U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 87-03/87-09

Docket No. 50-220/50-410

License No. DPR-63/NPF-54 Category B

Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Facility: Nine Mile Point, Units 1 and 2

Location: Scriba, New York

Dates: March 2, 1987 to April 19, 1987

Inspectors: W.H. Bateman, Senior Resident Inspector, Oyster Creek
W.A. Cook, Senior Resident Inspector
D.J. Lange, Reactor Engineer (Examiner)
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Approved by: Jon R. Johnson 5/21/87
J.R. Johnson, Chief, Reactor Projects Section 2C, DRP — Date

INSPECTION SUMMARY

Areas Inspected: Routine inspection by resident and region based inspectors of station activities (including Unit 1 power operations and Unit 2 preparations for initial criticality), licensee action on previously identified items, plant tours, maintenance, safety system walkdowns, LER review, Unit 2 MSIV replacement, allegation followup, Unit 1 Training Program review, and Part 21 reviews. This inspection involved 420 hours by the inspectors.

Results: A Unit 1 scram isolation valve diaphragm failure (third since September 8, 1986) occurred and is discussed in section 1.1. Unit 2 MSIV replacement activities are discussed in sections 1.2 and 8. A Unit 2 Inspector Followup Item concerning EDG operability verification is discussed in section 5.2.a. Licensee 10CFR21 reporting deficiencies are discussed in section 6.2.d. Minor weaknesses identified in the Unit 1 licensed operator training program are discussed in section 10.c.

DETAILS

1. Review of Plant Events

1.1 UNIT 1

a. The plant operated at full power throughout the inspection period.

b. On April 1, 1987, an operator making rounds observed air blowing from the scram inlet valve actuator for Control Rod Drive (CRD) 30-39. Neither the scram inlet nor outlet valve for CRD 30-39 had opened. The control rod was inserted by normal means without incident and the diaphragm replaced. Following stroke time testing of the scram inlet valve, the CRD was returned to service.

The licensee noted that this was the third diaphragm that had ruptured since September 8, 1986, and that in all three cases the ruptured diaphragms had been installed in 1974. Although approximately half of the diaphragms still in service are original equipment, dating back to 1969, none of the older diaphragms have ruptured. Subsequent to replacing the diaphragm on April 1, 1987, the licensee decided to replace the scram valve diaphragms for four control rods which were fully inserted. Two replacement diaphragms were found to be leaking air from between the rubber laminations along the circumference of the diaphragms. The licensee determined that the leakage was not enough to prevent normal operation of the scram valves and the CRDs were returned to service. However, the licensee was awaiting an engineering evaluation which was expected to permit tightening the actuator cover to stop air leakage prior to replacing additional diaphragms. The licensee was concerned that a large number of leaking diaphragms will cause a reduction in instrument air header pressure. The inspectors will monitor licensee resolution of this problem.

1.2 UNIT 2

a. During the first few weeks of this inspection period, the licensee was conducting prototype Main Steam Isolation Valve (MSIV) testing at the vendor's facilities. Several different types of packing material and configurations were tested, however, the prototype valve continued to exhibit excessive leakage through the packing area. On March 11, 1987, the licensee decided to change out the ball-type MSIVs with standard Rockwell wye pattern globe valves and met with the NRC Regional Administrator and Headquarters Representatives to discuss their plans for MSIV replacement.

The resident inspectors were briefed by the MSIV replacement project coordinator prior to the commencement of work and periodically during this inspection period. The project staff

appeared to be adequately manned and well coordinated. The eight ball valves were removed and pipe end preparation work was in progress by March 15, 1987. During the first few days of MSIV replacement work, management and quality control oversight in the field appeared to be minimal. This observation was discussed with licensee management and a noticeable increase in supervisory and QC oversight was observed during the remainder of the inspection period.

The inspectors attended Station Operations Review Committee (SORC) meetings during the weeks of March 16 and March 23, 1987, to monitor the SORC's review of the MSIV replacement modification packages. The inspectors observed that the SORC was thorough and conservative in their reviews of the individual modification packages. Their scrutiny was particularly important, in that the modification packages presented to the SORC for final review and approval appeared to have been hastily prepared and, on one occasion, not clearly understood or presented to the SORC members by the responsible engineering staff. The inspectors will continue to monitor SORC modification package reviews in future inspections.

A detailed review of the the replacement work activities was conducted the week of March 23, 1987, by a specialist inspector (see Section 7).

The licensee continues to target initial criticality between the middle of May and early June 1987. The welding of the eight valves was essentially completed the week of April 13 and preliminary valve leak rate testing started April 16.

b. On March 2 and April 1, 1987, the Division I Emergency Diesel Generator (EDG) failed to come up to speed within the required ten seconds during monthly surveillance testing. The March 2 failure was attributed to a fuel oil leak which was suspected to have caused the fuel line to partially fill with air. After the leak was repaired, retests were conducted satisfactorily. After the April 1 failure, the licensee performed additional testing on the fuel control system. This failure was attributed to a sticky ball-check valve (V-10) in the fuel system control air header. Disassembly of the ball check valve identified fouling of the valve internals by a sealant material used to seal the air line fittings. Subsequent surveillance tests of the Division I EDG were performed satisfactorily. The inspectors will review the licensee's investigation of the cause of the check valve fouling in a subsequent inspection period.

No violations were identified.

2. Followup on Previous Identified Items

2.1 Unit 1

a. (Closed) UNRESOLVED ITEM (50-220/77-04-04): Review of snubber functional testing. The inspector reviewed Amendment No. 74 to Facility Operating License No. DPR-63 for Nine Mile Point Nuclear Station, Unit 1, dated September 23, 1985, in which surveillance requirements for hydraulic and mechanical snubbers were added to Technical Specifications. The inspector verified that snubber testing was performed as required by Technical Specification 4.6.4.b(ii). No unacceptable practices were noted. This item is closed.

b. (Closed) UNRESOLVED ITEM (50-220/78-11-05): Verify and review proposed amendment to Technical Specification 3.3.2.b. The inspector reviewed Amendment No. 75 to Facility Operating License No. DPR-63 for Nine Mile Point Nuclear Station, Unit 1, dated January 7, 1986. The amendment revised this Technical Specification to: (1) add the requirement for maintaining the suppression pool temperature within specified limits; and, (2) delete the requirement to maintain a drywell to suppression chamber differential pressure. This item is closed.

c. (Closed) INSPECTOR FOLLOWUP ITEM (50-220/79-06-03): Review update of Technical Specification snubber list. The inspector reviewed Amendment No. 74 to Facility Operating License No. DPR-63 for Nine Mile Point Nuclear Station, Unit 1, dated September 23, 1985. In part, this amendment deleted the list of snubbers from Technical Specifications as provided in NRC Generic Letter 84-13. This item is closed.

d. (Closed) INSPECTOR FOLLOWUP ITEM (50-220/81-01-01): Review of licensee control of Information Tags. The inspector reviewed Standing Order 32, "Control of Operator Aids" and procedure N1-PM-Q3, "Quarterly Audit of Operator Aids". These procedures require formal approval before an information tag is issued and quarterly review of all outstanding tags. The inspector determined implementation of this program was satisfactory. This item is closed.

e. (Closed) OTHER (50-220/82-LO-09): Review of Recirculation System piping leaks. Leaking recirculation system piping was replaced during the Recirculation Piping Outage of 1982-1983. This item is closed.

f. (Closed) OPERATIONS QUALITY ASSURANCE (50-220/82-01-03): Review of drywell to torus differential pressure instrumentation. Amendment No. 76 to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit 1, deletes the Technical Specification requirement to maintain a drywell to suppression chamber differential pressure. This item is closed.

g. (Closed) UNRESOLVED ITEM (50-220/82-17-01): Review of operator requalification program. This item was reviewed in Combined Inspection Report 50-220/85-20 and 50-410/85-37 with no discrepancies noted. Also, see section 9 of this report. This item is closed.

h. (Closed) UNRESOLVED ITEM (50-220/82-17-02): Review of operator requalification program. This item was reviewed in Combined Inspection Report 50-220/85-20 and 50-410/85-37 with no discrepancies noted. Also, see section 9 of this report. This item is closed.

2.2 Unit 2

a. (Closed) CONSTRUCTION DEFICIENCY REPORT (50-410/86-00-18): This report pertained to the ball-type MSIVs which are no longer installed at Unit 2. This item is closed.

b. (Closed) CONSTRUCTION DEFICIENCY REPORT (50-410/86-00-19): This report pertained to the ball-type MSIVs which are no longer installed at Unit 2. This item is closed.

c. (Closed) CONSTRUCTION DEFICIENCY REPORT (50-410/86-00-20): This report pertained to the ball-type MSIVs which are no longer installed at Unit 2. This item is closed.

3. Plant Inspection Tours

During this reporting period, the inspectors made tours of the Unit 1 and 2 control rooms and accessible plant areas to monitor station activities and to make an independent assessment of equipment status, radiological conditions, safety and adherence to regulatory requirements. The following were observed:

3.1 Unit 1

a. During this reporting period, the inspectors conducted several unannounced inspections of the Unit 1 control room during backshifts. In all cases, operators were found to be alert and attentive. Operators were, in some instances, reviewing training material in preparation for the annual requalification exam which was conducted during the week of March 30 to April 3, 1987.

b. On March 11, 1987, Emergency Diesel Generator (EDG) 103 failed a monthly surveillance test when it tripped on low lube oil pressure. The licensee determined that the crankcase pressure sensor had tripped and caused the low lube oil pressure condition. Operators reset the crankcase pressure switch and ran

the monthly surveillance test without incident. Licensee management called in the diesel technical representative, since this was the third incident of this type in a nine month period. A modification was made to install a baffle plate to prevent oil from splashing on the diaphragm of the crankcase pressure switch when the attached lube oil pump was started. Subsequent EDG 103 starts have been satisfactory.

During followup of the March 11 event, the inspector discovered that no operator log entry was made for the diesel surveillance test failure which occurred on January 2, 1987. Discussions with the Station Shift Supervisor (SSS) for that shift revealed that the failure to make a log entry for this event, as required by Administrative Procedure (AP) 4.0, "Administration of Operations", was an oversight. The SSS indicated that by the time he made a log entry indicating that the EDG testing had been completed, the second surveillance test was completed satisfactorily. In addition, the SSS notified site management and the NRC resident inspector that the diesel had failed the first surveillance test and wrote a station Work Request which resulted in replacement of the crankcase pressure switch. The SSS believed that he had fulfilled his reporting obligations by making the appropriate notifications and writing the Work Request. The inspector discussed this event with the Operations Superintendent who indicated that he has been making efforts to improve operator logkeeping for the past two years. The inspector noted that his efforts have resulted in gradual improvement, and although some SSS logs contain an appropriate level of detail, others need substantial improvement.

c. On March 31, 1987, a Quality Control (QC) inspector opened the Reactor Building door to the Reactor Building secondary containment airlock while the resident inspector was passing through the open Turbine Building door to the airlock. The QC inspector stated that he had seen a green light indicating that the Turbine Building door was closed prior to opening the Reactor Building door. The QC inspector also stated that the lights cannot easily be seen at either door when pushing the crash bar on the Reactor Building side of each door. The NRC inspector similarly concluded that the lights are difficult to see when using the crash bar to come out of the Reactor Building. This event was brought to the attention of the Station Superintendent and he initiated a problem report describing the incident and recommending that the airlock lights be replaced with lights which have an audible alarm, so that it will not be necessary to depend exclusively on the lights. The inspectors will follow resolution of this problem.

3.2 Unit 2

a. The inspectors made frequent tours of the Unit 2 control room including several unannounced backshift walk-throughs. During the backshift tours, all operators were found to be alert and attentive. Control room activities have increased this inspection period, particularly with respect to the modification activities involving the MSIV replacement. Significant modifications have been made to the control panels to accommodate the new MSIV control circuits, indicators and switches.

b. The quality of the Lessons Learned Book has improved since the last inspection period. Training signoff sheets have been incorporated to ensure that the book is reviewed and the review documented, and more meaningful and useful entries have been made to the book. Operator usage of the Lessons Learned Book will continue to be monitored in subsequent inspection periods.

c. While reading the Operations Superintendent's Night Notes, on April 7, 1987, the inspector found a memorandum generated by site engineering staff discussing the torquing of valve packing. The memorandum stated that torquing of the packing on a safety related valve was only needed at the time of valve maintenance and that subsequent adjustments may be performed, as necessary. As stated in the memorandum, the retest required after a packing adjustment was only a stroke time test per Technical Specifications (TS) surveillance requirement 4.6.3.1. The inspector determined that this TS surveillance requirement pertains only to primary containment isolation valves. Further review by the inspector determined that a different surveillance requirement applies when adjusting packing on reactor coolant system pressure isolation valves (TS section 4.4.3.2.2.). The section 4.4.3.2.2 surveillance requires that a leak test, as specified in ASME Section XI, paragraph IWV-3427(b), be performed after valve maintenance. The inspector also noted that ASME Section XI, paragraph IWV-3200, defines adjustment of packing as maintenance that could affect valve performance parameters. The Unit 2 Inservice Testing (IST) Plan for Pumps and Valves, section 3.2.2.2, contains wording similar to the ASME Code, with respect to packing adjustment being considered maintenance. IST Plan section 3.2.2.2 is prefaced by a paragraph which states that, after valve maintenance has been performed, a determination must be made as to parameters affected by the maintenance and required retests.

The inspector discussed this memorandum and applicable sections of TS and the IST Plan with the Assistant Operations Superintendent and the Station Superintendent. The Station Superintendent stated that the memorandum would be clarified and

that a Work Request would be written prior to any packing adjustments to safety-related valves in order to properly document the maintenance and to assure the proper retest is performed.

No violations were identified.

4. Maintenance Review

The inspector observed portions of various safety-related maintenance activities to determine that redundant components were operable, that these activities did not violate the limiting conditions for operation, that required administrative approvals and tagouts were obtained prior to initiating the work, that approved procedures were used or the activity was within the "skills of the trade", that appropriate radiological controls were implemented, that ignition/fire prevention controls were properly implemented, and that equipment was properly tested prior to returning it to service.

During this inspection period, the following Unit 1 maintenance activities were observed:

-- WR 111576, Substitution of Local Power Range Monitor (LPRM) 28-41C for 36-41C and LPRM 36-33C for 28-33C in Average Power Range Monitor Channel 11.

-- WR 100217, Inspection and Overhaul of Control Rod Drive Pump No. 12.

-- WR 106185, Inspection and Repair of 103 Emergency Diesel Generator Fuel Oil System.

No unacceptable practices were noted.

5. Safety System Operability Verification

On a sample basis, the inspectors directly examined selected safety system trains to verify that the systems were properly aligned in the standby mode. The following systems were examined:

5.1 Unit 1

- Standby Liquid Injection System
- Emergency Ventilation System
- Emergency Condenser System
- Emergency Diesel Generators

5.2 Unit 2

- Residual Heat Removal System (all trains)
- Emergency Diesel Generators
- Automatic Depressurization System

a. To verify Division II Emergency Diesel Generator (EDG) standby readiness, the inspector used Section F.1.0, "Shift Checks", of Diesel Generator Operating Procedure N2-OP-100A. The following discrepancies were noted:

-- The "Auto" light for the standby fuel oil pump was not lit, although the pump selection switch was in the "Auto" position. The light bulb was determined to be burned out.

-- Air start pressures on the diesel control panel indicated below the required limit of 240 - 250 psig. A check of the local pressure indication showed that both air header pressures were within the required range. One of the local pressure gauges was missing its calibration sticker.

-- The fuel oil system duplex strainer and filter have differential pressure gages installed to monitor for filter clogging. Each gage face has instructions taped to it to alert the operator to change to the standby strainer at a specified differential pressure. These instructions were not controled via the licensee Operator Aid Tag instructions.

In addition, the inspector reviewed the EDG vendor technical manual and determined that the vendor recommends that logs be taken on several parameters during engine operation to trend overall engine performance. The licensee's current EDG operating procedures do not require that operating logs be maintained. In addition, the procedures do not provide the operators with any specific parameters to monitor or any normal range of readings.

These observations were discussed with the SSS on watch and the Assistant Operations Superintendent. Licensee resolution of these items will be reviewed in a subsequent report. INSPECTOR FOLLOWUP ITEM (50-410/87-09-01)

6. Review of Licensee Event Reports (LERs)

The LERs submitted to the NRC were reviewed to determine whether the details were clearly reported, the cause(s) properly identified and the corrective actions appropriate. The inspectors also determined whether the assessment of potential safety consequences had been properly evaluated, whether generic implications were indicated, whether the event warranted on site follow-up, whether the reporting requirements of 10CFR50.72 were applicable, and whether the requirements of 10CFR50.73 had been properly met. (Note: the dates indicated are the event dates)

6.1 Unit 1

a. The following LERs were reviewed and found to be satisfactory:

-- LER 87-02, 01/26/87, Agastat Relay Seating Deficiency and Potential Failure.

-- LER 87-04, 02/10/87, Failure to Perform Surveillance Testing Within Required Interval.

b. The following LER was reviewed and found to be satisfactory, however, the identified corrective actions will be monitored and reviewed in a subsequent report:

-- LER 86-33, 11/21/86, Reactor Building Closed Loop Cooling Heat Exchanger not declared inoperable after failing ISI Hydrostatic Test.

6.2 Unit 2

a. The following LERs were reviewed and found to be satisfactory:

-- LER 87-02, 1/9/87, Automatic initiation of Standby Gas Treatment System.

-- LER 87-03, 1/16/87, Isolation of normal Reactor Building Ventilation and Automatic Initiation of Reactor Building Emergency Recirculation Unit.

-- LER 87-07, 2/2/87, Automatic Initiation of Standby Gas Treatment System due to bumping of a relay.

-- LER 87-13, 2/9/87, Momentary loss of Class 1E 600V bus.

b. The following LERs were reviewed and found to be satisfactory, however, the identified corrective actions will be monitored and reviewed in a subsequent report:

-- LER 87-06, 2/2/87, MSIV closure due to surveillance testing.

-- LER 87-12, 2/8/87, MSIV closure due to surveillance testing.

c. For the following LER, the licensee has committed to issue a supplemental report, this report will be reviewed in a subsequent inspection period:

-- LER 87-11, 2/7/87, Reactor scram due to bumping of flexible tubing in instrument piping.

d. The following LERs, were found to be satisfactory in content, however, each report identifies an event which was not properly reported in accordance with the requirements of 10CFR21 and 10CFR50.72:

-- LER 86-26, 12/29/86, Conduit seals in noncompliance with internal flood criteria. For this event, the discrepancy was first identified on December 29, 1986, and the licensee began the process for evaluation for reportability under 10CFR21. The initial verbal notification required by 10CFR21 was made on January 23, 1987, and another verbal report per 10CFR50.72 was made via ENS on January 26, 1987. Written notification per 10CFR21 requirements was not made until February 2, 1987, ten days after the initial verbal notification, vice the required five days.

-- LER 86-27, 12/15/86, Agastat GP relay failure due to improper seating of relays into base sockets. The licensee determined that a problem existed with this relay type after a relay failed during a preoperational test on December 15, 1986. Verbal notification per 10CFR21 was made on January 16, 1987. A written report, as required by 10CFR21, was issued and the ENS notification under 10CFR50.72 was made on January 26, 1987. The written report per 10CFR21 was not issued in the required five days and the ENS notification per 10CFR50.72 was not made until after site technical personnel had read the 10CFR21 report.

As documented in the previous resident inspector Combined Inspection Report 50-220/87-01 and 50-410/87-02, similar reporting requirement deficiencies were identified and a Notice of Violation issued. A second Notice of Violation was not issued for these events, in that the time period for these events and the previously identified violation overlap. In addition, the corrective actions for the previous violation have been reviewed by the inspectors and appear to be adequate. Further review of the implementation of these corrective actions will be documented in a subsequent inspection report.

7. Part 21 Report Review

During this inspection report period, the following 10CFR21 reports were initiated by the licensee:

(1) In February 1987, the licensee determined that the failure to install the spacers on the ball valve type MSIV actuator soleniod valves could have prevented the valves from going shut in the required three to five second time interval. The inspector reviewed licensee paperwork governing the installation of the solenoid spacer rings and concurred with the licensee's determination that the failure to install the spacers on the inside containment MSIV solenoids was based upon insufficient

engineering guidance and inattention to detail. The change written to E&DCR M10031 to install the spacers lacked adequate engineering direction and the field QC checklists for the inside containment MSIV solenoid modification (performed several weeks after the outside containment MSIV solenoid modifications) did not include a signoff for spacer installation.

(2) On February 8, 1987, the excessive spool packing leakage of the prototype MSIV was reported by the licensee. Following a potential Loss of Cooling Accident (LOCA), the amount of leakage that this defect could have allowed may have resulted in releases greater than 10CFR100 limits.

Based on the licensee's decision to replace the ball-type MSIVs with wye pattern globe valves, the inspector followup review of these two 10CFR21 reports is complete.

8. Main Steam Isolation Valve Replacement Review

The inspector reviewed plans, schedules, drawings, procedures, codes, standards, Technical Specifications, and proposed FSAR changes as part of an onsite inspection to evaluate the MSIV replacement activities.

a. Inspector review identified the following: (1) the originally installed hydraulically operated ball-type MSIVs were being replaced with air operated wye pattern globe valves and associated air and nitrogen supply systems and controls; (2) the design would meet safety related, seismic, environmental qualification, ASME Class 1 and 3, and IEEE 279 requirements; (3) the valves and actuators were purchased from General Electric Company (GE), but the actuators required upgrading; (4) piping, supports, and accumulator tanks for the air and nitrogen support systems would be designed, fabricated, and installed by Stone and Webster; (5) a new monorail system would be installed for lifting and handling the globe valves; (6) jet impingement forces on the new actuators and associated piping were taken into account; (7) all but two valves would be installed with their actuators in a vertical plane, two would be installed rotated 18 degrees from vertical; (8) the MSIV valve bodies would be welded into the main steam line using spool pieces as required; (9) a 28" to 26" reducer would be welded to the valve bodies onsite; (10) design reviews determined no non-seismically supported components affect this modification; and, (11) a heavy loads path for movement of the valves in the reactor building and containment was determined.

This review indicated much work had gone into the MSIV replacement project. The plans and schedules appeared to be well thought out and engineering documents appeared to be generally adequate. The inspector determined, based on the many revisions issued to various documents, that a portion of the engineering was not firmly fixed prior to initiation of the modification. Preliminary indications were that the incomplete engineering has not resulted in any significant problems.

b. Review of the proposed FSAR changes identified the following areas that required clarification:

-- Chapter 5, paragraph 5.4.5.1.5 requires clarification that the local stored energy per valve is sufficient for one closing cycle of that valve.

-- Chapter 9, paragraph 9.3.1.1.1 requires clarification that the portion of the instrument air system from the check valve to the actuator of each MSIV is safety-related. Additionally, clarification is required to clearly state that the newly added safety-related instrument air lines are safe from damage that could be caused by non-seismically mounted equipment.

-- The text in Chapter 9, including the tables and drawings at the end of the chapter, require updating to include the addition of the overpressure protection system designed to prevent overpressurization, during a LOCA, of the nitrogen accumulators located inside containment.

-- Chapter 3, Table 3.2-4 requires clarification to state that the ASME Section III Code Edition applicable to main steam piping is the 1974 Edition, with no Addenda.

-- A clarification should be made in the appropriate FSAR chapter that the new welds being made in the main steam piping (and other newly installed piping as appropriate) are pressure tested under the rules of ASME XI.

-- Chapter 3, Table 3-4 requires clarification in the Crane Load column that the MSIVs are air operated.

The need for these clarifications was discussed with the licensee and the licensee submitted the changes in their April 2, 1987 FSAR change request.

c. The inspector toured various areas of the plant site, the reactor building, and containment to observe activities in progress. Activities observed included storage of MSIV bodies and actuators, fabrication of accumulator tanks, handling and rigging of MSIVs, housekeeping; fitup, preheat, and welding of reducers to MSIVs; fitup, preheat, and welding of MSIVs into plant piping; QC and QA inspection activities; management and craft supervision; stud welding of threaded studs used as part of conduit clamp supports; conduit installation; expansion anchorbolt installation; weld preparation of main steam pipe ends; removal by air arc gouging of main steam pipe zero movement restraint inner blocks; and control of access into containment.

The following observations were noted:

-- Housekeeping at the beginning of the week's inspection was marginal, but had improved substantially by the end of the inspection period.

-- QA and QC inspectors were evident in the work areas and those interviewed were knowledgeable of their job responsibilities.

-- A mechanical snubber assembly was used as an anchor point for a ladder. Additionally, there was no evidence of the existence of a snubber protection program. The licensee stated that a snubber operability surveillance would be conducted prior to drywell closeout and that snubber protection practices, implemented at Unit 1, would be extended to Unit 2 and outlined in a station procedure.

-- The 26" and 28" diameter welds used consumable inserts and were made by welding machines.

-- A protective covering was not wrapped around the exposed main steam piping to minimize the potential for damage from arc strikes. The NRC inspector discussed this observation with construction personnel who reacted promptly to wrap the exposed piping.

-- A determination was made that Stone and Webster Engineering Corp. had the ASME Code stamps and valid site certification to perform the design, fabrication, and installation work required for this modification.

-- Expansion anchor bolts were installed and tested in accordance with site procedures.

-- Stud welding welder qualifications were performed on a daily basis as required by governing procedures and codes. Required testing and torquing of studs was also performed and monitored as required.

-- The decision was made to perform radiographic testing of the 26" and 28" diameter welds at certain intervals during the welding process. This decision resulted in identifying weld defects and facilitated making repairs without having to excavate excessive amounts of deposited weld metal.

-- A comprehensive seismic II/I program exists that is organized by zones in the plant and corresponds to volumes of space. This system was effectively used to determine mounting requirements of new components.

d. Although no violations resulted from observations of work in progress, three questions were raised by the inspector as follows:

-- The NRC inspector inspected the zero movement restraints after removal of the inner blocks by air arc gouging. The particular restraints involved were 2MSS*PRS*018 and 037. It was observed that the air arc gouging process had resulted in removal of base metal in the restraint steel of 2MSS*PRS*018 in excess of established limits. The inspector asked the licensee for their documentation of this deficiency and the planned method of repair. The inspector was informed that the base metal defects did not have to be specifically documented by QC on an inspection report, but that construction personnel, once realizing the problem, could initiate repair activities and not involve QC until the point in the procedure just prior to rewelding of the inner blocks to the restraint steel. This approach to repair of an ASME III Subsection NF Class I restrain, (ie. no QC documentation as to the base material damage), appeared unique to the NRC inspector. Discussion ensued between the NRC inspector and QC, QA, licensee, and Stone and Webster personnel as to the overall process involving QC documentation, Rework Control Forms, and Weld Repair Data Sheets. It was agreed at the conclusion of the initial discussions, that a flow chart of the steps required to identify, repair, and inspect the restraint defects would be generated and supplied to the NRC inspector. The inspector received this information subsequent to the onsite inspection. The flow chart indicated QC would inspect the restraint steel after removal of the inner blocks if base metal defects existed and would generate an Inspection Report (IR) to document the defects. This IR would then trigger repairs. This flow chart sequence was followed for the work in progress. In subsequent telephone conversations, it was confirmed that in no case could construction make a weld repair without QC involvement, but that they could grind out the defect prior to QC involvement. Following review of the work sequence and associated documents, the inspector had no further questions.

-- Inspection of fabrication of the accumulator tanks per E&DCR 10206B resulted in the NRC inspector questioning the design of the weld attaching the accumulator tank drain line to the tank. The design involved drilling a hole in the curved portion of a 20" diameter stainless steel pipe cap used to form one end of the tank and then fillet welding the 3/4" diameter stainless steel drain pipe to the 20" diameter pipe cap. Based on the geometry of the joint created, the inspector questioned the weld detail shown on E&DCR M10206B pages 8 and 9 and QC's ability to inspect it. The particular weld detail on the E&DCR specified a fillet weld, however, the joint geometry for much of the weld

was not suitable for a fillet weld nor could it be inspected to determine leg and effective throat sizes. The inspector discussed this concern with Stone and Webster engineering personnel who, in turn, agreed to pursue it. Subsequent to the onsite inspection, revision D to E&DCR M10206 was issued with a revised weld detail for this joint that described the weld type and size at 24 different locations of the welds. (One 360 degree weld on the outside of the pipe cap and one 360 degree weld on the inside.) The NRC inspector made a phone call to the site to ensure the weld dimensions on the E&DCR could be physically measured by QC and was assured this was being achieved. The inspector had no further questions.

-- The piping isometric drawings for installation of the new air lines from the existing air/nitrogen headers to the new valve actuators indicated an ASME to non-ASME break at the tie-in point to the new valve actuators. The inspector questioned Stone and Webster engineering personnel as to the intention of this code break and was informed that the tubing, valves, and other actuator parts were non-ASME. The inspector then asked what program was employed to ensure quality of the design, fabrication, and testing of the actuators. Because the actuators were purchased by the licensee from GE, the inspector met with GE personnel to discuss the quality program involved in manufacturing the actuators. The following key points were highlighted by GE:

- QUALITY CONTROL - The MSIV actuator is designated as a safety related component. As such, the suppliers are required to meet 10CFR50, Appendix B, and ANSI N45.2. Hence the design and manufacturing are controlled under a quality environment.

- The MSIV actuator is classified as a Class 1E component that has to meet the qualification requirements of NRC NUREG-0588, Category I. The design was qualified to a testing program prescribed by IEEE-323-74 and IEEE-344-75 to assure the component operability during and after an accident.

- The quality control program and the qualification program dictate that the component design is frozen to the qualified configuration. Any modification in terms of material, mechanism, and manufacturing process being considered must first be analyzed to assure that it would not invalidate the environmental qualification. If this is not the case, then the new configuration must undergo a similar environmental qualification (EQ) testing program before it can be applied.

- The MSIV actuator was classified as seismic Category 1. Its design was test proven against seismic loading and hydrodynamic loading.

- Each individual actuator was functionally tested to assure its operability prior to application. The buyer quality control representative source inspected and witnessed the test of the components prior to shipment. The hydraulic cylinder was subjected to a hydrostatic test at 5000 psig, a pressure comparable to ASME Section III requirement for pressures vessels designed to similar service conditions. The pneumatic cylinder was subjected to a pneumatic leak test at the operating pressure. The complete unit was subjected to a functional test to verify proper assembly and operability.

- All non-metallic parts of the actuator are qualified for a service life shorter than the plant life. These parts are maintained under a system defined by the EQ program. In other words, the parts with a service life shorter than the plant life will be replaced before the qualified life is exceeded.

Based on this information, the inspector had no further questions.

e. In summary, the inspection of documentation and work in progress indicated that, in general, the MSIV replacement was being performed and controlled in accordance with procedures and applicable codes and standards and was being well supervised and inspected. People involved with work activities were knowledgeable. The inspector identified FSAR clarifications, to accurately reflect the new MSIV design, which were promptly addressed by the licensee. Licensee actions to verify operability of snubbers located in the MSIV work area of the drywell and long term protective actions appear to be appropriate.

No violations were identified.

9. Allegation Followup Unit 2

During the inspection period, the inspectors conducted interviews and inspections in response to an allegation presented to the NRC. The inspector and licensee actions resulting from this allegations are noted below:

a. Allegation RI-86-A-101: As documented in Inspection Report

50-410/86-42, Section 10, the inspector substantiated an allegation concerning a contractor employee who had falsified his resume with respect to having a Professional Engineer's license. The inspector also determined that, although this contractor employee's educational and professional background was questionable, the work activities this individual participated in while on site received adequate oversight and review from supervisory licensee employees.

During this inspection period, the inspector reviewed and discussed with licensee representatives the station employee and contractor background verification program as defined by Section 3.8 of the Nine Mile Point Nuclear Station, "Security and Safequards Contingency Plan" and the Security Administrative Procedure, S-SAP-3.5, "Fingerprinting". The inspector determined that the licensee's comprehensive access authorization program was implemented at the Unit 2 construction site for all contractor personnel during August 1985 and that the S-SAP-3.5, Fingerprinting Program was instituted in April 1987. This individual's access was authorized prior to the licensee's implementation of the background verification program. Based on the licensee's background verification process, which includes inquiries into and verification of identity, previous employment, education, criminal history, character references, credit history and military service, the inspector concluded that, at present, the likelihood of an individual with false credentials obtaining unescorted site access is minimal. This allegation is closed.

b. Allegation RI-86-A-129: As documented in Inspection Report 50-410/86-56, Section 9, the inspector reviewed an allegation concerning a contractor employee who worked under an assumed name at the Unit 2 construction site as a Quality Control inspector. The NRC inspector and licensee (reference letter from NMPC to NRC dated January 12, 1987) verified, on a sample basis, that the work activities this individual was involved in were without discrepancies. As discussed in paragraph 8.1.a above, the access authorization program implemented at Unit 2, in August 1985, after this contractor employee had left the site, would have identified that this individual had a criminal record. Additionally, the recently implemented fingerprinting program, which cross-references FBI files, will provide a added dimension to the thoroughness of the background investigations conducted by the licensee. This allegation is closed.

c. Allegation RI-86-A-151: On December 13, 1986, the NRC received an allegation concerning the alleged improper application of red rubber gaskets to correct leakage problems with gate valves in the Unit 2 control air systems. The alleger stated that he had presented his concern to the licensee's Quality First Program (Q1P), but was not completely satisfied that his concern was properly addressed. The resident inspectors were aware of this concern being reviewed by the Q1P staff and were periodically appraised of the actions taken to resolve the concern.

The inspector discussed the QIP findings with the responsible licensee investigators and subsequently reviewed the supporting documentation. The inspector concluded the following:

-- As stated in the Final Safety Analysis Report, the compressed air systems at Unit 2 consist of the instrument air system, the service air system and the breathing air system. All three systems are used only for non-safety related equipment and components.

-- The bronze body gate valves used in the compressed air systems were appropriately purchased (Purchase Order No. NMP2-P302C-6) and the leakage problems properly documented as resulting from the installation process which involves soldering/brazing. The heat induced by the soldering or brazing sometimes caused disc and valve body warpage (N&DR No. 6643, dated 2/24/84).

-- Engineering resolution of the leakage problems included: lapping of the stainless steel seats and gates; installing vendor supplied red rubber gaskets between the union bonnet-rising stem and the valve body bonnet; and if necessary, replacing the entire gate valve.

-- In August 1985, licensee engineering responded to an Equipment Qualification Early Warning Notice (No. MEQ-001), which stated that red rubber gaskets were not qualified for use in safety related pipe in areas exceeding 30 million RADs. An Engineering & Design Coordination Report (No. P13483) was issued to ensure red rubber gaskets, used in all Class 151, 152, and 153 safety related pipe in areas exceeding 30 million RADs, were replaced with flexitallic gaskets. In May 1986, a comprehensive walkdown of all piping in the subject radiation areas was completed and no red rubber gaskets were identified to be in service. (reference: DSR No.P301A-004)

-- Subsequent to the receipt of the QIP concern, on November 14, 1986, the licensee Site Engineering Group completed an investigation and concluded that all gaskets used in the primary containment instrument air systems, ASME III Code Class 1, 2, & 3 piping, were verified to be flexitallic per as-built control drawings. (reference: SEG Memo No. 12187)

-- Upon completion of Instrument and Service Air Systems installation, system pressure testing per MP.GENE.002 and preoperational testing per N2-POT-19-1 were performed and completed satisfactorily on February 2, 1986.

Based upon the inspector's review, the allegation could not be substantiated. The bronze body gate valve problems encountered as a result of the installation process were adequately addressed and resolved by the licensee. Application of red rubber gaskets to correct valve leakage problems was appropriately authorized and controlled to preclude installation in high radiation areas where equipment qualification could be compromised.

No violations were identified.

10. Unit One Training Program Effectiveness Review:

a. The licensed operator retraining and continuing training program is outlined in the Nine Mile Point, Nuclear Training Procedure No. NTP-11. To evaluate the effectiveness of the program the inspector reviewed the plant operating history between January 1, 1986 and April 4, 1987, interviewed licensed Reactor Operators (ROs) and Senior Reactor Operators (SROs), and selected a Technical Specification violation that had a direct impact on an operator training deficiency. The inspector reviewed the recently administered RO/SRO annual requalification exams, conducted interviews with eleven (11) licensed personnel, and audited seven (7) licensed operator training records. The inspector also conducted interviews with several training program supervisors to discuss plant modification and procedure change tracking systems for training impact.

b. The inspector noted the following training program strengths:

-- Unit 1 plant reference simulator usage was being maximized for training on Emergency Operating Procedures and Technical Specifications usage.

-- Although the licensed personnel are not required to attend all lecture series, almost all are attending during their training week (every five weeks).

-- The licensed personnel interviewed indicated that the quality of instructors and lesson plan material had significantly improved over the past two years.

-- The training program instructors were viewed, by the operators, to be very receptive to individual training needs or deficiencies.

c. The inspector noted the following training program weaknesses:

-- The method used for tracking the implementation of required reading was inadequate. Section 8.4 of the Licensed

Operators Training file is supposed to be used for logging the date and title of each reading assignment completed. This was not being done, consistent with NPT-11, Section 5.1.2, due to the back-log of required reading and due to the licensee's inefficient routing and tracking system. In addition, there were no evaluation criteria to determine the objective of this requirement. Interviews with licensed personnel determined that the reading assignments were being completed mostly during their training weeks and were, for the most part, ineffective. The inspector discussed this concern with training department personnel. The licensee agreed that a change was necessary and that the required reading should be in conformance with the INPO Systematic Approach to Training Criteria.

-- All operators interviewed stated that the tracking of program requirements for requalification training was the responsibility of the NMP training department and that they were not familiar with the requirements. A condition for renewal of a license is that the applicant meet (complete) the requalification training program requirements. Licensed personnel at NMP1 should be aware of those requirements prior to signing their renewal application (NRC form 398), paying particular attention to those plant manipulations and/or evolutions to be performed on the plant or simulator.

-- Another area of concern expressed by several SROs during the interviews, was the unrealistic approach to training on emergency accident conditions. The Station Shift Supervisor and the Assistant Station Shift Supervisor felt that very little training was being conducted to mitigate plant degradation. During simulator training, very little emphasis was placed on the reactor operator response or equipment status that would prevent degraded conditions. For example, during simulator training the Reactor Mode Switch is left in run following a scram and causes an isolation. This action was taken to get into a specific EOP area, but would not normally be done.

d. With the exception of the licensed personnel not being familiar with the Requalification Training Program requirements and the inadequate training objective and tracking method used for assigned reading, the inspector concluded that the Operator Licensing Training program has improved over the past two years. This improvement has been attributed to increased training on the Unit 1 simulator and to the quality of lesson plan material and annual examinations.

No violations were identified.

11. Station Response to Another Nuclear Station Shutdown Order

On April 4, 1987, the inspectors met with the Unit 1 and 2 Operations and Unit Superintendents to discuss some of the generic aspects of the events leading up to the Peach Bottom Nuclear Station Shutdown Order. The licensee had already distributed copies of the NRC press release to all operators and had discussed the event with most Operations personnel. Subsequently, during the week of April 13, 1987, the Vice President - Nuclear held several meetings on site to talk directly with station personnel about their expected conduct and responsibilities while on site. During the April 4 meeting, station supervision stated that they were not currently aware of any problems involving operators or technicians sleeping while on duty at either site. Corporate policy, as emphasized by the Vice President, prohibits such activities and encourages employees to take action to prevent such occurrences.

12. Exit Meetings

At periodic intervals and at the conclusion of the inspection, meetings were held with senior station management to discuss the scope and findings of this inspection. Based on the NRC Region I review of this report and discussions held with licensee representatives, it was determined that this report does not contain Safeguards or 10 CFR 2.790 information.

The training program inspection scope and findings were summarized on April 8, 1987, during a combined Operator Licensing/Training Program Inspection Exit (Inspection No. 50-220/87-05).