concluded, in part, that there were weaknesses in coordinating vendor information into controlled drawings. Also, refer to the drawing control discussion in the "Supplementary Information On Prior Inspection Issues" section of this report.

Assessment

Plant design change record PDCR MP2-90-032 documented replacement of Magnahelic flow indicating switches with Photohelic switches for FIS-8011, 8123, 8132, 8145, 8262, 8434, and 9095. Those switches provided indication and control of flow to their associated radiation monitor.

With NNECO assistance, the inspector used the Generation Records Information Tracking System (GRITS) to determine if there were outstanding design change requests (DCRs) or design change notices (DCNs) against drawing 25203-39092, sheet 14C. Drawing 25203-39092, sheet 14C, was marked "as built" per DCR M2-P-2-21-77. According to GRITS, NNECO initiated DCR M2-P-0089-91 on August 15, 1991, to document the necessary drawing changes. Also, GRITS showed there were other DCRs and DCNs initiated in mid-1991 related to radiation monitoring equipment. For example, DCRs M2-P-0081-91, M2-P-0089-91, and M2-S-1031-91, and DCN DM2-P-0021-91 affected drawing 25203-39092, sheet 14E. Because DCR M2-P-0089-91 documented the necessary drawing changes, the inspector had no further questions regarding drawing 25203-39092, sheet 14C.

Conclusions

Based on discussions with cognizant NNECO personnel and review of relevant documentation, the inspector concluded that NNECO's process for identifying and resolving drawing discrepancies adequately documented the differences between drawing 25203-39092, sheet 14C, and as-built conditions.

3.2 I&C Procedures for Radiation Monitoring Equipment

The inspector reviewed the status of various procedures, related to the components affected by PDCR MP2-90-032, used to do I&C work on radiation monitoring equipment.

Background

Maintenance procedure IC 2422B was used to do I&C work on gaseous radiation monitors (RMs), including RM 8134B and RM 8145B. IC 2422D was used to do I&C work on particulate RMs, including RM 8132A, RM 8145A, and RM 8434A. RM 8132B was an MP2 Technical Specification required gaseous monitor that was calibrated using surveillance

procedure (SP) SP 2404AF.

A concern was that Photohelic flow switches were not calibrated with their associated RM. MP2 RMs typically had a particulate monitor (e.g., RM 8132A), gaseous monitor (e.g., RM 8132B), a Photohelic flow switch, and a sample pump arranged in series. Thus, flow switch calibration was necessary during calibration of either the particulate monitor or the gaseous monitor, but not with both monitors.

Assessment

The inspector did a general review of Instrumentation and Control (I&C) maintenance procedures IC 2422B and IC 2422D, and surveillance procedure SP 2404AF. SP 2404AF included calibration of flow indicating switch (FIS) FIS 8132. IC 2422B included calibration of FISs 8145 and 8434.

Biennial reviews of IC 2422B, IC 2422D, and SP 2404AF were overdue. IC 2422B and IC 2422D were in the process of being upgraded to the new procedure format. NNECO prepared a draft revision of SP 2404AF in December 1991 that incorporated a biennial review, and the procedure was in the PORC review process. ACP-QA-3.02D, section 6.1.1, required a periodic, systematic review of Station Procedures specified by ACP-QA-3.02. ACP-QA-3.02, section 6.2.3, included 2400 series SP or IC procedures. In a quarterly memorandum (MP-91-918), dated November 1, 1991, Document Services identified the last biennial review date for IC 2422B and SP 2404AF as December 1, 1989, and July 1, 1989, for IC 2422D. Biennial reviews were due within two years from the prior biennial review date.

Conclusions

SP 2404AF and IC 2422D adequately described calibration of FISs 8132, 8145, and 8434. The biennial review of IC 2422B, IC 2422D, and SP 2404AF was not completed in a timely manner as required by ACP-QA-3.02D. NNECO was aware of the need to complete the biennial review of these procedures and had action in progress to complete this activity. Additional examples of overdue biennial reviews were described in Inspection Report 50-336/91-29 and elsewhere in this report.

4.0 SURVEILLANCE PROCEDURE SP 2401R

Testing of the control element assembly (CEA) withdrawal prohibit (CWP) function was done using surveillance procedure (SP) SP 2401R. Formerly, CWP testing was done using SP 2401F and SP 2401J. The NRC provided a concern related to the qualification of technicians assigned to do SP 2401R in mid-1991.

Assessment

Previous NRC inspection reports described the results of NRC inspections related to the qualification of NNECO personnel to do maintenance and surveillance activities. Inspection Report numbers 50-245/91-80, 50-336/91-80, and 50-423/91-81 (IR 91-80) described the results of an Integrated Performance Assessment Team (IPAT) inspection done during July 1991. IR 91-80, section 3.2, found (in part) that maintenance and I&C personnel "appeared to be well trained in conducting the observed activities." Inspection Report number 50-336/91-29 (IR 91-29) was a special safety inspection of issues brought to NNECO by the NRC. IR 91-29, section 2.0, described the NRC's general assessment of I&C technician qualification.

SP 2401F and SP 2401J had specific qualification requirements for the I&C technicians assigned to do these surveillance tests. Acting as a two person team, the technicians in this instance had the requisite qualification to do SP 2401F and SP 2401J, as shown on the Individual Qualification Matrix (IQM).

The IQM had no specific qualification requirement for SP 2401R. The inspector questioned if specific training and qualification were required for SP 2401R. NNECO agreed to evaluate the need for specific training and qualification for I&C technicians to do SP 2401R, take appropriate action as necessary, and respond to the NRC.

Conclusions

Based on review of applicable procedures and discussion with cognizant NNECO personnel, the inspector concluded NNECO may not have adequately ensured the I&C technicians completed required training and were formally qualified prior to performing SP 2401R, as required by ACP-QA-8.27, section 5.3.1. However, since the I&C technicians were qualified to do SP 2401F and SP 2401J, and testing of the CWP function was formerly done using those SPs, the inspector had no further concerns regarding this issue.

5.0 HIGH RANGE STACK GAS MONITOR

The High Range Stack Gas Monitor (HRSGM) is a system for sampling particulate and iodine to measure high range post-accident gaseous releases from the MP2 vent stack. Sample flow is monitored using two geiger-mueller (GM) detectors (RM 8168A and B). GM detectors (RM 8168C, D, and E) also monitor three separate filter assemblies. The HRSGM is designed to alarm if setpoints are exceeded.

Prior NRC inspection of the HRSGM system was documented in NRC Inspection Report 50-336/91-19 (IR 91-19). IR 91-19 concluded the I&C Department implemented a very good program to calibrate the effluent and process radiation monitors. Also, IR 91-19 concluded there was excellent management support to maintain the radiation monitoring system integrity and operability.

NRC Inspection Report 50-245/91-23 and 50-336/91-27 (IR 91-27), section 7.0, described a number of concerns regarding incorporation of design changes into drawings and the accuracy of as-built conditions shown in drawings. As documented in IR 91-27 and Plant Incident Report (PIR) 91-65, there were discrepancies in drawings for RM 8132 and RM 8168. Additionally, IR 91-27, section 8.0, described the Plant Operations Review Committee (PORC) review of surveillance procedure SP 2404AR. IR 91-27 concluded the procedure validation process appeared to require additional emphasis to detect and correct errors prior to the approval process.

5.1 Status of Procedures for HRSGM I&C Work

The inspector reviewed the status of various procedures used to do I&C work on the HRSGM.

Inspection Findings

The inspector identified and did a general review of two surveillance procedures (SP), SP 2404AR and SP 2404AS, that applied specifically to the HRSGM. NNECO had previously revised SP 2404AR, based on the procedure upgrade program, but had not yet upgraded SP 2404AS. NNECO stated its intent is to upgrade all such PORC approved procedures by the end of 1992.

The inspector reviewed documentation of surveillance 2404AR-1 that was done December 23, 1991. SP 2404AR, section 6.2, is a source check that includes a comparison of RIC-8168, Integrated Computer System (ICS) display, and recorder RC-101C readings. Data sheet I&C Form 2404AR-1, section 6.2.2, Meter Cross Checks, records "as found" and "as left" values for RIC-8168, ICS display, and RC-101C. Values for RIC-8168, ICS display, and RC-101C are 5.4 E-03, 5.2 E-03, and 5.0 E-03, respectively, which satisfies the acceptance criteria.

The biennial review of SP 2404AS was overdue. I&C management initiated AWO M2-90-14507 to do this biennial review. ACP-QA-3.02D, section 6.1.1, requires a periodic, systematic review of Station Procedures required by ACP-QA-3.02. ACP-QA-3.02, section 6.2.3, includes 2400 series SP or IC procedures. In a quarterly memorandum (MP-91-918), dated November 1, 1991, Document Services identified the last biennial review date for SP 2404AS as December 1, 1989, and a due date of December 1, 1991.

Conclusions

The biennial review of SP 2404AS was not completed in a timely manner as required by ACP-QA-3.02D. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond to the NRC. Additional examples of overdue biennial reviews are described in Inspection Report 50-336/91-29 and elsewhere in this report.

Based on review of SP 2404AR and SP 2404AS, plant walkdown, and discussion with cognizant I&C Department personnel, the inspector concluded SP 2404AR and SP 2404AS were adequate.

Specifically, surveillance 2404AR-1 adequately cross checked RIC-8168, ICS display, and RC-101C readings.

5.2 Conduct of Surveillance Testing

The inspector reviewed the conduct of surveillance testing which is required to ensure operability of the HRSGM.

Inspection Findings

MP2 TS 3.3.3.1 requires a minimum of one operable HRSGM channel in modes 1, 2, 3, and 4. To demonstrate operability of the HRSGM when in modes 1, 2, 3, or 4, MP2 TS 4.3.3.1 requires a channel check once per 12 hours, a channel calibration once per 18 months, and a channel functional test once per 31 days. The channel check is done as part of SP 2619A. The channel calibration and the channel functional test are done using SP 2404AS and SP 2404AR, respectively.

Surveillance testing of the HRSGM was done at appropriate intervals. The surveillance schedule is based on ACP-QA-9.02 and the MP2 TS. ACP-QA-9.02 defines the station surveillance program and ACP-QA-9.02B is the master control list for MP2 surveillance tests. I&C Department records for SP 2404AR and SP 2404AS indicates surveillance tests were done at appropriate intervals during 1990 and 1991.

Conclusions

NNECO conducted surveillances SP 2404AR and SP 2404AS at appropriate intervals during 1990 and 1991.

6.0 INSTRUMENT ROOT VALVE LABELS

The NRC provided a concern related to the labeling of instrument root valves in the instrument air system. NRC disposition of that concern involved providing the concern to NNECO for review and resolution, with subsequent NRC evaluation to ensure the adequacy of NNECO's actions. NNECO letter A09960, dated December 6, 1991, described NNECO's review of that concern.

6.1 Instrument Air Root Valve Labels

According to Northeast Utilities memorandum MP-2-91-139, dated September 30, 1991, valve labeling was 89% complete with a projected completion date of December 1992. Instrument and gauge labeling was complete on 17 of 128 systems, and expected completion was expected by December 1995. NNECO was tracking the plant labeling program status as controlled routing (CR) item CR 8139.

Assessment

The inspector discussed instrument air valve labeling with cognizant I&C and Operations personnel and reviewed applicable procedures and documents. NNECO stated its approach was to label instrument air (IA) valves that had assigned identification (ID) numbers. IA supply stop valves to I&C components, such as air operated valve (AOV) positioners, usually did not have ID numbers. Also, IA supply stop valves were normally located adjacent to their associated component, such as an AOV, that had a known ID number. Thus, NNECO stated there was no need to label such IA supply stop valves.

According to NNECO, the Electromark label data base had approximately 733 IA valve labels. These were for IA valves that were customarily operated by Operations personnel. Approximately 30% of that total number of valves actually had labels in place at the end of 1991.

NNECO stated that although IA supply stop valves for I&C components generally did not need labels, labels were provided when warranted in specific cases. For example, the heater drains tank normal level control valve (2-HD-109) was an AOV with two IA supplies to its positioner. The second IA supply stop valve (2-IA-632) to 2-HD-109 was appropriately labeled as "redundant air supply to 2-HD-109." Additionally, ACP 6.22 allowed plant personnel to request desired labels.

Physical inspection of AOVs 2-CND-34 and 2-CND-37 showed the following: (1) the AOVs had adequate labels and (2) IA supply stop valves for these AOVs were clearly associated with a specific positioner because of their close proximity (less than two feet) and an unobstructed view of IA tubing to the positioner.

Conclusions

Based on physical inspection, review of applicable procedures and documents, and discussion with cognizant NNECO personnel, the inspector concluded that, if effectively implemented, NNECO's labeling program would result in adequate labeling for MP2 systems and components. Also, the inspector concluded that NNECO had a adequate methodology for labeling IA supply stop valves to I&C components. Finally, IA supply stop valves for AOVs 2-CND-34 and 2-CND-37 did not require labels because they were obviously and uniquely associated with a specific positioner.

6.2 Instrumentation Valve Line-up

To sample the current MP2 I&C Department methodology for verifying instrument valve positions, the inspector observed an instrument valve line-up.

Assessment

The inspector did a general review of Instrumentation and Control maintenance procedure IC 2436A. The inspector also observed a portion of the conduct of IC 2436A that was done January 8, 1992, per AWO M2-91-10712.

ACP-QA-2.12, section 6.4.2.1 required that the MP2 I&C Department ensure proper alignment of certain MP2 instrumentation isolation stop valves. The MP2 I&C Department used IC 2436A and data sheet I&C Form 2436A-1 to document the proper valve line-up of specified safety-related instrumentation. The inspector observed the verification of instrument isolation valves, vent valves, drain valves and equalizer valves for the following level transmitters (LTs) and flow transmitters (FTs):

Instrument No.	Service
LT 3001	Reactor Water Storage Tank (RWST) level
LT 3002	RWST level
LT 3003	RWST level
LT 3004	RWST level
FT 5277A	Auxiliary Feed (AFW) Flow - S/G #1
FT 5277B	AFW Flow - S/G #1
FT 5278A	AFW Flow - S/G #2
FT 5278B	AFW Flow - S/G #2

NNECO was in the process of implementing a program to improve component labeling throughout Millstone Station, but the above transmitters were not yet adequately labeled. ACP-6.22, section 6.2.3.2, required labeling of instruments and gauges used for either reading a measurement or operating the plant. Component identification was done using the technician's knowledge of equipment location, pre-existing calibration stickers and pencil marked identification numbers, and by tracing instrument sensing lines back to properly labeled root valves.

Step 6.1 of IC 2436A required verification of valve position per I&C Form 2436A-1, which included "Isolation" and "Equalizer/Vents." When doing IC 2436A, the technicians actually verified instrument isolation, equalization, and vent and drain valves. The inspector discussed with I&C supervision the need to clearly state that the position of instrument drain valves was verified on I&C Form 2436A-1. NNECO agreed that clarification of I&C Form 2436A-1 regarding instrument drain valve verification was a warranted enhancement.

IC 2436A, section 6, required independent verification of valve position per ACP-QA-2.12. ACP-QA-2.12 referenced ACP-QA-2.20. ACP-QA-2.20, section 6.1.2, required (in part) that "Verifier independence must be maintained to ensure the integrity of the independent verification by minimizing interactions between individuals."

The I&C technicians did IC 2436A in close proximity and maintained oral communication during verification activities. The lead technician located the transmitters and verified valve positions, while the second verifier (a contract technician) was in the immediate vicinity. The second verifier then verified the valve positions while the lead technician was in the immediate vicinity. Both technicians individually did their valve position verification in a diligent manner that the inspector believed to be consistent with the techniques commonly employed by experienced and competent technicians.

When questioned by the inspector if "independent verification," as defined in applicable ACPs, allowed both verifiers to have significant interaction during IC 2436A, the technicians and I&C supervision were uncertain of independent verification requirements. NNECO agreed to evaluate the MP2 I&C Department independent verification methodology, take appropriate action as necessary, and respond back to the NRC.

On January 13, 1992, NNECO verified the correct position of the preceding valves, as documented in AWO M2-92-00347. Also, NNECO stated that it initiated a review of Millstone Station practices and procedures for independent verification.

Conclusions

During IC 2436A on January 8, 1992, there were two verifications of valve position, one by each of two I&C technicians, but the verification was done in a collaborative rather than independent manner. Because NNECO's valve labeling upgrade effort was not yet complete, the inspector believed there was increased importance in doing thorough and stringent independent verification activities. The Notice of Violation contained in NRC Inspection Report 50-336/91-29 described an example of inadequate independent verification that occurred during surveillance 2404AI-1 on December 4, 1991; since the corrective actions for that violation have not yet been completed, the inspector considers this incident another example of that violation.

Based on review of applicable requirements, direct observation of independent verification activities, and discussion with cognizant NNECO personnel, the inspector concluded that NNECO management expectations for independent verification activities were not clearly defined and communicated to plant personnel. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond back to the NRC.

6.3 Qualification of Personnel to do Valve Line-up Work

The inspector reviewed the process for identifying the qualification status of personnel doing valve line-up work.

Assessment

ACP-QA-2.12, section 5.3.2, required that I&C supervision "Ensure instrument stop valve checkoffs are performed by qualified personnel at the prescribed frequency." The Nuclear

Training Department (NTD) stated that the Combined Administration Course included discussion of independent verification requirements. Both technicians who did IC 2436A on January 8, 1992, stated they attended the Combined Administration Course. The inspector questioned I&C supervision regarding applicable requirements for qualification to do independent verification of safety related instrumentation valve line-ups. Also, the inspector questioned if I&C technician contractors had the requisite qualifications to do IC 2436A. I&C supervision was uncertain of the qualification requirements. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond back to the NRC.

Conclusions

Based on review of applicable requirements and discussions with NNECO personnel to date, the inspector concluded that, in this instance, NNECO did not adequately ensure personnel assigned to do independent verification work had the appropriate formal qualification, as required by ACP-QA-2.12. However, no instances were noted in which valve line-up work or independent verification activities were incorrectly performed. The inspector considers this incident another example of the procedure compliance violation cited in IR 50-336/91-29.

6.4 Housekeeping

During inspection of work activities related to AWO M2-91-10712, the inspector observed the following housekeeping issues:

Assessment

Unanchored material was located near FTs 5277A and B. Those FTs were in a radioactive materials storage area of the Auxiliary Building west penetration room at the 38'-6" elevation. Contrary to clearly delineated floor markings, a carton approximately 1/2 cu ft in size and an unknown plastic wrapped metal object approximately 3' by 3' by 6" were stored next to the instrument rack for FTs 5277A and B. NNECO immediately moved the carton to a proper storage location. Additional examples of unanchored material in MP2 included the following: (1) a welding machine was stored next to containment penetration for a sample line, (2) a six foot ladder was placed against FTs 5278A and B, and (3) tool boxes were stored on a wheeled cart that was adjacent to FTs 5277A and B.

On January 8, 1991, the inspector questioned if storage of unanchored material adjacent to safety related components was consistent with the seismic considerations described in ACP-QA-4.01, section 6.4.7, regarding the potential for the unanchored material to detrimentally affect safety related equipment. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond to the NRC.

During the next four weeks, the inspector did follow-up inspections to determine if NNECO adequately resolved the above described housekeeping issues. The inspector found that NNECO

did respond to specific NRC findings, but effective corrective action was not always taken to maintain conformance with ACP-QA-4.01.

Conclusions

Based on review of ACP-QA-4.01 and physical inspection of the Auxiliary Building west penetration room at the 38'-6" elevation, the inspector concluded NNECO did not adequately store material in all cases. The inspector found no instance in which there was actual damage to safety related components, but inadequate storage of unanchored material had the potential during a seismic event to detrimentally affect safety related components. Further, NNECO corrective action to date was inadequate to ensure conformance with ACP-QA-4.01 requirements. This issue remains an unresolved item pending future review of the adequacy of corrective actions (50-336/91-31-01).

7.0 EOF DIESEL GENERATOR

The NRC provided a concern related to the Emergency Operations Facility (EOF) Emergency Diesel Generator (EOF-EDG). The concern related to the adequacy of the work order (AWO M2-89-09594) for doing the annual load run using maintenance procedure MP 2722B on August 31, 1990, and certain EOF-EDG drawings. NRC disposition of that concern involved providing the concern to NNECO for review and resolution, with subsequent NRC evaluation to ensure the adequacy of NNECO's actions. NNECO letter A09920, dated November 27, 1991, described NNECO's review of that portion of the concern related to AWO M2-89-09594. The balance of the concern regarded assertions of discrepancies in certain EOF-EDG related drawings. NNECO stated that "evaluation and submission of any necessary drawing changes should be completed by late December, 1991."

Background

Adequate provisions for emergency facilities and equipment, included "at least one on-site and one off-site communications system; each system shall have a back up power source," according to 10 CFR 50, Appendix E, Paragraph IV.E.9. EOF requirements were defined in NUREG-0737, supplement 1, section 8.4, and other applicable regulations and licensing commitments. In section 12.3, the MP2 FSAR stated that the Millstone Nuclear Power Station Emergency Plan (EPlan) addressed the criteria set forth in NUREG-0654, revision 1, and NUREG-0737, supplement 1. EPlan, section 7.2.5, stated that emergency power was "provided by an auto-start diesel generator that is capable of meeting all EOF power requirements." The EOF-EDG was designed to provide a backup electrical power supply for the EOF.

The NRC documented its previous inspection of the EOF-EDG in Inspection Report 50-245/91-19, 50-336/91-23, and 50-423/91-19 (IR 91-23), section 9.0. IR 91-23 concluded, in part, that the EOF-EDG satisfactorily operated in 1991 during hurricane Bob and during the September 1991 EPlan exercise.

On November 1, 1991, as documented in Plant Incident Report (PIR) 2-91-117, the EOF-EDG failed to load automatically during surveillance EPIP-4606. NNECO cleaned the timer card contacts and successfully tested the EOF-EDG. As documented in PIR 2-91-123, on November 8, 1991, the EOF-EDG again failed to load automatically during surveillance EPIP-4606. NNECCO prepared AWO M2-91-12093 for repair of the loading problem. Repair work included replacement of the transfer-retransfer module (ONAN part no. 300-1188). Subsequently, on December 5, 1991, NNECO successfully tested the EOF-EDG with assistance from the vendor, GLT Industries.

7.1 Status of Procedures for EOF-EDG Work

The inspector reviewed the status of various procedures used to do work on the EOF-EDG.

Assessment

The inspector did a general review of Maintenance Procedure MP 2722B and Emergency Plan Implementing Procedures EPIP 4303 and EPIP 4606. MP 2722B was for performance of the annual EOF-EDG load run and EPIP 4303 was for EOF-EDG automatic and manual operation, and EPIP 4606 was a periodic test of EOF-EDG operational readiness.

The biennial review of MP 2722B was overdue. ACP-QA-3.02D, section 6.1.1, required a periodic, systematic review of Station Procedures required by ACP-QA-3.02. ACP-QA-3.02, section 6.2.3, included 2700 series MP procedures and EPIP 4000 and 4600 procedures. In a quarterly memorandum (MP-91-918), dated November 1, 1991, Document Services identified the last biennial review date for MP 2722B as December 6, 1989. Completion of the MP 2722B biennial review was due by December 1, 1991. The biennial review of EPIP 4606 was done September 15, 1991. Document Services, as of January 16, 1992, had no record (either revised procedures or Form 364's to document review) that NNECO did the biennial reviews of EPIPs 4303, 4306, 4605, 4606, 4608, and 4609. NNECO stated that biennial reviews were done but not yet approved by SORC.

At the end of this inspection period, NNECO converted EPIPs 4303, 4306, 4605, 4606, 4608, and 4609 to either operating procedures (OPs) or surveillance procedures (SPs). The new procedures were OP 2399A, OP 2399B, SP 2678A, SP 2678B, SP 2678C, and SP 2678D, respectively. NNECO obtained PORC approval to issue the new OPs and SPs, and SORC approval to cancel the corresponding EPIPs.

MP2 FSAR Appendix 12A included Appendix D, Listing of Supporting Procedures that Implement the Plan, that listed EPIP 4302. EPIP 4302 was canceled and incorporated with EPIP 4304.

Conclusions

Based on review of applicable procedures and discussion with cognizant NNECO personnel, the inspector concluded the biennial review of MP 2722B and EOF operations related EPIPs was not done as required by ACP-QA-3.02D. NNECO was pursuing incorporation of biennial reviews for those EPIPs concurrent with the issuance of the new OPs and SPs. Additional examples of overdue biennial reviews were described in Inspection report 50-336/91-29 and elsewhere in this report; the inspector considers this finding to be another example of the procedure compliance violation noted in that report.

Also, the inspector concluded the MP2 FSAR did not contain an accurate listing of EPIPs. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond to the NRC.

7.2 EOF-EDG 1990 Annual Load Test

Assessment

NNECO did an annual load test of the EOF-EDG on August 31, 1990, using AWO M2-89-09594. ACP-QA-2.02C, section 6.3, required the lead department head or authorized person to "review all procedures and forms referenced on the Work Order to insure they provide adequate guidance for the work to be performed." Because it was a non-QA work order, there was no requirement for AWO M2-89-09594 to include all work related procedures (e.g., MP 2722B) and forms in the work package. AWO M2-89-09594 referenced Maintenance Form 2701J-43, EOF, and Emergency Security Diesel. Maintenance Form 2701J-43 was a list of inspection items and acceptance values for operating cycle preventive maintenance.

The annual load test involved opening the EOF-EDG output breaker and installing a load bank. The safety evaluation for MP 2722B stated (in part) that, "In the event that manning of the EOF is required simultaneously with a loss of normal power while the load run is in progress, the electricians monitoring the run could reconnect the diesel to the EOF within a half an hour." This work was done by the vendor representative and a NNECO mechanic. The inspector questioned if the safety evaluation was valid because electricians were not present during the load run. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond to the NRC.

Conclusions

Based on review of applicable procedures and documentation, the inspector concluded AWO M2-89-09594 contained adequate references. Although it may be convenient for workers to have a reference to MP 2722B in work orders for doing the annual EOF-EDG load test, there was no requirement to do so.

7.3 As-Built Drawings

The inspector reviewed drawings 25205-30007, 25205-39002 (sheet 3), and 25205-32008 to determine if those drawings adequately depicted the as-built status of certain components. The components were circuit breaker (CB) 26 in electrical lighting panel ELP1, CBs 10 and 12 in ELP2, remote control panel PN1, and a utility plug near the automatic bus transfer (ABT) device.

Assessment

Drawing 25205-30007 was marked "non-QA" and stated it was as built per PDCE-2-074-89 and DCR-MG-P-105-90. ELP1 slot 26 was labeled "SPACE" and the drawing indicated ELP1 had no CB installed in slot 26. The inspector found a CB labeled "COMPUTER ROOM HIGH SPEED PRINTER" installed in ELP1 slot 26. ELP2 slots 10 and 12 were labeled "SPARE" and "TELEPHONE UPS," respectively, and the drawing indicated EPL2 had no CB installed in slot 10. The inspector found CBs labeled "LIGHTING CONTROL CONTRACTOR" and "BATTERY CHARGER" installed in ELP2 slots 10 and 12, respectively. NNECO stated that it recently did a walkdown of electrical panels ELP1, ELP2, EPP1, and EPP2 to ensure that the actual panel configuration matched the circuit descriptions in drawing 25205-30007. Based on that review, NNECO initiated design change notice (DCN) DM2-P-075-91, dated December 13, 1991, to correct the as-built status of ELP1 slot 26 and ELP2 slot 10 as shown on drawing 25205-30007. NNECO stated that it intended to revise the label on ELP2 slot 12 to conform with drawing nomenclature.

At location G-8, drawing 25205-30007 indicated there was a "REMOTE CONTROL PANEL IN MECH. EQUIP. ROOM." This was not a physically separate panel and there was no requirement to that effect. The remote control panel was located within the ABT cabinet in the mechanical equipment room.

Drawings 25205-32008 and 25205-39002 (sheet 3) indicated they were as-built per DSR-M2-S-371-82. Drawing 25205-39002 (sheet 3) indicated the ABT device schematic was redrawn in drawing 25205-32008. The inspector compared drawing 25205-32008 with 25205-39002 (sheet 3). Because drawing 25205-32008 depicted some elements in a manner somewhat different than drawing 25205-39002 (sheet 3), the inspector questioned if drawing 25205-32008 matched as-built conditions. NNECO did a walkdown of the ABT panel and confirmed the adequacy of technical drawing elements. Drawing 25205-39002 (sheet 3) had references to notes 2, 3, 4, and 5, but drawing 25205-32008 did not reference those notes. The inspector questioned if notes 2, 3, 4, and 5 were adequately depicted on the drawings. NNECO stated that it initiated DCN DM2-P-001-92, dated January 9, 1992, to clarify these notes and other aspects of drawing 25205-39002 (sheet 3).

The inspector reviewed other assertions of technical concerns regarding drawing 25205-32008. Drawing 25205-32008 correctly depicted a utility plug (P1) that was physically located at the bottom of the ABT cabinet. NNECO stated that switch A9 had incorrect nomenclature ("STOP-

HC-NORMAL"). The correct switch positions were "STOP-AUTO-RUN." Also, NNECO stated that it would make appropriate changes, as necessary, in procedures MP-2722B and EPIP-4303 to reflect the correct switch nomenclature.

Conclusions

Based on physical inspection of equipment, review of applicable drawings, and discussion with cognizant NNECO personnel, the inspector concluded NNECO did not adequately maintain the as-built status of drawings 25205-30007, 25205-39002 (sheet 3), and 25205-320 The inspector believed nomenclature differences and drawings that did not match as-built conditions had the potential to cause worker confusion, but the inspector found no evidence that such drawing inadequacies resulted in a significant degradation of EOF-EDG operability or reliability. Finally, the inspector concluded that, if effectively implemented, DCNs DM2-P-001-92 and DM2-P-075-91 would adequately resolve relevant concerns regarding EOF-EDG drawings.

Inspection Report 50-245/91-23 and 50-336/91-27 (IR91-27), section 7.0, described a number of similar concerns regarding incorporation of design changes into drawings and the accuracy of as-built conditions shown in drawings.

7.4 Qualification of Personnel to Perform EOF-EDG Work

The inspector reviewed the process for identifying the qualification status of personnel doing work on the EOF-EDG.

Assessment

The inspector did a general review of the training NNECO provided for Operations and Maintenance personnel involved in EOF-EDG work. Operations personnel received on the job training in EOF-EDG operation as part of their training that was documented on Plant Equipment Operator (PEO) Qualification Sheet E5-25. Mechanical and electrical maintenance personnel do not receive specific training on the EOF-EDG. According to the Nuclear Training Department (NTD), the EOF-EDG is not on the task list for mechanic training. On January 13, 1992, NNECO held an MP2 Mechanical Training Program Control Committee (TPCC) meeting and concluded that EOF-EDG training was required and the scope of training would be determined by task analysis. NNECO stated that the NTD previously did a task analysis of electrician work on the EOF-EDG and concluded there was no need for specific EOF-EDG electrician training.

Conclusions

Based on review of relevant documentation and discussion with cognizant personnel, the inspector concluded there were opportunities for improvement in the training and qualification for personnel doing work on the EOF-EDG. These were not regulatory requirements, but were training program enhancements that could help ensure the adequacy of EOF-EDG maintenance.

8.0 SEISMIC QUALIFICATION OF HPSI SUCTION PRESSURE GAUGES

The NRC provided a concern related to the seismic qualification of suction pressure gauges in the High Pressure Safety Injection (HPSI) system pump suction piping. The root piping and associated tubing and components are classified as QA, Seismic Category I.

Background

For in service inspection (ISI) purposes, PDCR 2-112-79 installed commercial grade pressure indicating gauges in the suction piping of several safety related pumps. Northeast Utilities memorandum NSE-M-86-59 identified a concern that the installation of those gauges was not seismically reviewed and requested an evaluation.

Northeast Utilities memorandum PSE-SA-89-061 described an evaluation of 17 pressure gauges, related to PDCR 2-112-79, that included HPSI system PIs-3046, 3048, and 3050. That memorandum stated that "the pressure gauges were installed using several unnecessary fittings, couplings, and valves. No apparent design criteria were used. The present configuration is not in accordance with established plant design criteria. However, by engineering judgement, a postulated DBE seismic event would not result in a structural failure that would compromise the integrity of the associated piping system." PSE-SA-89-061 recommended that "the pressure gauges be modified according to Figures 14 and 15. The root piping and pressure gauge fittings have been evaluated in the modified condition for all applicable load cases. All calculated stresses are within the code allowable limits as defined in ASME III, 1974 Edition and are documented in reference 2 (NUSCO Calculation PDCR-2-112-79-1067 GP, revision 0).

NUSCO reportability evaluation, REF 91-34, dated August 22, 1991, determined that "there were no pressure boundary concerns for the subject installations. All stresses in the piping have been determined acceptable and meet the design basis Code allowable limits." This evaluation was based (in part) on the practice of isolating the pressure gauges and associated tubing during normal operation. Also, NU memorandum MCE-SA-91-105 stated that NUSCO calculation MP2-LOE-079EM determined there were "no pressure boundary concerns for the subject installations."

NRC Inspection Report 50-336/91-15 (IR 91-15), section 6.6, described a similar concern regarding the seismic qualification of pressure gauges on the service water supply strainers to the emergency diesel generators (EDGs). According to IR 91-15, "NNECO review of existing plant conditions during routine operating activities identified a potential nonconforming condition on a safety related EDG. NNECO reviews identified that the 1977 PDCR documentation was discrepant in that the seismicity of the instrument gages on the seismically installed strainers were not specifically addressed." NNECO took adequate action regarding the potential nonconforming condition and there was no impact on EDG operability.

8.1 PI Root Valve Position

The inspector reviewed relevant documentation and physically inspected the following PIs. Drawing status refers to the instrument root valve position depicted on the drawing and as found status refers to the actual position observed by the inspector.

Pressure Gauges In Pump Suction Lines - Root Valve Position

Gauge ID	Root Valve 2-	Associated Pump	Drawing 25203-		As Found Status
			P&ID No.	Status	
PI-3046	SI-090	P-41A HPSI	26015/sh 2	Closed	Closed
PI-3048	SI-088	P-41B HPSI	26015/sh2	Closed	Closed
PI-3050	SI-086	P-41C HPSI	26015/sh 2	Closed	Closed
PI-5403	CN-96B	P-9A Aux. Feed	26005/sh 3	Closed	Closed
PI-5405	CN-97B	P-9B Aux. Feed	26005/sh 3	Closed	Closed
PI-5401	CN-95B	P-4 Aux. Feed	26005/sh 3	Closed	Closed
PI-6743	RB-111A	P-11A RBCCW	26022/sh 1	Closed	Closed
PI-6745	RC-111C	P-11B RBCCW	26022/sh 1	Closed	Closed
PI-6747	RB-111E	P-11C RBCCW	26022/sh 1	Closed	Closed
PI-3051	SI-093	P-42A LPSI	26015/sh 1	Open	Open
PI-3053	SI-091	P-42B LPSI	26015/sh 1	Open	Open
PI-3055	CS-032	P-43A Cont.Sp.	26015/sh 1	Closed	Closed
PI-3057	CS-030	P-43B Cont.Sp.	26015/sh 1	Closed	Closed
PI-7436	RW-126A	P-13A SFP Cool	26023/sh 2	Closed	Closed
PI-7662	RW-126B	P-13B SFP Cool	26023/sh 2	Closed	Open
PI-8859	CHW-7	P-122A CHW	26027/sh 2	Closed	Open
PI-8863	CHW-36	P-122B CHW	26027/sh 2	Open	Open

Assessment

The inspector found the following PI root valves to appropriately be in the closed position: SI-090, SI-088, SI-086, CN-96B, CN-97B, CN-95B, RB-111A, RB-111C, RB-111E, CS-032, and CS-030. The inspector had no further questions regarding the position of those valves.

Low pressure safety injection (LPSI) valves 2-SI-093 and 2-SI-091 were open because they were also the root stop valves for PT-3051 and PT-3053, respectively. This was consistent with the applicable drawing, prior engineering evaluation, and valve line up sheets (OPS Forms 2604L-2 and 2604M-2). The function of PTs 3051 and 3053 was to provide a low pressure alarm when in RCS reduced inventory operations. When questioned by the inspector, NNECO stated that it did not do a reportability evaluation, per NEO 2.25, for the modification that installed a "tee" in the instrument tubing that connected PTs and PIs downstream of 2-SI-093 and 2-SI-091. NEO 2.25 promulgated NNECO's instructions for 10 CFR 50.72, 10 CFR 50.73, and 10 CFR 50.9 operability and reportability determinations. NNECO stated that it would do an NEO 2.25 evaluation of the above described 1990 plant modification that was done per PDCR 2-016-90.

Testing of the spent fuel pool cooling (SFP) pumps was in progress during the inspection. Therefore, the inspector was not certain if valves 2-RW-126A and 2-RW-126B were in their normal position or a test position. According to the valve line up sheet (OPS Form 2305-1), valves 2-RW-126A and 2-RW-126B were normally open.

Regarding the chilled water system (CHW), the inspector found valves 2-CHW-7 and 2-CHW-36 to be in the open position. According to the valve line up sheet (OPS Form 2330C-1), valve 2-CHW-7 was normally closed and valve 2-CHW-36 was normally open. OPS Form 2330C-1 and the valve label showed normally closed valve 2-CHW-37 to be "Chill Water Pump (P122B) PI-8863 Isolation." Thus, the inspector found that valve 2-CHW-7 was not in its expected position and that there were inaccuracies in OPS Form 2330C-1 regarding valves 2-CHW-36 and 2-CHW-37. Also, the inspector found that drawing 25203-26027, sheet 2, showed PP-8858 installed downstream of normally open valve 2-CHW-6, but 2-CHW-6 was normally closed and PP-8858 was not installed. The inspector discussed the CHW valve line up with the on duty SS and SCO who promptly corrected the position of valve 2-CHW-36 and agreed to have cognizant NNECO personnel review OPS Form 2330C-1.

Because there were inaccuracies in OPS Form 2330C-1, the inspector questioned if the valve line-up sheets contained accurate information for the other valves listed in the preceding table. NNECO promptly reviewed the affected OPS Forms and found that the OPS Forms agreed with the applicable drawing, except for the SFP system. Subsequently, NNECO initiated a change to OPS Form 2305-1 to indicate a normally closed position for 2-RW-126A and 2-RW-126B.

The inspector questioned if a normally open position for valves 2-SI-093, 2-SI-091, 2-RW-126A, 2-RW-126B, and 2-CHW-36 was consistent with design assumptions regarding the seismic qualification of the PIs associated with these instrument root valves. NNECO stated that its NEO 2.25 evaluation appropriately assumed an open position for these valves. The inspector

questioned why 2-CHW-36 was not a normally closed valve. NNECO agreed to evaluate if 2-CHW-36 and 2-CHW-7 should both be in the normally closed position, and take appropriate action as necessary.

The inspector reviewed a representative sample of surveillance procedures (SPs) for pump operability determination. Those SPs typically involved use of the PIs listed in the preceding table for their associated pump. The SPs did not specifically indicate if the instrument root valve for each PI was to be opened during pump operation and then closed during restoration to its normal position. The inspector discussed with cognizant Operations personnel the need to clarify instrument root valve position in such SPs. NNECO agreed that specifying instrument root valves in such instances may be desirable to ensure operators correctly position the valves.

Conclusions

Based on discussion with cognizant NNECO personnel, physical inspection, and review of relevant documentation, the inspector concluded that NNECO adequately maintained, in the proper position, the instrument root valves delineated in the preceding table. There was one instance (2-CHW-7) in which a valve was found in an incorrect position, but the inspector believed that may have been due to an ongoing ISI test of the associated pump.

Based on the inaccuracies noted for OPS Form 2330C-1 and OPS Form 2305-1, the inspector concluded that personnel attention to detail in validation of these valve line up sheets may have been inadequate. NNECO agreed to evaluate the adequacy of OPS Forms 2330C-1 and OPS Form 2305-1, take appropriate action as necessary, and respond to the NRC.

Based on review of some representative procedures and discussion with cognizant Operations personnel, the inspector concluded that an opportunity for improvement was listing in SPs the instrument root valves that had to be opened or closed. This was not a regulatory requirement, but was an enhancement NNECO agreed could be helpful. NNECO stated that it would evaluate the need to specify in SPs the instrument root valves for PIs used in pump operability determinations, take appropriate action as necessary, and respond to the NRC.

8.2 PDCR 2-89-046 Implementation Status

NNECO used a separate work order for each PI configuration that was to be modified due to PDCR 2-89-046. The inspector reviewed the implementation status of work orders associated with PDCR 2-89-046.

Assessment

Work associated with HPSI pump PIs 3046, 3048, and 3050 was being done per AWOs M2-91-08578, M2-91-08579, and M2-91-08580, respectively. Modification of the instrument tubing for PI-3046 and PI-3050 was done as outlined by PSE-SA-89-061. NNECO issued DCN DM2-S-511-91 for the unique configuration required for PI-3048. Remaining work for all three

AWOs involved procurement and installation of replacement gauges with a higher range.

Work associated with AFW pump PIs 5403, 5405, and 5401 was done per AWOs M2-91-08569, M2-91-08571, and M2-91-08572, respectively. Work associated with RBCCW pump PIs 6743, 6745, and 6747 was not done; however, PIs 6744, 6746, and 6748 were done per AWOs M2-91-08577, M2-91-08574, and M2-91-08573, respectively. The inspector questioned why the modified PIs were not the PIs listed in the PDCR. NNECO stated that PIs 6744, 6746, and 6748 were the PIs actually used to do ISI testing of the RBCCW pumps; therefore, NNECO modified these PIs rather than PIs 6743, 6745, and 6747. NNECO stated it would prepare a DCN that would define this change for PDCR 2-89-046.

Because the gauges and tubing associated with PIs 6743, 6745, and 6747 did not appear to be a standard design, as outlined by PSE-SA-89-061, the inspector questioned if NNECO evaluated the adequacy of these gauges. A similar example was instrumentation installed in the CHW system at valve 2-CHW-37. NNECO stated it did not evaluate these gauges, but would do so.

Work associated with LPSI pump PIs 3051 and 3053 was done per AWOs M2-91-08581 and M2-91-08582, respectively. Work associated with Containment Spray pump PIs 3055, and 3057 was being done per AWOs M2-91-08583 and M2-91-08584, respectively. Modification of the instrument tubing for PI-3046 and PI-3050 was done as outlined by PSE-SA-89-061. Remaining work for both AWOs involved procurement and installation of replacement gauges with a higher range. Work associated with SFP pump PIs 7436, and 7662 was done per AWOs M2-91-08585, and M2-91-08586, respectively. Also, work associated with CHW pump PIs 8859 and 8863 was done per AWOs M2-91-08587 and M2-91-08588, respectively.

The inspector questioned: (1) were there instances at MP2, other than those already described, that involved installation of non-seismically qualified instrumentation in a seismic category I system, and (2) if so, when based on an appropriate evaluation, were the root valves maintained in a closed position (if required). NNECO stated that although no such evaluation was done on a programmatic basis, NNECO was not aware of any other similar installations that deviated from the original root piping installation guidelines. Original guidelines included specifications 7604-MS-64 and 7604-MS-66. NNECO agreed to assess the need for programmatic evaluation of non-seismically qualified instrumentation installed in seismic category I systems, take appropriate action as necessary, and respond to the NRC.

Conclusions

Based on review of applicable documentation, physical inspection, and discussion with cognizant NNECO personnel, the inspector concluded that, if effectively implemented, completion of outstanding DCNs and AWOs will result in satisfactory completion of the design change defined in PDCR 2-89-046. Regarding the work associated with the RBCCW PIs, the inspector concluded this was an example in inadequate attention to detail in design control. The work documents resulted in modification of PIs not listed in the design change document. NNECO agreed to issue a DCN to document the actual design implementation.

Conclusions regarding the adequacy, on programmatic basis, of non-seismically qualified instrumentation installed in seismic category I systems were pending NRC evaluation of NNECO's assessment of this matter.

9.0 ADMINISTRATIVE CONTROL OF RADIATION MONITOR MAINTENANCE

Concerns had been expressed regarding administration deficiencies surrounding activities for radiation monitors. Specific issues include contradictions between procedures and vendor manuals, setpoint control, and inadequate radiological work practices.

Assessment

One concern involved discrepancies between acceptance criteria specified by a vendor technical manual and that specified by surveillance procedure SP 2404AG, "Waste Gas Process Radiation Monitor (RM 9095) Functional Test," revision 1. Specifically, the vendor manual had stated that correct operation of the Upscale Check system was verified by obtaining a "count level equal to the check source level." However, the procedure specified acceptance criteria for the Upscale Check as "count level indicator increase." Because of this discrepancy, the validity of the surveillance, and therefore the operability of the monitor was in doubt.

The licensee had responded that the vendor manual contained generic recommendations for Upscale Check tests, and that these recommendations were not applicable and were superseded by the PORC-approved procedure. The Northeast Utilities Service Company (NUSCO) Radiological Analysis Branch had confirmed the adequacy of the Waste Gas Monitor functional test in a memorandum (NE-91-RA-338, dated May 28, 1991) and concurred that the procedure took precedence over the vendor manual.

The original concern and licensee response referenced Section 6.2 of a draft Revision 2 to the surveillance procedure as providing the intended acceptance criteria ("Upscale Check > Background"). To date, this revision has yet to be approved. The inspector considered that NNECO should have referenced an approved procedure in response to this concern.

The inspector also reviewed a copy of SP 2404AF, Revision 1, Change 5, which includes corrections to identified problems and extensive procedure step rewrites that were incorporated as part of this latest upgrade. The inspector determined, based on review, that the original procedure "deficiencies" would not have prevented a knowledgeable I&C technician from completing the calibration in a satisfactory manner. The Change Routing Sheet used to process and implement the I&C procedure change is not required by Millstone administrative procedures, but rather is a tool developed by the MP2 I&C department to initiate, track, and document actions taken by personnel in the procedure upgrade process.

A concern was identified related to the disposition of setpoint control forms for radiation monitor surveillance. Specifically, procedure OP 2383C, "Radiation Monitor Setpoint Control," requires that Alarm Setpoint Control form OP 2383C-1 be forwarded to the Engineering Department for review following an equipment setpoint change. However, during the performance of SP 2404AV, "RBCCW Radiation Monitor RM 6038 Calibration," it was noted that Setpoint Control forms for two setpoint changes conducted May 11, 1991, and July 8, 1991, had not been forwarded to the Engineering Department.

NNECO responded that the necessary forms were on file, having been reviewed in September 1991. The inspector obtained copies of the forms in question and conducted a review of the forms and procedure OP 2383C. The procedure specifies no time frame restrictions for routing Setpoint Control forms to the Engineering Department, and the inspector concluded that the procedure was being followed. Unit 2 Engineering does maintain a file of all radiation monitor setpoint control forms.

Conclusion

The inspector determined that NNECO took appropriate action in response to the above issues. Correct actions were taken to resolve vendor manual and procedure differences for RM 9095. Additionally, the Change Routing Sheet was adequate as initially filled out to implement the necessary procedure change of SP 2404AF, and the I&C supervisor was exercising supervisory discretion in his assignment of the procedure change action. The issues reflected minor administrative problems in the conduct of routine maintenance, procedures, and record keeping. These issues did not affect nuclear safety, and the corrective actions taken indicate that these concerns should be closed.

10.0 STATION BATTERIES

The NRC provided a concern about the safety-related Station Battery and the non-safety-related Turbine and Computer Battery procedures. The NRC disposition of this concern involved an initial NRC inspection of the safety aspects of the concern and then the concern was provided to the licensee for review and resolution. After the licensee response was received, a subsequent NRC inspection was conducted to evaluate the adequacy of the licensee's corrective actions. NNECO letter A10024, dated January 8, 1992, described the licensee's evaluation of the concern. The results of the subsequent NRC inspection are as follows:

Assessment

The inspector reviewed the battery procedures in question along with the technical manual and other applicable technical documentation associated with the installed batteries. The inspector also interviewed the engineer responsible for battery procedures and reviewed the ongoing actions at Millstone to improve the battery procedures.

A change to "Battery Pilot Cell Surveillance," SP 2736A, did provide retorque values for the

Station Batteries, 201A and 201B. However, the vendor technical manual and the Institute of Electrical and Electronics Engineers (IEEE) Standard 450-1980 requirement to perform periodic connection retorque checks and the IEEE requirement to observe the battery for inter-cell connection heating are not contained in present Station Battery or Turbine and Computer Battery procedures. Periodic terminal resistance checks are presently performed during Battery Service Tests, which are conducted every 15 to 18 months and use Individual Cell Voltage (ICV) measurements. NNECO is in the process of revising the applicable battery procedures to include the connection retorque check frequency and a periodic inter-cell electrical resistance measurement method, acceptance values, and test frequency. NNECO does not intend to institute electrical connection bar temperature measurements during battery performance discharge tests. NNECO technically justified this action and obtained the vendor's concurrence with this decision.

During the inspection, opportunities to improve the Battery Pilot Cell Surveillance procedure, SP 2736A, Computer and Turbine Battery Inspections procedure, MP 2720F1, and Battery Terminal Inspection and Cleaning procedure, MP 2720F2, were noted. These are not necessarily regulatory requirements, but constitute enhancements that would be helpful. The following are examples of such improvement opportunities:

- Incorporate the Caution statement of the vendor technical manual, VTM2-127-001A, paragraph 4.3, that requires disconnecting the battery from the load and charger equipment when performing the connection checks;

- Coordinate the battery procedure revisions so that the common notes, cautions, and actions are worded in standardized formats in all the appropriate procedures; and

- Since the Computer battery is not made by the same vendor as the Turbine battery, a thorough review of both Technical Manuals should be made to insure that procedure guidance properly reflects the requirements of both batteries. If significant differences are noted, it may be more appropriate to produce separate procedures for each battery and not retain the present common procedure. Since a Computer Battery technical manual was not available on site, the inspector was unable to perform such a review.

Conclusion

The inspector concluded that the Millstone Unit 2 storage battery procedures were adequate for routine operations, but that the applicable surveillance and maintenance procedures have not incorporated the periodic connection tightness checks contained in applicable technical documentation. NNECO is in the process of correcting these discrepancies.

11.0 NNECO RESPONSIVENESS TO EMPLOYEE CONCERNS

The NRC received approximately 26 concerns regarding the lack of responsiveness by NNECO to employee concerns, particularly from technicians. Specifically, it was asserted that

technicians provided feed back and suggested improvements, but did not receive timely responses from their managers. In response to this particular category of concerns, the system that was established by the Unit 2 I&C Manager to track such employee concerns was inspected to evaluate the validity of these assertions. NNECO's overall program for responding to and resolving employee concerns will be addressed in a broader, more generic manner.

Assessment

The records for 1990 and 1991 of the Unit 2 I&C Department Manager's employee concerns tracking system, titled "Worklist/Memo," were reviewed in an attempt to determine the effectiveness of the system and evaluate the responsiveness of the I&C Manager to employee concerns.

The system is maintained in a computer data base with the I&C Manager's secretary entering the data. There were a total of 114 items documented in 1990 and 62 items in 1991. Thirty-eight percent (38%) of the 1990 items and 24% of the 1991 items were logged as closed, which on the surface appeared to be quite low. However, when the lists were reviewed more thoroughly, many of the items that were listed as open were effectively resolved, but still carried as open items by the I&C Manager awaiting the completion of some administrative or follow-up action. The system was used by the I&C Manager as a way to track actions and not as a feedback system to the individuals submitting the concerns. A monthly printout of the open and closed items is made and interested individuals in the department can check this printout to insure that their concerns have been acted upon. A feedback response to the individual submitting a concern might have eliminated some of the assertions, but would also increase the administrative burden. For such a small department, the monthly printout would appear to be adequate.

Conclusion

The I&C Department has a system to track employee concerns (and has expended a large amount of effort to respond to them), but the individual must take some action to determine the status of their concerns.

12.0 EDG CLEAN WASTE TANK PDCR MP-2-90-035

The NRC provided a concern that a modification to install float switches in the Emergency Diesel Generator (EDG) Clean Waste Tank at Unit 2, per PDCR MP-2-90-035, failed to provide correct as-built drawings and that a blue colored wire was substituted for the yellow colored wire specified in the PDCR, due to non-availability of the yellow colored wire.

Assessment

The drawings that were alleged to be inaccurate, 25203-31165 (Sheet 22), 25203-31175 (Sheet

11), and 25203-32018 (Sheet 10), were obtained from Nuclear Records. The drawings were called up on the Generation Records Information and Tracking System (GRITS) and each drawing in GRITS reflected exactly the same revision as the drawings obtained from Nuclear Records, but all three drawings also indicated an open DCR, titled "M2, P0059-91 (PDCR)," and listed the Engineering Supervisor as the contact person for the change. The inspector proceeded to the engineering office and obtained copies of the three drawings in question. Each drawing contained the modifications associated with the float switch installation. These revised drawings correctly indicated the use of blue colored wire versus the originally specified yellow colored wire.

Conclusion

The updated drawings correctly indicating the modifications associated with the installation of the EDG Clean Waste Tank float switch installation were properly identified in the GRITS and would have been available to maintenance personnel who used the GRITS to verify drawing accuracy prior to initiating work.

13.0 RECORDER CALIBRATION METHODOLOGY

The NRC provided a concern regarding the method for recorder calibration. The concern was that, when calibrating recorders, NNECO did not use a calibrated voltmeter to measure the output of a calibrated voltage source. A related concern was that supervisory review of some completed instrument calibration data sheets may have been inadequate because the listed test instruments did not include in all cases both the calibrated voltmeter and the calibrated voltage source. Specific examples cited were boric acid flow control recorder FR-120Y and process radiation monitor multipoint recorder RJR-9373. NRC disposition of this concern involved providing the concern to NNECO for review and resolution, with subsequent NRC evaluation to ensure the adequacy of NNECO's actions. NNECO letter A09961, dated December 19, 1991, described NNECO's review of this concern.

Background

NRC Inspection Report 50-336/91-20 (IR 91-20), section 5.3, described a previous inspection of boric acid flow control system corrective maintenance. IR 91-20 concluded (in part) that NNECO efforts to identify, troubleshoot, and repair boric acid system equipment deficiencies were appropriate.

NNECO used PORC approved IC procedures and SPs and their associated data sheets as the vehicle to document calibration data and test equipment for safety related I&C components, as described in the station surveillance program (reference ACP-QA-9.02). For non-safety related I&C components, either the applicable AWO or an IC procedure document calibration data and the test equipment used to do I&C maintenance and surveillance.

Examples of non-safety related maintenance and surveillance procedures, that were not required to be done by MP2 Technical Specifications (TS), included IC 2427A and IC 2428B. IC 2427A described the steps to ensure all recorders were periodically calibrated, cleaned, and functionally tested. The data sheets (e.g., I&C Form 2427A-2) associated with IC 2427A gave a monthly list of recorders to be calibrated and required recording of test equipment in each appropriate instrument loop folder. IC 2428B was the procedure for calibration of the boric acid and primary makeup water (PMW) to volume control tank (VCT) systems. IC Form 2428B-1 listed the test equipment used in doing IC 2427B, as "DVM," "Pressure Gauge," and "Transmation" (model 1040).

NNECO also documented certain I&C information on instrument calibration data sheets in I&C Department working files. I&C Instruction 3.02 established standard forms, including Form 3.02-1A, for use by I&C Department personnel. As described in I&C Instruction 1.10, I&C Department Form 3.02-1A recorded calibration data in instrument loop folders for all instruments that were not incorporated with a PORC approved I&C procedure. Form 3.02-1A was a general purpose form to record instrument calibration data, including spaces to record a supervisor's signature and test equipment numbers.

Station Form (SF) 1018 identified the QA records retention and turnover schedule for the MP2 I&C Department. I&C Department Form 3.02-1A was not a QA record, but was included in I&C Department working files as a general reference by I&C Department personnel.

Assessment

The inspector questioned if NNECO used as test equipment any calibrated voltage supplies that were load sensitive. NNECO stated that Transmation model 1040 was the only such device used as plant test equipment at MP2. In Unit 2 I&C Technical Bulletin TIB 89-5, NNECO described the need to monitor, with a QA digital voltmeter, the output of Transmation model 1040 when used as a voltage source. This was because the digital display in the model 1040 did not always represent the actual voltage output since some circuitry was load sensitive at low impedance loads. If the Transmation model 1040 were used as a current source, for example when calibrating flow recorders, there was no need to use a QA digital voltmeter.

An example of this was boric acid flow controller FR-210Y trouble shooting that was done on September 20, 1991, per AWO M2-91-08650 using IC 2428B-1. AWO M2-91-8650 listed the test equipment as digital multimeter (DMM - QA #926) and Transmation (QA #1018). Also, the instrument calibration data sheet in the I&C Department instrument loop folder for FR-210Y contained a list of the same test equipment. Another example was the calibration of FR-210Y done on February 20, 1991, per AWO M2-90-02080 using IC 2427A-2. AWO M2-90-02080 stated the test equipment was "equipment used by instrument folders." The FR-210Y instrument calibration data sheet listed the Transmation test equipment, but did not list the DMM. NNECO stated a DMM was used as necessary to complete IC 2427A; however, NNECO inadvertently omitted documentation of DMM use on the instrument calibration data sheet. Separate files in Nuclear Records and the Metrology Lab contained detailed records regarding the usage and

calibration of test equipment, including DMMs and Transmation model 1040s, as required by ACP-QA-10.04.

The inspector found no I&C Department procedure or other applicable NNECO procedure that promulgated specific administrative instructions for completion of Form 3.02-1A. Because Form 3.02-1A was not used as a QA record, there was no regulatory requirement to provide such an I&C Department procedure.

Conclusions

Based on review of applicable documentation and discussion with cognizant NNECO personnel, the inspector concluded that NNECO had adequate guidance in TIB 89-5 describing the use of a calibrated voltmeter for measuring the output of Transmation model 1040 test equipment. Further, NNECO adequately identified and maintained QA records for I&C maintenance and surveillance work on non-safety related recorders.

There was evidence that NNECO may not have always listed on instrument calibration data sheets DMMs used with Transmation model 1040's, and the supervisory review of such data sheets did not always identify such discrepancies. NNECO promptly corrected specific examples noted during the inspection and initiated action to sample the adequacy of additional instrument calibration data sheets. The inspector concluded that management expectations for maintenance of instrument calibration data sheets in I&C Department working files were not clearly defined in I&C Department Instructions. Because the instrument calibration data sheets were not QA records, and because flow recorders such as FR-210Y and RJR-9373 were not safety related, there was no regulatory requirement to document test equipment usage on instrument calibration data sheets. The inspector had no further concerns regarding this matter.

14.0 SAFETY INJECTION TANK PRESSURE SWITCHES

The NRC provided a concern regarding the adequacy of MP2 safety injection tank (SIT) pressure switches (PSs).

Background

MP2 Technical Specifications (TS), section 3.5.1.d, has a limiting condition for operation that requires SIT cover pressure of between 200 and 250 psig when in modes 1 or 2, and when in mode 3 if pressurizer pressure is equal to or greater than 1750 psia. NNECO ensures SIT cover pressure is between 200 and 250 psig at least once every 12 hours using OPS Form 2619A-1. High pressure and low pressure switches are set to alarm in the control room prior to exceeding the MP2 TS allowable range. Operating procedure OP 2306 is used to make adjustments in SIT cover pressure. SITs are initially pressurized to approximately 215 psig prior to plant startup.

A desirable operating practice was to have no control room annunciators illuminated during steady state full power operation. Control room panel C-01 annunciator windows C-10, C-11,

C-12, and C-13 were for SIT high pressure alarms. NNECO indicated in AWO M2-91-04556, dated September 11, 1991, that previous SIT high pressure alarm trouble reports (TRs) related to alarm "lock in" were too frequent, and may have been caused by a wide deadband on the PSs associated with these alarms. Operations believed an additional factor was the pressure increase caused by the SITs normally warming from ambient temperature to approximately 110°F during plant startup. NNECO initiated AWO M2-91-04556 to establish, if possible, a reliable method of adjustment for SIT high pressure alarm pressure switches (PSs) 313, 323, 333, and 343. These PSs were Custom Component Switches, Inc. (CCS) model 604GR3-353S.

NNECO determined in evaluation MP2-CD-674 that only the pressure boundary of PSs 313, 323, 333, and 343 was safety related. Failure of these pressure switches during a seismic event could vent the associated SIT and prevent the affected SIT from performing its safety related function of supplying borated water to the reactor coolant system. The PS alarm function was not safety related. SIT pressure indication was available on Control Room instrumentation and on the MP2 process computer.

NNECO initiated PDCR 2-090-91 to replace the SIT CCS model 604GR3-353S pressure switches with CCS model 5NN-K5-U9-C1A-PCPB pressure switches. The new switches had a nominal 5 psig deadband that NNECO believed would avoid "lock in" alarms during plant operation.

Assessment

According to documentation associated with AWO M2-91-04556, CCS model 604GR3-353S pressure switches had an adjustment range of 60 to 225 psig (increasing) and 45 to 210 psig (decreasing). Because the SIT high pressure Pss setpoint and reset values were in excess of the switch nameplate rating, the inspector questioned if the CCS model 604GR3-353S PSs were adequate for their intended purpose. NNECO compared switch nameplate data with procurement documents and found differences in the switch adjustment range. For example, the switch nameplate listed an increasing adjustment range of 60 to 225 psig, but drawing 25203-29115, sheet 37. indicated the adjustment range on increasing pressure was 50 to 250 psig. NNECO stated that the nameplate adjustment range information was incorrect. Because these switches will be replaced per PDCR 2-090-91 and the switches were not readily accessible during plant operation, NNECO stated there was no need to correct the switch nameplate.

CCS vendor manual VTM2-167-002A was a maintenance and parts replacement manual for standard commercial switch models 604 and 605GC. According to the equipment list for VTM2-167-002A, it applied to PSs 313, 323, 333, and 343.

The inspector questioned if CCS model 604GR3-353S pressure switches were adequate for their current application. NNECO stated that these devices were adequate because they were appropriately mounted on seismically qualified supports and Nonconformance Report 291-225 concluded these devices were acceptable for use-as-is. Also, the pressure retaining parts of these pressure switches had a proof pressure rating of 4500 psig, but the normal operating pressure

was less than 250 psig.

The control room annunciator response book (CRAB) and OP 2306 used a value of 250 psig for the SIT high pressure alarm, but the actual setpoint was 245 psig (increasing). ACP-QA-3.02A, section 6.8.3, stated that "if actions are required based on receipt of an annunciated alarm, then list the setpoint of the alarm for ease of verification." Also, ACP-QA-3.02A, section 6.8.4, stated to "provide an acceptable range instead of a point value, when applicable." Calibration data indicated PS reset occurred in the range of 227 to 236 psig. When questioned by the inspector, NNECO stated that in some cases procedures also used MP2 TS limits rather than actual setpoints for values described in the CRAB, OPs, and SPs.

Conclusions

Based on review of applicable documentation and discussion with cognizant NNECO personnel, the inspector concluded the CCS model 604GR3-353S PSs were adequate for application as SIT high pressure alarm switches. Also, the inspector concluded that, unless workers thoroughly researched relevant information, inaccurate nameplate data could cause worker confusion regarding the adequacy of CCS model 604GR3-353S PSs.

Finally, the inspector concluded that NNECO may not have adequately described in all cases alarm setpoints in the CRAB, Ops, and SPs, as required by ACP-QA-3.02A. NNECO agreed to evaluate this matter, take appropriate action as necessary, and respond back to the NRC.

15.0 WORK CONTROL CENTER

The NRC provided various concerns related to the Work Control Center (WCC). The concerns were generally on the subjects of safety tags, work orders, and administration of the WCC. Thirty two (32) concerns were associated with tagging and 41 were associated with other WCC issues. Previous NRC actions in response to these concerns included inspection of specific issues that may have had some potential safety significance and referral to NNECO with subsequent NRC evaluation.

Background

The NRC documented in inspection reports its review of previous employee concerns and other issues related to the WCC. For example, Inspection Report 50-336/91-04 identified (open) unresolved item (UNR) 50-336/91-04-02 as post maintenance control of safety related equipment. Future NRC inspection of this item will include verification of licensee corrective actions to strengthen control of post maintenance activities. Another example was (open) UNR 50-336/91-28-01 in Inspection Report 50-336/91-28 (IR 91-28). Future NRC inspection will assess the adequacy of the equipment tag-out restoration process.

IR 91-28 addressed (open) UNR 50-336/91-04-02. As described in IR 91-28, section 4.2.1, PMMS field entry controls in the WCC appeared to be informal and there was no specific procedural guidance to prescribe WCC activities.

Assessment

The WCC at MP2 is located in an office adjacent to the Shift Supervisor office at the main control room. Using seven operating crews in a six shift rotation, NNECO established a schedule that has one crew serve as the WCC staff for seven consecutive weeks. The WCC primarily operates during the day shift on weekdays, but also operates at other times (e.g., during outages) as necessary. Thus, the WCC has a highly qualified staff available to support on duty operating crews during peak work periods.

A major WCC function is to eliminate unnecessary distraction of the on duty operating crews. During peak periods, the WCC effectively serves as the primary point of contact between work crews and plant operators. Personnel could discuss work activities such as safety tag clearance and job authorization in an area away from the main control boards. Also, because of the reduced administrative burden allowed by the WCC, Shift Supervisors (SSs) and Supervising Control Operators (SCOs) have more time to focus on important operational activities.

WCC personnel have the qualification and authority to accomplish their responsibilities for processing work orders and station tags, as defined in ACP-QA-2.02C and ACP-QA-2.06A, respectively. The Operations Work Coordinator (OWC) is a qualified SCO with an active Senior Reactor Operator (SRO) license. To ensure the on duty SS and SCO are aware of WCC actions and changing conditions, there was close coordination between the OWC and the on duty SCO as well as other WCC and operations personnel.

NNECO recognized the need for administrative instructions for WCC activities. As an interim measure, January 15, 1992, the WCC SS issued a memorandum to all department heads that defined WCC expectations and proposed standard guidance for WCC activities.

To help reduce the potential for tagging errors and facilitate the tagging process, NNECO is developing the Millstone Automated Tagging System (MATS). This was a computer based information system with various capabilities that includes identifying standard clearance tag lists and printing information for safety tags.

WCC personnel conduct their activities in a thorough and diligent manner. Communication among WCC personnel is generally informal, but adequate. WCC coordination with work group supervisors and support for job leaders appear to be highly responsive. WCC liaison with on duty operations personnel is very effective. The inspector found no instance in which WCC personnel failed to adequately execute their responsibilities, as defined in applicable ACPs.

Conclusions

Based on discussion with cognizant NNECO operations, maintenance and I&C personnel, observation of WCC activities, and review of relevant documentation, the inspector concluded that MP2 WCC helps reduce SS and SCO administrative burdens during peak work periods and supported work group needs. This is considered a management strength. Further, if effectively implemented, NNECO efforts to standardize WCC activities through written instructions and to implement innovative programs such as MAPS would result in an excellent enhancement of MP2 work control activities.

16.0 NONCONFORMANCE REPORT 291-272

The NRC provided a concern related to a 10 vdc reference power supply in the reactor protection system (RPS) core protection calculator (CPC). The concern was that this power supply may have been modified, without appropriate design controls, by drilling an access hole in the plastic case that covered a circuit board. NRC disposition of that concern involved providing the concern to NNECO for review and resolution, with subsequent NRC evaluation to ensure the adequacy of NNECO's actions. NNECO letter AO9962, dated December 19, 1991, described NNECO's review of this concern.

Assessment

NNECO inspected all similar CPC power supply modules, as described in AO9962. Since the access hole for the affected power supply module did not appear on the manufacturer's product drawing, NNECO suspected this modification was made after original installation. Accordingly, NNECO initiated Nonconformance Report (NCR) 291-272 as required by ACP-QA-1.20 and ACP-QA-5.01. Because the hole did not degrade the function of the plastic case, which was circuit board support, NNECO determined that the affected power supply modules were acceptable for use-as-is.

The inspector questioned if this was an isolated instance or if there were other similar examples of modifications made without adequate design change controls. NNECO stated it was not aware of any similar modification of other power supply modules that did not have the requisite documentation. Because this was an apparently isolated incident with no significant impact on plant safety, there was no requirement to initiate either a Plant Incident Report (PIR) per ACP-QA-10.01 or a Corrective Action Request (CAR) per ACP-QA-10.10.

Conclusions

Based on review of applicable documentation and discussion with cognizant NNECO personnel, the inspector concluded that NNECO adequately resolved this matter in NCR 291-272.

17.0 SUPPLEMENTARY INFORMATION ON PRIOR INSPECTION ISSUES

The following are either clarifications or additional documentation regarding issues the NRC described in previous inspection reports.

17.1 Drawing Control

Employees found it convenient to use drawings located within vendor technical manuals, but expressed concerns that drawings within vendor technical manuals were not up-to-date. Vendor drawings typically depicted standard equipment designs and were not necessarily the exact configuration installed at MP2. The licensee was committed to maintenance of vendor drawings and incorporating them, as necessary, with the NUSCO controlled drawing system. Licensee I&C Department management stated it was considering an enhancement of current NNECO practices such that vendor manuals would include appropriate references to NUSCO drawing numbers.

Inspection Report (IR) 50-336/91-27, section 7.1, documented the findings of a review made of the drawing control system and its use during activities at the station. The report incorrectly stated that there were no administrative control procedure requirements to verify the latest drawing information prior to the use of a drawing for quality work. This was an error.

Administrative Control Procedure ACP-QA-3.03, Document Control, Revision 33 in section 6.2, Design Document Control, requires that persons using drawings for quality work activities are responsible for verifying they have the latest revision of a drawing by referencing the Drawing Status File within the Generation Records Information Tracking System.

This information does not change the report conclusion that some personnel were not using the drawing control system when required, but it does correct the finding of a deficiency within the system of administrative controls.

17.2 Tool and Document Contamination During AWO M2-91-06732

The NRC provided a concern related to contamination of tools and a procedure package while doing AWO M2-91-06732 in July 1991, and the NRC promptly inspected the concern.

Background

NRC Inspection Report 50-336/91-18 (IR91-18), section 4.0, documented the NRC review of various radiological control issues related to posting and control of radiological areas, radiation monitor RM-8132, and a spent fuel pool area frisker. In part, that report found that "posting of contaminated, high airborne radiation and high radiation areas was observed to be appropriate with respect to boundary identification, locking requirements, and hold points." The following NRC assessment of the employee concern related to AWO M2-91-06732 was done in July 1991,

but was not specifically described in IR91-18.

Assessment

Two work activities in the vicinity of stack gas radiation monitor RM-8132B took place during the period of July 2 - 3, 1991. One activity was calibration of RM-8132B using surveillance procedure SP 2404AF. The other activity was replacement of the RM-8132B sample fan assembly blower and drive belt per AWO M2-06732. The concern was that work done per AWO M2-06732, which had no radiation work permit (RWP) requirements, may have caused contamination of an I&C technician's tools and documentation for the SP 2404AF work package.

MP2 health physics (HP) was involved with the issue when the I&C technician exited the work area on the morning of July 3, 1991. In addition to contamination found on the papers and tools, HP surveys found 15K dpm in the work area. Access to the work area was then controlled as a contaminated area. Other floor areas accessible to personnel were clean. There was no contamination of personnel. HP review of the maintenance work activity identified no contamination in the fan removed on July 3, 1991, or in the maintenance shop. NNECO assigned decontamination personnel to clean the affected area.

HP concluded the maintenance work did not cause the contamination and that there were acceptable radiological work controls. HP did identify leakage from a ventilation housing near the job site as the source of the contamination. NNECO took action to contain any further leakage from the ventilation housing and to continue decontamination of the area.

On July 4, 1991, the inspector reviewed HP survey sheets and observed the job site. The inspector found that NNECO removed most of the contamination and that NNECO had appropriate barricades and postings to control access to the area.

Conclusion

Based on review of HP records and physical inspection of the work area, the inspector concluded NNECO adequately responded to the contamination event. The inspector had no further questions on the adequacy of work controls.

17.3 ASI Curve for LHGR

As described in NRC Inspection Report 50-336/89-08, section 5.4, on May 1, 1989, the licensee found that the incore analysis (INCA) program produced unexplained results during power ascension testing. For example, a coefficient error resulted in the INCA program being unable to precisely measure LHGR over the full length of the core. The licensee resolved this matter and declared the INCA system operable on May 6, 1989. The NRC evaluated licensee actions and found no inadequacies.

On May 5, 1989, the NRC received an employee concern asserting the LHGR check using the curve for axial shape index (ASI) was inadequate because the excore detectors were not calibrated against the incore detectors at equilibrium xenon conditions. As described in NRC Inspection Report 50-336/89-11, section 11.1, the NRC did a follow-up inspection of this and other related matters, and concluded the following: "In summary, no safety inadequacy was found in the operations performed while an INCA program problem existed, in the 'A' RPS channel input being bypassed to the high power averaging circuitry, or in the incore/excore measurements taken before equilibrium xenon was reached."

NRC Inspection Report 50-336/89-13, section 2.2 (A.6.15, A.7.2, A.12.1, 2, and 3), described additional NRC follow-up inspection and evaluation of employee concerns related to the INCA program and licensee observance of LHGRs. The NRC concluded there were no safety concerns. Also, the licensee "recognized the INCA program problem and acted in a conservative manner while the problem existed." Based on this previous inspection effort, this concern is considered resolved.

17.4 Steam Generator Level Calibration Procedure SP 2402D

The NRC received a concern in September 1989 related to the adequacy of steam generator level calibration surveillance procedure SP 2402D. The concern was that SP 2402D could not be done as written, but was previously completed in 1989. The NRC referred this issue to NNECO for resolution, as documented in NRC Inspection Report 50-336/89-23, Appendix A, item number A.25.02.

Assessment

NNECO stated that during a training class for I&C personnel in 1989, it identified two typographical errors in SP 2402D, section 7.7, associated with the Auxiliary Feedwater (AFW) automatic AFW initiation system test. Steps 7.7.33 and 7.7.34 of the procedure referred to test pin "13/24," but the correct reference was 13/23. In addition, some hand switch nomenclature differences were noted.

NNECO completed SP 2402D on April 18, 1989, per AWO M2-88-02316. The procedure in effect at that time was SP 2402D, revision 9, change 2, dated March 8, 1989. NNECO issued SP 2402D, revision 9, changes 3 and 4 on August 23, 1989, and September 19, 1990, respectively. Changes 3 and 4 corrected the typographical errors, added a new step to avoid transmitter alignment problems at system pressure, and replaced hand switch numerical designations with noun names.

The inspector reviewed SP 2402D, revision 9, changes 1 through 5, and AWO M2-88-02316. As documented on I&C Form 2402D-1, revision 8, test results in steps 7.7.36, 7.7.37, and 7.7.38 met acceptance criteria. Those steps could not meet acceptance criteria unless preceding steps 7.7.33 and 7.7.34 were done in a technically correct manner.

ACP-QA-3.02E, section 6.2, stated that "full and total compliance is expected" for those procedures used to do surveillance and testing as specified in the MP2 TS. SP 2402D was used to meet several MP2 TS surveillance requirements.

Conclusions

Based on review of applicable documentation and discussion with cognizant NNECO personnel, the inspector concluded NNECO satisfactorily completed SP 2402D per AWO M2-88-02316, but attention to detail in procedural compliance may not have been adequate in all respects. The hand switch nomenclature differences and typographical errors described in changes 3 and 4 could have been identified and corrected prior to completion of SP 2402D in April 1989. Because test results met acceptance criteria, the inspector concluded the above discrepancies were not functionally significant and did not compromise nuclear safety.

17.5 Rigging Practices for Two Ton Hoist

The NRC provided a concern regarding two ton hoist rigging practices used for MP2 polar crane modification during the 1990 refueling outage. The concern asserted that there were electrical cables over the crane cable, there was interference between the crane cable and a guard rail, and there were sharp bends on the whip line when attached to load. The NRC promptly referred this issue to the Millstone Safety Office for resolution.

The NUSCO Safety Office stated that it promptly inspected this issue and took action to resolve relevant concerns. Further, there were currently no similar unresolved industrial safety issues. The inspector had no further concerns.

18.0 MANAGEMENT MEETINGS

On February 7, 1992, an exit interview was conducted with NNECO's senior site representatives to summarize the observations and conclusions of this inspection. NNECO did not indicate this inspection involved any proprietary information.

ATTACHMENT 1

PERSONS CONTACTED

NORTHEAST NUCLEAR ENERGY COMPANY

Mr. Jack Amatucci, MP2 I&C Engineer
Mr. Richard Armour, Senior Control Operator, MP2 Operations
Mr. Terry Arnett, MP2 I&C
Mr. Ralph Bates, MP2 Engineering Supervisor
Mr. John Becker, MP2 I&C Manager
Mr. Edward Bireley, Unit Services
Mr. Thomas Blanchard, MP2 Engineering
Mr. Steven K. Brinkman, MP2 Operations
Mr. David Clark, MP2 Operations
Mr. David L. Coleman, Mechanical Engineering
Mr. Bruce Danielson, Nuclear Training
Mr. Thomas Dembek, Emergency Planning
Mr. Keith D. Deslandes, MP2 engineering
Mr. John F. Follett, NUSCO Safety
Mr. Richard Goldsmith, Nuclear Training
Mr. Mark Heinonen, MP2 Maintenance General Supervisor
Mr. John Kiss, Nuclear Training
Mr. Steve Main, Nuclear Records Supervisor
Mr. Thomas W. McCance, Emergency Planning
Mr. Michael Mullin, MP2 Shift Supervisor
Mr. Stephen Myers, Shift Supervisor, MP2 Operations
Mr. Charles Nelson, MP2 Operations
Mr. John W. Riley, MP2 Engineering Manager
Mr. Robert F. Rowe, MP2 Maintenance Supervisor
Mr. William R. Salen, MP2 I&C
Mr. Raymond Schleicher, MP2 I&C General Supervisor
Mr. Jeffrey Smith, MP2 Operations Manager
Mr. Peter Smith, MP2 I&C Supervisor

The inspectors also contacted additional administrative, operations and technical personnel during the inspection.

ATTACHMENT 2

REFERENCES

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