U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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License Nos.:	DPR-63 NPF-69
Licensee:	Niagara Mohawk Power Corporation P. O. Box 63 Lycoming, NY 13093
Facility:	Nine Mile Point, Units 1 and 2
Location:	Scriba, New York
Dates:	August 10 - October 4, 1997
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11/24/97
Date

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EXECUTIVE SUMMARY

Nine Mile Point Units 1 and 2
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This integrated NRC inspection report includes reviews of licensee activities in the functional areas of operations, engineering, maintenance, and plant support. The report covers an eight-week period of inspections and reviews by the resident inspectors, and regional specialists in the areas of radioactive waste processing, radioactive material transportation and radiation protection.

PLANT OPERATIONS

The questioning attitude of a Nine Mile Point Unit 1 (NMP1) chemistry technician and the heightened sensitivity of the NMP1 staff to the possibility of an emergency cooling (EC) condenser tube leak were good. During the ensuing reactor shutdown, the control room operators' use of alarm response procedures, three-part communications, and self/peer checking were noticeably improved. Special simulator training resulted in good operating crew performance during the manual reactor shutdown.

The system walkdowns and performance history reviews indicated that the material condition of the Nine Mile Point Unit 2 (NMP2) standby liquid control system was good, and that the system has demonstrated a high level of reliability. The knowledge level of the technicians and operators during the performance of an observed surveillance test was good. However, operators stepping on small diameter piping and using a pipe wrench to assist in the manual valve manipulation indicated poor work practices, in that their actions could potentially damage plant equipment.

NMP2 operators considered a catch containment used to collect oil leaking from a gear box on the reactor core isolation cooling pump to be a permanent installation. However, contrary to NMPC procedure, a plant change request had not been initiated. (NCV)

MAINTENANCE

During NMP1 emergency cooling condenser repair activities, foreign material exclusion controls were appropriately maintained, in that material accountability and system cleanliness were controlled. Maintenance personnel adhered to work order requirements, and all associated procedures and documentation were readily available and the current revision. During a pipe cutting evolution, a poor safety and radiological work practice was identified, in that maintenance personnel were using a rubber-gloved hand to remove metal shavings. Radiological controls were satisfactory. Quality assurance (QA) oversight of ongoing maintenance activities was appropriate.

Inattention-to-detail and failure to self-check a completed surveillance test data sheet by NMP1 radiation protection (RP) calibration staff resulted in the failure to perform a ventilation radiation monitor instrument channel calibration within the technical specification (TS) required frequency. (VIO)

The inspectors considered the discovery by the NMP2 instrumentation and control technicians of the missing calibrations in the hydrogen recombiner system to be good. However, this was another example of a missed TS surveillance. (VIO)

ENGINEERING

An NRC review, in 1996, of the calculations to support the modification to bring the NMP1 blowout panels within the design basis identified minor calculational errors. In addition, NRC noted that corrective actions in early 1996 related to the NMP1 blowout panels design control concern had not been fully effective. (NCV)

An NMP1 operator's questioning attitude of the control room smoke purge system was very good and resulted in an engineering operability evaluation of the impact on control room emergency ventilation system (CREVS) operability. Notwithstanding, the interface between the smoke purge system and CREVS was inadequately evaluated during modifications in the early 1980s. (NCV)

PLANT SUPPORT

The radiation protection (RP) program area was being well-implemented at both units. The NMP1 outage ALARA (as-low-as-reasonably-is-achievable) goal was exceeded due to emergent work. Very good radiological housekeeping was noted in NMP2. Effective programs were implemented for contamination control and external dosimetry. The quality assurance (QA) program for the above areas was well implemented; audits and self-assessments were of appropriate scope and technical depth.

At both units, a good program had been established for the processing of liquid and solid radioactive waste (radwaste); although the Process Control Programs (PCPs) and associated procedures have not been properly maintained. (EEI) Also, the lay-up of the NMP1 #11 waste concentrates tank was questionable; NMPC indicated they would review this issue and provide the NRC with an action plan to deal with it. (IFI) At NMP2, plant conditions were generally very good relative to radiological housekeeping in radwaste. However, the QA program failed to identify fully the defects within the unit specific PCPs, and in one instance failed to ensure that corrective actions were taken to address an identified defect. (EEI) Additionally, a number of required audits of vendors providing transportation and/or waste services were not performed. (EEI) The above apparent violations are being considered for escalated enforcement, and are indicative of a lack of attention by management in this area.

On three different occasions during this inspection period, NMPC inadequately controlled shipments of radiological material to facilities offsite. (1) The shipment of a sample from the NMP1 core shroud shifted during transport and caused the radiation levels in the occupied space of the truck to exceed limits. (EEI) (2) A wrong liner of low-level radwaste was shipped offsite for disposal. (EEI) (3) A sample from the NMP1 EC condenser was shipped to an unlicensed facility; in addition, a similar occurrence happened in 1995. (EEI) All of the examples appeared to be due to a lack of procedures describing radwaste

operator activities, inattention-to-detail, and a lack of supervisory oversight. The above apparent violations are being considered for escalated enforcement.

The response of the Nine Mile Point security personnel to a "suspicious looking" package was acceptable. The declaration of an Unusual Event by the NMP2 SSS was appropriate and in accordance with the NMP2 Emergency Plan.

The inspectors noted that the concern associated with the automatic fire suppression system actuation in the control room of another nuclear power plant did not exist at Nine Mile Point. Plant personnel appeared trained and equipped to combat a control room fire. Additionally, procedures were in place should personnel evacuation of the control room be required.

REPORT DETAILS

Nine Mile Point Units 1 and 2
50-220/97-06 & 50-410/97-06
August 10 - October 4, 1997

SUMMARY OF ACTIVITIES

Niagara Mohawk Power Corporation (NMPC) Activities

NMP1

Nine Mile Point Unit 1 (NMP1) started the inspection period at full power. On September 15, 1997, the unit was shutdown due to indications of a tube leak in emergency cooling (EC) condenser #122. Subsequently, tube leaks were identified in all four EC condensers. NMP1 was shutdown for the remainder of the inspection period while NMPC investigated the root cause of the tube leaks and evaluated repair options.

NMP2

Nine Mile Point Unit 2 (NMP2) started the inspection period in the startup mode, following a forced outage to repair a leaking flexible drain hose on the "B" recirculation flow control valve. NMP2 obtained 95% of rated full power on August 12, 1997; power was limited to 95% due to the moisture separator reheaters being isolated. On September 7, power was reduced to 55% for a feedwater pump exchange. Power restoration was delayed due to equipment problems with a feed water heater level control valve; repairs were completed and 95% power was achieved on September 10, 1997. NMP2 maintained essentially 95% power for the remainder of the inspection period.

Nuclear Regulatory Commission (NRC) Staff Activities

Inspection Activities

The NRC conducted inspection activities during normal, backshift, and deep backshift hours. In addition to the inspection activities completed by the resident inspectors, regional specialists conducted inspections and reviews in the areas of radioactive waste (radwaste) processing, radioactive material transportation, and radiation protection. The results of the specialist inspections are contained in the applicable sections of this report. In addition, an inspection of the security program was completed near the end of this period, the results of that inspection will be included in the IR 50-220 & 50-410/97-11.

Three other NRC inspections were completed during this period, and are documented in separate inspection reports (IRs):

- Corrective Actions Program: IR 50-220/97-80 & 50-410/97-80
- Engineering and Closure of Generic Letter 89-10 Issues: IR 50-220/97-09 & 50-410/97-09
- Emergency Preparedness Program and Full Participation Exercise: IR 50-220/97-10 & 50-410/97-10

Updated Final Safety Analysis Report Reviews

A discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for additional verification that licensees were complying with UFSAR commitments. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR related to the areas inspected. The inspectors verified that the UFSAR wording was consistent with the observed plant practices, procedures and/or parameters, with exception of the radwaste program as described in Section R1.3 of this report.

I. OPERATIONS

O1 Conduct of Operations (71707) [1]

O1.1 General Comments

Using NRC Inspection Procedure 71707, the resident inspectors conducted frequent reviews of ongoing plant operations. Specialist inspectors in this area used other procedures during their reviews of operations activities; these inspection procedures are listed, as applicable, for the respective sections of the inspection report. In general, the conduct of operations was professional and safety-conscious; specific events and noteworthy observations are detailed in the sections below.

O1.2 NMP1 Reactor Shutdown due to Emergency Cooling (EC) Condenser Tube Leak

a. Inspection Scope

The inspectors assessed the licensee's actions in response to indications of a tube leak in EC condenser #122. The assessment included a review of the EC system atmospheric vent radiation monitor data, chemistry sample results, operator logs, applicable portions of the UFSAR, and discussions with various members of the licensee's staff. The inspectors observed control room activities during the reactor shutdown, including a review of the applicable procedures and technical specifications (TS). Also, the inspectors monitored the initial actions of the licensee to identify the location of the leak.

System Description

The NMP1 EC system is a passive, standby system designed to remove decay heat from the reactor, following a reactor scram, without the loss of reactor water inventory. The EC system is used as a heat sink when the main condenser is not available. Upon initiation, steam from the reactor passes through the EC condenser tubes and returns to the reactor as water. The EC system consists of two independent loops, with two condensers per loop.

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[1] Topical headings such as O1, M8, etc., are used in accordance with the NRC standardized reactor inspection report outline. Individual reports are not expected to address all outline topics. The NRC inspection manual procedure or temporary instruction (TI) that was used as inspection guidance is listed for each applicable report section.

b. Observations and Findings

On the evening of September 11, a NMP1 chemistry technician observed that the steam vapor from the EC loop #12 atmospheric vent was slightly more than normal. At 10:45 p.m., the chemistry technician further determined that radiation levels were higher than normal in the area of the EC condensers. The technician informed the NMP1 Station Shift Supervisor (SSS) of the observation, and was directed to sample the EC loop #12. On September 12, at about 1:30 a.m., NMP1 control room operators noted that the shell-side temperature for #122 had increased, and the vent radiation monitor reading for EC loop #12 had also increased slightly, both indicative of a tube leak in an EC condenser. Subsequently, chemistry results verified a tube leak. Based on the indications, operators isolated EC loop #12, and noted that the associated vent radiation monitor reading returned to normal. Deviation/Event Report (DER) 1-97-2669 was initiated to investigate the concern.

The inspectors considered the questioning attitude of the chemistry technician, and the heightened sensitivity of the NMP1 staff to the possibility of EC condenser tube leaks to be good. Additionally, the inspectors found the actions taken for the potential EC condenser tube leak to be appropriate, and consistent with the actions described in the UFSAR.

On September 14, with EC loop #12 isolated from the reactor coolant system, NMPC attempted to hydrostatically test the tubes in EC condenser #122, in accordance with an approved procedure. In preparation for the hydrostatic test, operators began to fill the tubes with water prior to pressurizing the system and noted that the water level was rising in the shell side of the condenser. This confirmed that a tube leak existed in EC condenser #122. Based on these indications, NMPC decided further investigation was required and NMP1 was shutdown on September 15.

The inspectors observed the NMP1 control room activities during the reactor shutdown. Control room operators performed the shutdown in accordance with approved procedures, and it was completed without incident. The inspectors noted that the use of alarm response procedures and three-part communications, in addition to self/peer checking, was improved.

This was the first shutdown of NMP1, within approximately five years, using manual insertion of all control rods. Previously, planned shutdowns were completed by inserting control rods to a power level of approximately 20%, at which time a manual scram was initiated to complete the reactor shutdown. NMPC performed the shutdown without a manual scram to minimize impact on the control rod drive (CRD) seals, and to determine whether CRD performance following this shutdown would be better than after past manual scrams. Due to the extended length of time since the last manual reactor shutdown, the operating crew scheduled to complete the evolution practiced the procedure on the simulator. The inspectors considered the simulator training to be of value, as evidenced by the good performance of the operating crew during the actual reactor shutdown.

On September 16, using a boroscope, NMPC identified a 1-inch break on an inlet tube in EC condenser #122. To obtain insights as to when the tube leak might have initiated, the inspectors reviewed historical data for the EC system, particularly chemistry sample and vent radiation monitor readings. The inspectors reviewed the gamma spectrum analysis data from water samples taken from the shell side of the condenser, and discussed the results with the NMP1 Chemistry Manager. The data included routine monthly samples for August and September, and the sample drawn on September 11 subsequent to the event. EC condenser vent radiation monitoring strip recorder data was also reviewed by the inspectors. The data included both trains of EC condensers from September 9 through September 11. The Loop #12 vent radiation monitor data indicated a noticeable increase in radiation levels beginning on the afternoon of September 11, an approximate 0.3 milliroentgen per hour (mR/hr) increase. The maximum indicated radiation level was 1.1 mR/hr on EC condenser #122, the alarm setpoint is 5 mR/hr; the indicated radiation levels were well below the allowed release limits Title 10 of the *Code of Federal Regulations*, Part 50 (10 CFR 50), Appendix I. The inspectors noted that all of the data, including the gamma spectrum analysis, indicated that the condenser tube failure occurred sometime between September 9 and 11.

During a subsequent hydrostatic test, NMPC also identified tube leaks in EC condensers #111, #112, and #121. As of the close of this inspection period, NMPC was in the process of determining the extent of the tube leaks, and investigating the failure mode and the root cause of the tube leaks. NMPC management indicated the repair and corrective actions would be based on results of the investigation.

c. Conclusions

The questioning attitude of the NMP1 chemistry technician and the heightened sensitivity of the NMP1 staff to the possibility of an EC condenser tube leak were good. During the ensuing reactor shutdown, the operators' use of alarm response procedures, three-part communications, and self/peer checking were improved. Special simulator training resulted in good operating crew performance during the reactor shutdown.

O2 Operational Status of Facilities and Equipment (71707)

O2.1 NMP2 Standby Liquid Control System Engineered Safety Feature Walkdown

a. Inspection Scope

The inspectors assessed the ability of the standby liquid control (SLS) system to perform its intended function. This assessment included a visual inspection (walkdown) of accessible portions of the SLS system. The inspectors observed performance of one surveillance test and reviewed several completed surveillance tests associated with the SLS system. The inspectors reviewed the SLS "System Health" report, and applicable sections of the NMP2 UFSAR, the TSs, the Individual Plant Examination (IPE), and the operating procedures. The inspectors also

reviewed the SLS system with respect to the Maintenance Rule, Title 10 of the Code of Federal Regulations, Part 50.65 (10 CFR 50.65). During the assessment, the inspectors discussed the related issues with the system engineer, chemistry department supervisor, operators, Operations Management, and the NMP2 Maintenance Rule Coordinator.

System Description

The NMP2 SLS system provides a method to chemically shutdown the reactor. It is used only in the event that a sufficient number of control rods cannot be inserted into the reactor core to shutdown the reactor. The SLS system shuts down the reactor by injecting a neutron absorbing boron solution into the reactor coolant system. The SLS system consists of a storage tank that provides the boron solution to two divisions of components. Each division includes a positive displacement pump, an explosive valve, a motor-operated valve (MOV), and associated manual valves, piping and controls. Both divisions use a common header that connects to the high pressure core spray (HPCS) system, downstream of the inboard containment isolation valve. The boron solution is discharged radially over the top of the core through the HPCS sparger. The SLS system can be manually initiated from the control room, or automatically initiated by the redundant reactivity control system.

b. Observations and Findings

The inspectors performed a walkdown of accessible portions of the SLS system. The inspectors compared plant drawings and Procedure N2-OP-36A, "Standby Liquid Control System," Revision 4, to the actual valve positions; no discrepancies were identified. In general, the material condition of the equipment appeared to be good. The inspectors identified no current valve leakage; however, the inspectors noted four manually-operated valves with minor visible indication of boron encrustation. Subsequently, the inspectors ascertained that the licensee had already planned to clean and inspect two of these valves the following week. The inspectors provided the licensee with the other two valve numbers and the licensee added them to their scheduled work. Housekeeping and equipment labeling were generally good. The inspectors identified two valves without the standard component identification label; upon informing the system engineer, actions were taken to obtain the proper labels.

The inspectors compared the design of the SLS system to the description provided in the UFSAR and identified no discrepancies. The UFSAR states that the usable volume of the SLS system boron solution storage tank is 5.1 inches above the centerline of the tank outlet piping, rather than from the bottom of the tank. The inspectors verified that appropriate tank levels and volumes were considered in applicable chemistry procedures and instrumentation calibration instructions.

The inspectors reviewed completed surveillance tests associated with the SLS system. The inspectors determined that the tests adequately included surveillance and testing requirements described in the TSs and UFSAR. The inspectors observed

SLS system surveillance test N2-OSP-SLS-Q001, "Standby Liquid Control Pump, Check Valve, Relief Valve Operability Test and 40 Month Functional Test," Revision 6, for Division II, performed September 2, 1997. The surveillance test was satisfactorily completed. Based on the response to inspectors' questions, the knowledge level of the operators and technicians performing the test appeared to be good. However, the inspectors noted two deficiencies during the performance of the surveillance test:

- The first was that the operators occasionally stepped on small diameter piping, although no damage was done in this instance.

- The second was that the operators used a pipe wrench to manipulate the SLS pump flow test throttle valve (2SLS*HCV116). The condition of the handwheel indicated that this had occurred in the past.

The inspectors discussed these concerns with the NMP2 Operations Manager. He agreed there was a potential for equipment damage, and provided direction (via the "Night Notes") to the operating crews, emphasizing the importance of (1) not walking on small diameter piping, and (2) contacting the SSS if difficulty is experienced during valve manipulations. In addition, the system engineer issued a problem identification (PID) report to investigate the difficult operation of the valve.

The inspectors reviewed the current "System Health Report" for SLS, and discussed system performance with the system engineer. There was no indication of major corrective maintenance for the system. Additionally, the inspectors verified that the SLS system was performing within the maintenance rule-established acceptance criteria.

c. Conclusions

The system walkdowns and performance history reviews indicated that the material condition of the SLS system was good, and that the system has demonstrated a high level of reliability. The knowledge level of the technicians and operators during the performance of an observed surveillance test was good. However, operators stepping on small diameter piping and using a pipe wrench to assist in the manual valve manipulation indicated poor work practices, in that their actions could potentially damage plant equipment.

O2.2 Plant Walkdowns

The inspectors conducted routine tours of both units during this inspection period. Following the shutdown of NMP1, the inspectors toured the feedwater heater and condenser bays and other areas normally inaccessible during power operation. Overall, the inspectors noted that equipment material condition and compartment housekeeping at both units were acceptable; although, during the tours, some minor discrepancies were noted. These discrepancies were discussed with licensee management and corrected.

During a tour of the NMP2 reactor core isolation cooling (RCIC) room, the inspectors noted a tygon tube directing oil leakage from a gear box to a metal catch containment. Although this was being tracked through the licensee's catch containment program (catch containment 97-02-14), no PID or work order (WO) had been generated to repair the leak. Discussions with the onshift SSS indicated that the operators emptied the containment as necessary and accepted this as permanent. The inspectors discussed the issue with the NMPC fire protection supervisor and verified that the oil contained within the containment would not cause the fire loading within the RCIC room to be exceeded.

The inspectors' discussion with the NMP2 General Supervisor of Operations (GSO) and review of Procedure GAP-OPS-04, "Catch Containments," Revision 2, indicated that permanently installed catch containments needed to be evaluated as modifications. Through the GSO, the inspectors ascertained that catch containment 97-02-14 was not evaluated as a modification. As a result of the inspectors questions, a plant change request was initiated by the system engineer. The failure to evaluate the catch containment as a modification is a violation of the TS 6.8.1, regarding procedure adherence. This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation (NCV), consistent with Section IV of the NRC Enforcement Policy. **(NCV 50-410/97-07-01)**

O8 Miscellaneous Operations Issues (90712, 92700)

O8.1 (Closed) IFI 50-220/96-07-18 & 50-410/96-07-18: Material Condition Discrepancies Identified in Several Areas

During the NRC Integrated Performance Assessment Process (IPAP) team inspection, several material condition discrepancies associated with the NMP1 shutdown cooling pumps, the NMP2 chilled water pumps, and the NMP2 emergency diesel generators were noted. The inspectors routinely tour all accessible areas of both units. During this inspection period, the inspectors specifically examined the above equipment, and identified no major discrepancies. Minor problems and general housekeeping concerns were discussed with the onshift SSS and corrected. This item is closed.

II. MAINTENANCE [2]

M1 Conduct of Maintenance (61726, 62707)

M1.1 General Comments

Using NRC Inspection Procedures 61726 and 62707, the resident inspectors periodically observed plant maintenance activities and the performance of various surveillance tests. As part of the observations, the inspectors evaluate the activities

[2] Surveillance activities are included under "Maintenance." For example, a section involving surveillance observations might be included as a separate sub-topic under M1, "Conduct of Maintenance."

with respect to the requirements of the Maintenance Rule, as detailed in Title 10 of the Code of Federal Regulations, Part 50.65 (10CFR50.65). Specialist inspectors in this area used other procedures during their reviews of maintenance and surveillance activities; these inspection procedures are listed, as applicable, for the respective sections of the inspection report. In general, maintenance and surveillance activities were conducted professionally, with the work orders (WOs) and necessary procedures in use at the work site, and with the appropriate focus on safety. Specific activities and noteworthy observations are detailed in the inspection report. The inspectors reviewed procedures and observed all or portions of the following maintenance/surveillance activities:

• N2-ISP-HCS-R110	Operating Cycle Channel Calibration of the Recombiner Reactor Temperature Instrumentation
• N2-CSP-SLS-M110	Standby Liquid Control Monthly Surveillance
• N2-CSP-SLS-@112	Adjustment of SLS [Standby Liquid Control] Tank Sodium Pentaborate Concentration
• N2-OSP-SLS-CS001	SLS Injection Header Check Valve Reverse Flow Test
• N2-OSP-SLS-Q001	Standby Liquid Control Pump, Check Valve, Relief Valve Operability Test and 40 Month Functional Test
• N2-OSP-SLS-Q002	Standby Liquid Control Valve Operability Test
• N2-OSP-SLS-R001	Standby Liquid Control Manual Initiation Actuation and 40 Month Functional Test
• N2-OSP-SLS-R002	SLS Heat Traced Piping and Storage Tank Heater Operability Test
• N2-OSP-LOG-D001	Daily Checks Logs
• WO 96-01105-02	Pre-calibrate new [SLS system] relief valve to be installed in RF-05
• WO 96-01530-02	Pre-calibrate new [SLS system] relief valve to be installed in RF-05
• WO 97-04407-00	Tube Leak in Emergency Condenser [EC] #122, Cut Inlet/Outlet Piping and Eddy Current Testing
• WO 97-04407-23	Remove and Evaluate Flow Indications in the Supply Side of the Tubesheet for HTX-60-42
• WO 97-04629-08	Tube Leak in #111 EC, Cut Inlet/Outlet Piping and Hemihead
• WO 95-01432-08	Tube Leak in #112 EC, Cut Inlet/Outlet Piping and Hemihead

M1.2 Repairs to NMP1 Emergency Cooling Condensers

a. Inspection Scope

The inspectors monitored maintenance activities to repair the four NMP1 EC condensers. The inspectors reviewed WOs and associated documentation, monitored personnel to verify adherence to foreign material exclusion (FME) controls, and discussed the work with maintenance and radiation protection (RP) personnel, and quality assurance (QA) observers.

b. Observations and Findings

The inspectors observed NMP1 maintenance activities related to inspection and repair of the EC condensers. The inspectors noted that maintenance and RP personnel adhered to posted FME requirements; i.e., personnel were appropriately logging material into and out-of the FME area, using the Material Accountability Log. Additionally, the FME for cutting evolutions was controlled, in that weld cuts were enclosed (i.e., taped over) when work was secured.

The inspectors noted that maintenance personnel were adhering to the WO requirements and all associated procedures and documentation were readily available and current. Hot-work permits were posted at the work site and were updated daily. Radiological controls within the work area were generally satisfactory; however, the inspectors noted some air lines running across the contamination area boundary that were not properly secured (taped down). NMPC RP personnel were informed and the lines were subsequently secured.

The inspectors discussed ongoing activities with members of the QA staff. The inspectors determined that QA coverage of the EC condenser work was appropriate. QA personnel were monitoring work activities during dayshift and backshift hours. During observations, both the NRC inspectors and QA staff noted a poor work practice during a pipe cutting evolution. Specifically, maintenance personnel were observed removing metal debris and burrs using a rubber-gloved hand while the cutting machine was in operation. The inspectors considered this practice both a safety concern, in that the rubber glove could potentially become entangled in the cutting machine and result in personnel injury, and a radiological concern, in that using a rubber glove to remove metal shavings could potentially result in glove tears and personnel contamination. The work supervisor was informed of the concern and maintenance personnel were immediately instructed on alternate methods for removing the material.

c. Conclusions

During EC condenser repair activities, FME controls were appropriately maintained, in that material accountability was maintained and system cleanliness was controlled. Maintenance personnel adhered to WO requirements and all associated procedures and documentation were readily available and of the current revision. During a pipe cutting evolution, a poor safety and radiological work practice was identified, in that maintenance personnel were using a rubber-gloved hand to remove metal shavings. Radiological controls were satisfactory. QA oversight of ongoing maintenance activities was appropriate.

M1.3 NMP2 Maintenance Activities on Offsite Power Supply

On September 30, 1997, NMP2 de-energized Line 6 and reserve transformer "B" for planned maintenance. Line 6 is one of the two TS required 115 kV (kiloVolt) offsite power supplies from the Scriba switchyard. 10 CFR 50.65 ("The Maintenance Rule") requires an assessment be made of all plant equipment that is out of service. This assessment is to determine the overall effect on the performance of safety functions, and is to include equipment removed from service for preventive maintenance activities. To fulfill this requirement, NMPC completed a probabilistic risk assessment (PRA) of the planned maintenance activities and concluded that the overall change in risk was small, and that the expected duration of the outage was short enough such that the proposed activity did not represent a significant risk increase. The inspectors reviewed the PRA and determined that it accurately accounted for all equipment out of service at the time of the maintenance, and provided a thorough evaluation justifying the conclusion. The work, including approximately 48 previously deferred preventive maintenance items, was completed on October 1, without incident.

M7 Quality Assurance in Maintenance Activities (61726)

M7.1 Missed Surveillance Test of the NMP1 Control Room Ventilation Radiation Monitor

a. Inspection Scope

The inspectors reviewed the failure of NMP1 to perform a TS-required surveillance test within required periodicity, and discussed the event with the NMP1 RP Manager.

b. Observations and Findings

On August 18, a NMP1 RP calibration technician was preparing to perform a quarterly instrument channel test for channel #11 of the control room (CR) ventilation radiation monitor. While preparing for the work, the technician identified that the instrument channel calibration for channel #11 had not been performed within the required periodicity. Specifically, NMP1 TS, Table 4.2.6.I, requires the instrument channel calibration to be performed once each operating cycle, not to exceed 24 months. Channel #11 CR ventilation radiation monitor was last calibrated on August 3, 1995.

Channel #11 was declared inoperable on August 18, calibrated and returned to an operable condition on August 20. The licensee identified the apparent root cause as inattention-to-detail and failure to self-check the completed preventive maintenance/ surveillance test (PM/ST) data-sheet following completion of the channel #12 calibration on April 24, 1996. The PM/ST sheet used during this calibration was erroneously updated as channel #11 by an RP technician and was subsequently reviewed by supervision. This information was entered in the PM/ST database, which reset the 24-month instrument channel calibration clock for channel #11; the actual due date of August 3, 1997, was canceled.

The NMP1 RP Manager informed the inspectors that a review of the RP Calibration History Records and control room logs indicated that the channel #12 CR ventilation radiation monitor instrument channel calibration had been satisfactorily completed on April 24, 1996, and an instrument channel test and calibration were completed in July 1997. Thus, channel #12 was always operable and the TS-required minimum number of channels had always been available.

The inspectors considered the licensee root cause determination to be reasonable. The failure to complete the TS-required surveillance test for channel #11 CR ventilation radiation monitor is a violation of NMP1 TS, Section 4.6.2.a, requiring sensors and instrument channels to be checked, tested and calibrated at least as frequently as listed in Tables 4.6.2.a to 4.6.2.I. **(VIO 50-220/97-07-02)** This violation is not being considered as non-cited because missed surveillances have been a repetitive problem.

c. Conclusions

Inattention-to-detail and failure to self-check a completed PM/ST data sheet by NMP1 RP calibration staff resulted in the failure to perform a ventilation radiation monitor instrument channel calibration within the TS-required periodicity.

M8 Miscellaneous Maintenance Issues (90712, 92700, 92902)

M8.1 (Closed) URI 50-220/96-07-04: Procedure Change Evaluation Used to Change Intent of a NMP1 Procedure

a. Inspection Scope

During the NRC IPAP team inspection, it was noted that temporary changes were made to a surveillance test procedure which appeared to change the intent of the procedure. The inspectors reviewed the affected procedure, the procedure change evaluation, and the associated DER.

b. Observations and Findings

During the NRC IPAP team inspection, it was noted than temporary changes were made to an NMP1 surveillance test procedure (N1-ST-Q1B, "Core Spray Loop 12 Pump and Valve Operability Test," Revision 4) that appeared to change the intent of the procedure. Changing procedure intent as a temporary change is not consistent with the requirements of the NMP1 TS, Section 6.8.3.

At Nine Mile Point, temporary changes to procedures are processed in accordance with Procedure NIP-PRO-04, "Procedure Change Evaluations" (PCEs). As documented in the DER (1-96-0822) disposition, NMPC determined that the PCE did not change the intent of the procedure; although they did identify several weaknesses in the administrative processing of the PCEs. The inspectors reviewed

the DER, the PCEs, and the respective safety evaluations, and determined that the NMPC conclusion was reasonable. There was no violation of the TS.

c. Conclusion

NMPC's implementation of a temporary change to a NMP1 surveillance test procedure was acceptable, although weaknesses were identified by NMPC in the administrative processing of the PCE.

M8.2 (Closed) LER 50-410/97-06: Plant Shutdown Due to Rising Unidentified Leakage

The event described in this Licensee Event Report (LER) was discussed in NRC IR 50-410/97-06, Section O2.1. The description and analysis of the event, as contained in the LER, were consistent with the inspectors' understanding of the event. This LER is closed.

M8.3 (Closed) LER 50-410/97-07: Failure to Calibrate Hydrogen Recombiner Instruments as Required by Technical Specifications Due to Procedure Omission

a. Inspection Scope

NMP2 identified that several instruments in the hydrogen recombiner system (HCS) had not been calibrated as required by TSs. NMPC identified this as part of their review in response to Generic Letter (GL) 96-01. The inspectors reviewed the event notification, the LER, and the revised surveillance test procedures.

b. Observations and Findings

On August 13, 1997, NMP2 instrumentation and control (I&C) technicians identified that eight instruments in the HCS were not calibrated during the performance of surveillance test procedure N2-ISP-HCS-R110, "Operating Cycle Channel Calibration of the Recombiner Reactor Temperature Instrumentation," Revision 2. NMP2 TS surveillance requirement (SR) 4.6.6.1.b.1 requires a channel calibration at least every 18 months. The I&C technicians identified this while reviewing the procedure, in accordance with the NMPC response to GL 96-01, "Testing of Safety-Related Logic Circuits." The missed calibrations were documented on DER 2-97-2395.

Since both trains of HCS were affected, the limiting condition for operation (LCO) in TS Section 3.0.3 was applicable. TS LCO 3.0.3 would require the reactor be shutdown within twelve hours; however, TSSR 4.0.3 allows up to 24 hours for completion of the surveillance. NMPC processed a procedure change to incorporate the calibration of the missed instruments into N2-ISP-HCS-R110; after which, Division I HCS was satisfactorily calibrated, and returned to service. Shortly thereafter, Division II was tested and declared operable.

In the LER, the root cause was identified as inadequate communication during initial procedure development. Also, a contributing cause was noted as poor work

practice during subsequent revision of the procedure. As one of the corrective actions, NMPC stated that NMP2 will continue to review the logic circuits to ensure that surveillance test procedures are consistent with TS requirements. In addition, administrative procedures related to procedure reviews were revised to add assurance that procedures were technically adequate. Notwithstanding, NMP2 violated TSSR 4.6.6.1.b.1, which requires a channel calibration of all HCS instrumentation at least once every 18 months. **(VIO 50-410/97-07-03)** This violation is not being considered as non-cited because missed surveillances have been a repetitive problem.

The inspectors reviewed the LER and found it to be timely and to accurately describe the event. The immediate corrective actions and actions to prevent recurrence were appropriate. This LER is closed.

c. Conclusion

The inspectors considered the discovery by the NMP2 I&C technicians of the missing calibrations in the HCS to be good. However, NMPC continues to have instances of missed TS surveillances, as noted in this and previous inspection reports.

III. ENGINEERING

E1 Conduct of Engineering (37551)

E1.1 General Comments

Using NRC Inspection Procedure 37551, the resident inspectors frequently reviewed design and system engineering activities, including justifications for operability determinations, and the support by the engineering organizations to plant activities. Specialist inspectors in this area used other procedures during their reviews of engineering activities; these inspection procedures are listed, as applicable, for the respective sections of the inspection report.

E8 Miscellaneous Engineering Issues (90712, 92700, 93903)

E8.1 (Closed) EA 96-079/VIO 1013: Design Control Measures Inadequate during Calculations for Establishing Reactor Building and Turbine Building Relief Pressure

The inspectors verified implementation of the corrective actions specified in the licensee's response, dated July 16, 1996, to the notice of violation. The actions taken by NMPC to preclude a recurrence of design control inadequacies included:

- An independent review of a sample of 29 NMP1 structural engineering calculations (that were originally performed by the engineer who incorrectly calculated the initial blowout panel relief pressure) was completed in April

1996. The independent reviewer, a NMP2 structural engineering supervisor, found no similar technical errors.

- The NMP1 engineering branch manager and structural engineering supervisor emphasized to the structural group the importance of understanding the function and behavior of a structural element before performing a calculation, understanding the differences in the mathematical assumptions when designing a component to fail rather than to provide structural support, and in providing a clear and self-explanatory conclusion in the end of calculations that does not require further interpretation of results.

- A lessons learned transmittal was disseminated to other organizations to communicate the facts and root cause surrounding the calculational error.

- The engineers and designers in the structural group were retrained on Procedure NEP-DES-08, "Calculations," to properly understand the role of a preparer, checker, and approver related to a calculation.

- The engineering branch revised the guideline used to perform a DER Operability Supporting Analysis (NEG-1E-006) to emphasize the role of a supervisor in checking the DER disposition with the results of the calculation, particularly those associated with operability determinations and the potential for reportability.

The inspectors reviewed the relevant documentation supporting completion of these corrective actions and concluded that the actions taken were those as described in the licensee's July 16, 1996 response. This item is closed.

E8.2 (Closed) URI 50-220/96-05-01: NRC Staff Review of Revised Reactor Building and Turbine Building Blowout Panel Relief Pressure Calculations

LER 50-220/95-05 identified the existence of an initial construction deficiency and a subsequent 1993 design calculation error associated with the reactor building (RB) and turbine building (TB) blowout panels. An enforcement conference was held regarding this matter on April 12, 1996; a Notice of Violation (Severity Level III) and Civil Penalty were issued on June 18, 1996. In response to the event, NMPC reanalyzed the upper bound pressure relief capacities of the RB and TB blowout panels and the lower bound structural failure capacities of the buildings to demonstrate that the panels would fail due to internal pressure prior to failure of the buildings. This would achieve the intended pressure relief function, as stipulated in the NMP1 UFSAR. In reviewing the NMPC response, the inspectors requested assistance from the NRC Office of Nuclear Reactor Regulation (NRR) to determine the technical adequacy of the revised design calculations for the RB and TB blowout panels.

On August 20, 1996, staff from the NRR Division of Engineering conducted an audit of the revised design calculations and performed a walkdown of the RB and TB blowout panels. This led to identification of additional items requiring licensee

response and resolution. In reviewing the NMPC calculations to support the re-analysis, the NRC staff identified several errors. Deficiencies included that the structural dead load was not independently treated in computing the structural failure capacity, and a high strain rate factor was inappropriately used in determining RB and TB pressure capacity. However, the staff judged the safety consequence of the errors to be low, since the correction of the errors would not have appreciably affected the computed structural capacities or changed the conclusion.

Subsequently on November 15, 1996, NMPC submitted revised calculations. The NRR staff reviewed the licensee's submittal, and concluded that the panels would perform their intended pressure relief safety function in a manner consistent with the applicable licensing basis, as stated in the NMP1 UFSAR. The revised calculations determined that the blowout panel upper bound pressure for the RB was 65 pounds per square foot (psf), and for the TB was 62 psf. The recalculated ultimate lower bound superstructure capacities were 117 psf and 135 psf for the RB and TB, respectively. This showed that there was ample safety margin for pressure relief of the buildings.

In addition, a concern was expressed by the NRC staff during the enforcement conference regarding the safety of the condensate storage tanks housed in the TB, in the event that a falling RB blowout panel impacted the TB roof. NMPC provided calculations to demonstrate the structural integrity of the TB roof and to assure the safety of the condensate storage tanks. The calculations provided for NRC review were initially found to be technically deficient with respect to the proper assumptions for calculating the kinetic energy of a falling panel. NMPC submitted revised calculations, which the staff found acceptable. The results showed that the safety of the condensate storage tanks was not compromised, since the roof was capable of absorbing the energy of a falling panel without rupturing or experiencing large deformation. Therefore, the safety consequence of the errors was low.

The errors identified by the NRC indicated that the licensee's design control measures, in place prior to the NRC audit of August 20, 1996, were not fully effective in assuring the accuracy of the revised calculations regarding this matter. However, based on the low safety significance of the errors identified, and NMPC's correction of the errors, this constitutes a violation of minor significance, and is being treated as a Non-Cited Violation, consistent with Section IV of the enforcement policy. **(NCV 50-220/97-07-04)**

E8.3 <u>(Closed) IFI 50-220/96-05-02: Inconsistencies in the NMP1 UFSAR and IPE with respect to the Reactor Building and Turbine Building Blowout Panel Relief Pressure Setpoints</u>

NMPC identified discrepancies between the various sections of the UFSAR regarding the stated value of the pressure relief capacity of the RB and TB blowout panels. In reviewing the associated event, the NRC identified similar inconsistencies within the Individual Plant Examination (IPE) with respect to blowout panel relief pressure.

A Licensing Document Change Request (LDCR 1-96-UFS-035), with the supporting 10 CFR 50.59 Safety Evaluation (No. 96-021), was approved by NMPC to revise the RB and TB blowout panel relief pressure setpoints, as described in the UFSAR. The relevant tables and sections of the UFSAR have been revised to change the failure load of the RB and TB blowout panels to 65 psf and 62 psf, respectively. Also, the relevant UFSAR sections were revised to change the failure loads of the RB and TB superstructures to 117 psf and 135 psf, respectively.

In support of the UFSAR changes, NMPC performed an evaluation to determine if an unreviewed-safety-question existed for the corrected parameters. An evaluation of the equipment qualification (EQ) analysis, using the revised relief pressures, was also performed to determine if there was an increase in the probability of equipment malfunction. It was concluded by the NMPC staff that equipment in the RB and TB would remain qualified following the maximum temperature, pressure, and humidity resulting from a high energy line break.

Through NMPC's Fuels and Analysis Group, the inconsistencies in the RB and TB blowout panel relief pressures were evaluated to determine if the IPE results were affected by the revised values. Using a Modular Accident Analysis Program, the blowout panel relief setpoint was varied from 0.01 psf (assumed to open early) to infinite psf (assumed never to open). The results indicated that the IPE results were not significantly changed due to other existing leakpaths and the postulated failure of building ventilation systems.

The inspectors concluded that the licensee has taken the appropriate actions to remove inconsistencies regarding RB and TB blowout panel relief pressures as stated in the UFSAR and IPE. An evaluation using the revised parameters for EQ analyses has shown the results to be consistent. The inspector had no further questions.

E8.4 (Closed) LER 50-220/97-07: Potential Control Room Emergency Ventilation System Operation Outside the Design Basis due to Inadequate Evaluation

a. Inspection Scope

The inspectors reviewed the DER and LER associated with the NMP1 control room smoke purge system impact on the operability of the control room emergency ventilation system. The inspectors discussed the issue with a NMP1 SSS and the NMP1 Plant Manager.

b. Observations and Findings

On August 6, 1997, a NMP1 operator questioned the ability of the control room emergency ventilation system (CREVS) to fulfill its accident mitigation function with the control room smoke purge system (CRSPS) in operation. Specifically, if a high radiation signal resulted in an automatic initiation of the CREVS, and the CRSPS was already in operation, the design function the CREVS to maintain control room air quality would have been inhibited. Outside air would continue to enter the control

room until the CRSPS was manually secured, since the CRSPS did not have an automatic isolation feature. The inspectors considered the questioning attitude of the operator to be very good. The licensee subsequently issued DER 1-97-2326 to address the concern. On August 15, following an engineering evaluation, the licensee reported this issue to the NRC, in accordance with 10 CFR 50.72.

The CRSPS was designed to clear the smoke and maintain a habitable atmosphere in the control room and auxiliary control room (i.e., relay room) in case of a fire. However, the licensee also used the system during periods when the normal control room ventilation was secured for maintenance. The LER stated additionally that the CRSPS had been operated at times other than its intended design and concurrently when CREVS operability was required.

The inspectors reviewed the LER and found that it accurately described the event. Licensee immediate corrective actions included placing administrative controls on the CRSPS control switch to prevent operation without first considering the potential impact on operability of the CREVS. Long-term corrective actions were to revise operating and test procedures for the CRSPS to ensure the system is operated only for smoke removal, and to ensure that the system is tested only when the CREVS is not required to be operable. Additionally, the licensee planned to review selected modifications performed in the 1980s for similar system interface deficiencies. The inspectors considered both the immediate and long-term corrective actions to be appropriate.

The licensee root cause evaluation attributed the deficiency to an inadequate evaluation of the CRSPS interface with the CREVS during modifications in 1980 and in 1984. This is a violation of 10 CFR 50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion III, "Design Control." This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.3 of the NRC Enforcement Policy. **(NCV 50-220/97-07-05)**

c. Conclusions

An NMP1 operator's questioning attitude of the control room smoke purge system was very good and resulted in an engineering operability evaluation of the impact on CREVS operability. Notwithstanding, the interface between the smoke purge system and CREVS was inadequately evaluated during modifications in the early 1980s.

IV. PLANT SUPPORT

Using NRC Inspection Procedure 71750, the resident inspectors routinely monitored the performance of activities related to the areas of radiological controls, chemistry, emergency preparedness, security, and fire protection. Minor deficiencies were discussed with the appropriate management, significant observations are detailed below. Specialist inspectors in the same areas used other procedures during their

reviews of plant support activities; these inspection procedures are listed, as applicable, for the respective sections of the inspection report.

R1 Radiological Protection and Chemistry (RP&C) Controls (71750, 83750, 86750, TI 2515/133)

R1.1 General Comments

During entry into and exit from radiologically controlled areas (RCAs), the inspectors verified that proper warning signs were posted, personnel entering were wearing proper dosimetry, personnel and materials leaving were properly monitored for radioactive contamination, and monitoring instruments were functional and in calibration. During periodic plant tours, the inspectors verified that radiation work permits (RWPs) and survey maps were current, and that they accurately reflected plant conditions. They observed activities in the RCAs and verified that personnel were complying with the requirements of applicable RWPs, and that workers were aware of the radiological conditions in the area.

R1.2 Radiological Protection Program

a. Inspection Scope

The inspectors reviewed the ALARA (as-low-as-is-reasonably-achievable) post-outage job reviews, personnel contamination reports, selected exposure evaluation reports (EERs), and a vendor audit, under the National Voluntary Laboratory Accreditation Program (NVLAP). In addition, the inspectors conducted tours (including NMP2 lower reactor building rounds with a plant operator); and interviewed station staff.

b. Observations and Findings

Work scope additions to the extended NMP1 fourteenth refueling outage (RFO14) were responsible for the RFO14 ALARA goal being exceeded. The ALARA goal was set at 276 person-rem, actual exposure accrued was about 299 person-rem. Major work scope additions included inspection of five recirculation system welds, repair of four valves after local-leak-rate-testing failures, rolling four stub tubes under-vessel, and additional core shroud inspections and tie-rod repairs. This additional work accounted for 36.2 person-rem, and minor tasks contributed an additional 13.5 person-rem. The licensee had budgeted 15 person-rem for emergent work. Another important contributor to exceeding the original goal was that the work scope increase extended the outage from a planned 35 days to 67 days. Exposure for the NMP2 RFO5 was less than the ALARA goal. The ALARA goal was set at 215 person-rem, actual exposure was 182 person-rem. The inspectors noted that lessons learned in conducting work at both units had been captured for future consideration. No contamination events of regulatory concern were noted. The inspector assessed that postings and labels were established in accordance with the licensee's program.

Thermoluminescent dosimeter (TLD) services were vendor-supplied; the vendor was NVLAP approved, as required. The inspectors reviewed the most recent NVLAP assessment of the vendor laboratory and discussed the vendor's actions pertaining to deficiencies and comments. The Dosimetry Supervisor continued to oversee the adequacy of the program. No inadequacies were noted in any of the EERs reviewed. As noted during tours, individuals were wearing the required dosimeters.

The inspectors noted that no contaminated area entries were required of the NMP2 operator during the conduct of rounds in the lower reactor building. Also, the plant operator had to make few high radiation area (HRA) entries, as the licensee had installed cameras in many HRAs, allowing the operators to take readings while remaining outside the cubicles. Very good radiological housekeeping was noted in NMP2.

c. Conclusions

The radiological protection program area was being well-implemented. The NMP1 outage ALARA goal was exceeded due to emergent work. Very good radiological housekeeping was noted in NMP2. Effective programs were implemented for contamination control and external dosimetry.

R1.3 Transportation and Radiological Waste Programs

a. Inspection Scope

The inspectors reviewed the licensee's programs for the processing of liquid and solid radiological waste (radwaste) and the transportation of radioactive materials, including: the Process Control Program (PCP), shipping records, scaling factor data (for compliance with 10 CFR 61.55), and system walkdowns in radwaste.

b. Observations and Findings

NMP1

The NMP1 radwaste processing program was described in the NMP1 radwaste Process Control Program, Revision 2, dated November 15, 1994. The inspectors noted that the NMP1 PCP lacked any specifics on the way the unit processed wastes, and that it contained erroneous references to federal regulations, specifically outdated versions of 10 CFR 20 (significantly revised in 1994) and 49 CFR (revised in 1996). Failure to incorporate into the PCP the changes in 10 CFR 20 and 49 CFR indicate that the PCP was not periodically reviewed and revised. Failure to maintain the PCP is an apparent violation of NMP1 TS 6.8, which requires that procedures specified in Regulatory Guide 1.33 be written, maintained and adhered to for plant operations. Regulatory Guide 1.33 includes procedures for the processing of liquid and solid radwaste, for which the PCP is the core document. **(EEI 50-220/97-07-06)**

The inspectors reviewed the shipping records for five shipments of radwaste and radioactive material. In general, the documentation for shipping radioactive material and radwaste was clear and complete and in accordance with 10 CFR and 49 CFR. However, one of the shipments reviewed was noted not to be in compliance with regulations. On July 24, 1997, the licensee shipped two metal samples from the core shroud to BWX Technologies, Inc. Upon receipt, it was noted by BWX that radiation levels in an occupied portion of the vehicle were 2.8 milliRem per hour (mRem/hr), in excess of the regulatory limit of 2 mRem/hr, as specified in 49 CFR 173.441; this is an apparent violation. **(EEI 50-220/97-07-07)**

The inspectors toured portions of the radwaste systems located in various buildings. All facilities were found to be generally neat and orderly, and the conditions in these facilities had noticeably improved during the past three years. The inspectors noted, however, that the #11 concentrated waste tank still had concentrates in it, even though the #11 waste evaporator was taken out of service over 17 years ago. The NMP1 UFSAR for the tanks and vessels in the radwaste system assumes that the tanks regularly receive and discharge waste materials. No analysis was performed for wastes being indefinitely stored in one of the tanks. The inspectors discussed with the licensee the fact that the conditions in #11 concentrates tank are not described or analyzed in the UFSAR. The licensee agreed to conduct a detailed evaluation and provide to the NRC the results of their review, including a plan of action for ensuring the safe use of concentrates tank #11 or the removal of the tank contents. **(IFI 50-220/97-07-08)**

The inspectors also reviewed the NMP1 UFSAR, specifically Sections 11.2 (liquid waste) and 11.3 (solid waste) and compared the systems and process descriptions with current plant operations. The inspectors determined that both sections were significantly out-of-date and required revision. The licensee provided documentation that indicated that such a revision was currently underway for the UFSAR in general, and that Sections 11.2 and 11.3 were included in this revision.

NMP2

The inspectors reviewed the licensee's program for radwaste processing, as described in the NMP2 radwaste Process Control Program, Revision 2, dated November 15, 1994. The inspectors identified that within this document, references to 49 CFR were out of date, following the revisions to 49 CFR in April 1996. Failure to maintain the PCP, is an apparent violation of Technical Specification 6.13. **(EEI 50-410/97-07-06)**

The inspectors reviewed shipping records for radwaste and radioactive material transportation. All records reviewed were in compliance with regulations contained in 10 CFR Parts 20, 61 and 71, and 49 CFR Parts 170-177. The records reviewed were clear and concise, and included documentation related to shipping manifests, shipment classification, waste classification (where applicable), and emergency notifications.

The inspectors toured the NMP2 radwaste facilities, and found them to be well maintained, appropriately posted, and with only small areas kept as contaminated. The inspectors also reviewed the NMP2 UFSAR and determined that Section 11.2 (liquid radwaste) and 11.4 (solid radwaste) had only minor discrepancies relative to current plant operations. The licensee provided documentation indicating that revisions to the UFSAR which will address the discrepancies have already been drafted.

Common

The inspectors reviewed the licensee's program for determining hard-to-measure radionuclides, in order to comply with 10 CFR 61.55. The licensee periodically submitted waste stream samples to a vendor laboratory for total isotopic analysis, and derived waste stream specific scaling factors from the results. The inspector reviewed the licensee's program for ensuring the applicability of the scaling factors, and determined that the licensee's procedures in support of this program were vague. The licensee agreed with the inspectors' observations and indicated that a review of these procedures would be conducted to determine what additional guidance would be appropriate.

c. Conclusions

A generally effective radwaste program had been established at each unit; but procedures and associated documentation (PCP and UFSAR) have not been properly maintained. (EEI) In addition, one shipment of radioactive material resulted in the occupied portion of the vehicle exceeding allowed limits. (EEI) Plant conditions were generally very good relative to radiological housekeeping in radwaste. However, the lay-up of waste concentrates tank #11 at NMP1 is questionable; NMPC stated that a written plan of action for dealing with it would be provided to the NRC. (IFI)

R1.4 Shipment of Radioactive Material to an Unlicensed Facility

a. Inspection Scope

The inspectors discussed the circumstances surrounding a radioactive material shipment to an unlicensed facility with the NMP1 radwaste supervisor and NMP2 RP Manager.

b. Observations and Findings

On September 25, 1997, a metal sample removed from a NMP1 EC condenser tube sheet was shipped to BWX Technologies, Inc., in Lynchburg, Virginia, for laboratory analysis. This sample was prepared for shipment as a "limited quantity" in accordance with 49 CFR 173.421. A limited quantity is defined as the maximum amount of a hazardous material for which there is a specific labeling or packaging exception.

The radwaste supervisor informed the inspectors that the manifest had been properly prepared and was properly addressed. The package was sent to the licensee's warehouse for shipment by common carrier. Warehouse staff placed the shipping label used by the common carrier (with the incorrect address) over the correct shipping address originally placed on the package. The incorrect address resulted in the package being delivered to the BWX Contracts Officer in an administration office complex, in lieu of the laboratory facility. The shipment arrived at the office complex on the morning of September 26. The Contracts Officer realized the shipping error, did not open the package, and notified NMPC of the error. The package was shipped to the laboratory facility on September 29 and arrived on September 30. The BWX office complex was not specified on the Material License Certificate for receipt of radioactive shipments.

During the inspection, the inspectors ascertained that on May 24, 1995, a similar radioactive shipment error occurred. Specifically, a source range detector was shipped to the wrong General Electric (GE) location. The shipment went to GE-San Jose, California, rather than GE-Twinsburg, Ohio. GE-San Jose did not have a license to receive radioactive material. GE informed NMPC, and the shipment was redirected to the GE-Twinsburg facility in Ohio. As in the September 1997 event, the manifests had been properly prepared, but warehouse personnel sent the package to the wrong address.

The inspectors discussed both events with the NMP1 RP Manager. The RP Manager indicated that Nuclear Procurement Administrative Procedure NPAP-INV-210, "Receipt, Test, Inspection and Processing of Materials, Parts and Services," Revision 8, defined the requirements for material shipments offsite. In response to the 1995 event, NPAP-INV-210 was changed to incorporate an independent verification of the required documentation to assure the item was ready for shipment. The inspectors considered the corrective actions for the 1995 event to be ineffective in preventing recurrence.

10 CFR 30.41 requires a licensee transferring radioactive material to verify that the transferee's license authorizes the receipt of the type, form, and quantity of byproduct material to be transferred. Contrary to the above, on two occasions, NMPC shipped radioactive material to an unlicensed facility. This is an apparent violation of NRC regulations. **(EEI 50-220/97-07-09)**

c. Conclusions

On two occasions, personnel inattention-to-detail and inadequate verification resulted in the transfer of radioactive material to a location not authorized to receive such material. Furthermore, the corrective actions for the first event were ineffective in preventing recurrence. (EEI)

R2 Status of RP&C Facilities and Equipment (83750)

R2.1 Radiological Protection Facilities and Contamination Controls Instrumentation

a. Inspection Scope

The inspectors reviewed licensee changes to RCA access controls and the manner in which contamination controls instrumentation had been calibrated.

b. Observations

The inspectors noted that the licensee had assessed the impact of the recent 10 CFR 61 scaling factors on the instrumentation program. Radioisotopes chosen for frisker (Eberline RM-14) source checks and calibrations were appropriate, based on the licensee's 10 CFR 61 assessment. The inspectors considered the licensee's efforts in upgrading their small article monitors (SAM) to the equivalent of SAM Model-9 to be a good initiative. The inspectors reviewed the SAM alarm set points at NMP2 and found them appropriate.

Since the last inspection of this area, the licensee improved the RCA access point by installing turnstiles. This should help to ensure that workers have the correct dosimetry to comply with the appropriate radiation work permit. Bar codes have been relocated from security badges to TLDs and the RCA turnstiles are unlocked by inserting an operating electronic dosimeter into the turnstile resulting in computer logging of an RCA entry.

This area was being well-implemented. Installation of additional access control devices has improved this program area.

R3 PR&C Procedures and Documentation (71750)

R3.1 Shipment of Wrong Radwaste Material

a. Inspection Scope

NMPC personnel loaded and shipped an incorrect liner of low-level radwaste to a facility for disposal. The inspectors interviewed the personnel involved and their management, and reviewed the associated procedures and documentation.

b. Observations and Findings

On September 5, 1997, NMPC informed the resident inspectors that an incorrect liner of low-level radwaste was shipped for disposal. During the unloading of the liner, the recipient, Molten Metal Technology, noted that radiation levels in the area of the liner were higher than expected.

During their investigation, NMPC discovered that on September 3, an NMP1 radwaste operator inadvertently loaded the wrong liner, consisting of dewatered resin and charcoal filter material from NMP2, into the shipping cask for transport to Molten Metal Technology. The liner that was supposed to have been shipped was filled in 1995, the liner that was actually shipped was filled in 1997. The NMP1 radwaste facility is used for interim storage of all radioactive material awaiting shipment from NMP. The radwaste shipment schedule had the wrong location for the liner. Although each liner has a unique identification number, the radwaste operator failed to check the number on the liner with the number on the shipment schedule, using only the storage location number.

Before the truck left the NMP1 radwaste facility, an NMP1 radiation protection (RP) technician conducted a radiation survey of the cask and sent the results to the NMP2 RP technician who authorized the shipment and signed the associated shipping manifest. The NMP2 RP technician did not review the radiation survey; if he had, he would have noted that the radiation levels on the surface of the liner were almost four-times those expected. Readings for the 1995 liner were expected to be about 800 milliRem per hour (mRem/hr); the actual survey showed 3,000 mRem/hr on contact with the liner.

The inspectors discussed the event with the Radwaste Supervisors for both units, and reviewed the associated documentation. The discussions with the supervisors confirmed that there were missed opportunities for the identification that the wrong liner had been loaded. In addition, the inspectors determined that there were no procedures directly related to the loading of liners or the shipment of radwaste material. Immediate corrective actions included a requirement for plant manager approval of all radwaste shipments.

10 CFR 20, Appendix G, "Requirements for Transfers of Low-Level Radioactive Waste Intended for Disposal at Licensed Land Disposal Facilities and Manifests," Section I.B, requires the shipper [NMPC] of radioactive waste to provide information regarding the shipment on the manifest, including the total radionuclide activity in the shipment. 10 CFR 71, "Packaging and Transportation of Radioactive Material," Paragraph 71.5, requires each licensee [NMPC] who delivers licensed material to a carrier for transport to comply with the requirements of 49 CFR 172. 49 CFR 172, Paragraph 172.203, requires for shipments of Class 7 (radioactive) material to include the activity contained in each package of the shipment. Contrary to the above, the shipping manifest did not accurately reflect the actual radionuclide activity of the shipment; this is an apparent violation of 10 CFR 20 and 49 CFR 172. **(EEI 50-220/97-07-10& 50-410/97-07-10)**

c. Conclusion

NMPC personnel loaded and shipped the wrong liner of low-level radwaste to a facility for disposal. (EEI) In less than two months, three different shipments from the Nine Mile site were inadequately controlled (also see Sections R1.3 and R 1.4 of this report). All three appear to be due to a combination of a lack of procedures

describing shipping activities, inattention-to-detail on the part of the radwaste operators, and a lack of supervisory oversight.

R5 Staff Training and Qualifications (86750, TI 2515/133)

R5.1 Training of Staff Involved in Radioactive Material Transportation and Radwaste Processing

a. Inspection Scope

The inspectors reviewed the licensee's program for the training of personnel involved with radwaste processing and radioactive material transportation.

b. Observations and Findings

The licensee has established two distinct training programs for plant workers involved in transportation and radwaste processing. One program was presented to workers involved in waste certification and shipping, in accordance with NRC Inspection and Enforcement (IE) Bulletin.79-19. The second program was for workers involved in the receipt or shipment of radioactive materials, in accordance with 49 CFR 172.700. This second program used a tiered approach to training, involving lesson plans of increasing difficulty, with the highest level of training given to the workers who certify shipments.

For 1996, the licensee sent a number of plant personnel to a vendor training program to meet its IE Bulletin commitment and to satisfy the requirements of 49 CFR. This training was reviewed in advance by the Nine Mile Point training department. Appropriate documentation was contained in the training records for the inspectors to determine that the vendor training was the equivalent of the licensee's program.

c. Conclusions

The licensee has established a good and well documented training program for workers involved in radwaste processing and the shipment of radioactive materials.

R7 Quality Assurance (QA) in RP&C Activities (83750, 86750, TI 2515/133)

R7.1 QA in Radiation Protection Activities

a. Inspection Scope

The inspection consisted of reviews of DERs; the RP "First Quarter 1997 Radiological Engineering Self Assessment Report for NMP2," performed in accordance with "NIP-ECA-05, "Radiation Protection Branch Self-Assessment, Radiation Worker Practices;" and QA Audit Number 96017, "Radiation Protection Program." In addition, the inspectors interviewed the RP managers.

b. Observations and Findings

The inspectors noted that RP self-assessments were a good initiative and a tool for augmenting QA audits/surveillances. The assessments were conducted by RP department staff and were used to assess and provide immediate feedback to station workers on their radiation worker practices. The department self-assessments were objective and self-critical.

A low threshold for RP-related DERs was noted. A proper level of attention was placed on DERs depending on their significance and complexity. Corrective actions were both timely and reasonable for the DERs reviewed. The use of subject-matter expert in the conduct of QA Audit 96017 was considered to be a good initiative. No items of regulatory significance were noted during the inspectors' review of the DERs or the QA audit. Overall, a very high level of attention has been placed in improving human performance in the RP area.

c. Conclusions

Those aspects of the QA program reviewed were well-implemented. Audits and self-assessments were of appropriate scope and technical depth.

R7.2 QA in Radiological Transportation and Radwaste Activities

a. Inspection Scope

The inspectors reviewed the licensee's program for the assurance of quality in waste processing and transportation of radioactive materials. The inspectors evaluated this program through the review of licensee conducted audits and surveillances.

b. Observations and Findings

NMP1 TS 6.5.3.8 and NMP2 TS 6.5.3.8 require that an audit be conducted every 24 months of the respective unit Process Control Program (PCP). The inspectors reviewed the licensee's audit of the PCP (Audit 96002, dated December 19, 1996). This audit failed to identify out-of-date references to federal regulations contained in both the NMP1 and NMP2 PCPs. Additionally, while the audit did identify out-of-date references to training procedures in the PCPs, the DER issued to identify this finding was closed without the PCPs being revised to correct the defect. The inspectors noted that 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires that measures be established to assure that conditions adverse to quality are promptly identified and corrected. The inspectors noted that the failure to identify conditions adverse to quality, and the failure to ensure that such conditions are corrected, are apparent violations of 10 CFR, Appendix B, Criterion XVI. **(EEI 50-220/97-07-11& 50-410/97-07-11)**

The inspectors also reviewed the licensee's program of vendor audits. The licensee could only identify one audit of a vendor, Chem Nuclear Systems, qualified to

supply NRC-certified shipping casks or waste processing services. The licensee does use NRC-certified casks from another vendor, SEG, Inc.; and uses both SEG and Molten Metal Technologies as waste processors. No audits of these vendors were conducted. Regarding the use of vendor shipping casks, the inspectors noted that 10 CFR 71.12 allows the NRC to issue a general license to deliver for transport radioactive material in a package for which the NRC has issued a certificate of compliance. The general license requires that the licensee have in-place a QA program, approved by the NRC, that satisfies the provisions of 10 CFR 71, Subpart H (Quality Assurance). 10 CFR 71, Subpart H, requires, in part, that a comprehensive system of planned and periodic audits be conducted to verify compliance with all aspects of the QA program. The licensee transported radioactive material in a shipping container owned by SEG, Inc., for which the NRC has issued a certificate of compliance; however, the licensee had not conducted periodic audits of SEG to verify compliance with all aspects of the vendors NRC-approved quality assurance program. The inspectors noted that the failure to conduct audits of suppliers of NRC-certified shipping casks is an apparent violation of 10 CFR 71.12. **(EEI 50-220/97-07-12& 50-410/97-07-12)**

Regarding the use of vendor provided radwaste processing systems, the inspectors noted that NMP1 TS 6.8 requires that procedures and administrative policies for activities listed in Appendix "A" of NRC Regulatory Guide (RG) 1.33 be established, implemented and maintained. RG 1.33, Appendix "A" lists procedures for the processing of radioactive waste. The NMP1 Radwaste PCP, paragraph 3.1.1, requires, in part, that radioactive waste may be processed using approved vendor equipment and procedures provided that the vendors have a QA program that meets NRC requirements. The inspectors noted that the failure to verify the QA program of radwaste processing vendors is an apparent violation of TS 6.8. **(EEI 50-220/97-07-13)**

c. Conclusion

The QA program failed to identify fully the defects within the unit specific PCPs, and in one instance failed to ensure that corrective actions were taken to address an identified defect. (EEI) Additionally, a number of required audits of vendors providing transportation and/or waste services were not performed. (EEI)

S1 Conduct of Security and Safeguards Activities (92904, 93702)

S1.1 General Comments

During routine tours, the inspectors verified that security posts were properly staffed, protected area gates and vital area access points were locked or guarded, and isolation zones were free of obstructions. In general, access controls were in accordance with the Nine Mile Point Security Plan.

S1.2 Unusual Event - Discovery of a Suspicious Package

a. Inspection Scope

The discovery of a suspicious looking package inside of the protected area perimeter resulted in the declaration of an Unusual Event at NMP2.

b. Observations and Findings

On August 18, 1997, a NMP security guard noticed a suspicious looking package next to the NMP2 maintenance building. As a precaution, the NMP2 SSS ordered the maintenance and operations buildings evacuated. Shortly thereafter, plant security personnel examined the package and determined that it was an empty box, that had apparently blown out of a nearby trash receptacle.

Concurrent with security personnel examining the package, the SSS reviewed the NMP2 Emergency Plan and procedures. The SSS declared an Unusual Event, based on EPIP-EPP-02, Attachment 1, "Emergency Action Level Matrix / NMP2," Revision 6, Category 8.1.1: "Any security event which represents a potential degradation in the level of safety of the plant." After security personnel determined that the package was not a threat, the SSS terminated the event.

The inspectors considered the response of the security personnel to be acceptable. The actions by the SSS for the emergency declaration, and termination, were appropriate and timely. The required notifications to the NRC and state/local officials were in accordance with the NMPC Emergency Plan.

c. Conclusion

The response of the Nine Mile Point security personnel to a "suspicious looking" package was acceptable. The declaration, by the SSS, of an Unusual Event was appropriate and in accordance with the NMP2 Emergency Plan.

F2 Status of Fire Protection Facilities and Equipment (71750, 92904)

F2.1 Control Room Fire Suppression System and Operator Response

a. Introduction

In response to a recent event at another nuclear power station, the inspectors reviewed the current fire suppression systems installed for both NMP1 and NMP2 control rooms. This included a review of TSs, applicable procedures, and surveillance tests. The inspectors discussed the issues with fire protection supervisors from both units.

Background

On August 7, 1997, an inadvertent actuation of the halon fire suppression system occurred in the control room and adjacent central alarm station (CAS) at the Haddam Neck Nuclear Power Station. Personnel evacuated both areas, the control room was unmanned for about one hour; the licensee declared an Unusual Event. Just prior to the actuation, personnel were taking photographs of the halon actuation panel. Preliminarily, the licensee determined that the inadvertent actuation was due to the camera flash causing the fire detection system to actuate.

b. Observations and Findings

The inspectors discussed the general area fire suppression systems for both control rooms with the Nine Mile Point fire protection supervision. Neither control room has an automatic fire suppression system; they must be manually actuated. Fire extinguishers have been staged at several locations within the control rooms, both carbon dioxide and water types. Also, several manual hose stations were located outside each control room. Both control rooms have general area ionization-type smoke detectors in the overhead and inside the control panels, the detectors are for alarm only.

The NMP1 auxiliary control room (relay room located below the main control room) also has alarm-only ionization detectors inside relay-and-control panels. However, the NMP1 auxiliary control room also has an automatic cross-zoned total-flooding halon system actuated by ionization detectors located in the overhead. Cross-zoned systems require a signal from at least one detector in two different zones to automatically actuate the system. The NMP1 auxiliary control room is separated from the main control room by a fire door, and all penetrations are sealed. At NMP2, the under-floor area of the control room has an automatic cross-zoned total-flooding halon system. The detection in this case is both ionization and thermal detection. One of each detector type must be actuated for halon suppression to initiate. At NMP2, the under-floor area has access panels that are covered by carpet.

With the assistance of operations personnel, the inspectors reviewed the fire suppression and detection systems in each control room, and identified no discrepancies. The inspectors discussed with the SSSs for both units and the fire protection supervision to determine whether, in their opinion, actuation of the total-flooding halon systems would require control room evacuation. Although the possibility existed for halon to seep into the control rooms, the leakage rate would be slow and inhibited by the previously discussed barriers. The fire protection supervisor stated that the potential for a distressful atmosphere would exist only if the halon concentration became high or if it was breathed for an unextended period of time. In both cases, halon system initiation should not affect control room habitability to the extent that evacuation would be required. However, if necessary, both units have procedures in place for control room evacuation. Without a general area automatic fire suppression system specifically located in either control room,

the inspectors concluded that the concern associated with the Haddam Neck event did not exist at Nine Mile Point.

Although there was no procedural guidance specifically directing operators to don self-contained breathing apparatus (SCBA), there could be situations when the use of SCBAs by control room personnel would be necessary for short periods of time. At both units, most control room personnel were trained and qualified to use SCBAs; however, the SCBAs are primarily used by fire brigade members. The number of SCBAs and the number of spare bottles were specified in an Emergency Plan Maintenance Procedure. The equipment is surveilled monthly by fire protection personnel to verify that the required number of usable SCBAs exist. The inspectors walked down the locations with fire protection personnel and reviewed the applicable surveillance procedures to ensure that routine verifications were being conducted. If the control room staff needed to don SCBAs, there appeared to be a sufficient quantity of SCBAs onsite. The SCBAs, however, may need to be obtained from locations other than directly outside the control room.

c. Conclusions

The inspectors noted that the concern associated with the Haddam Neck automatic fire suppression system actuation did not exist at Nine Mile Point. Plant personnel appeared trained and equipped to combat a control room fire. Additionally, procedures were in place should personnel evacuation of the control room be required.

V. MANAGEMENT MEETINGS

X1 Exit Meeting Summary

At periodic intervals, and at the conclusion of the inspection period, meetings were held with senior station management to discuss the scope and findings of this inspection. The exit meetings for specialist inspections contained within this report were conducted upon completion of their onsite inspection:

Transportation and Radwaste Program	August 15, 1997
Radiological Protection Program	August 29, 1997

The final exit meeting occurred on October 17, 1997. During this meeting, the resident inspectors findings were presented. NMPC did not dispute any of the inspectors findings or conclusions. Based on the NRC Region I review of this report, and discussions with NMPC representatives, it was determined that this report does not contain safeguards or proprietary information.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Niagara Mohawk Power Corporation

R. Abbott	Plant Manager, NMP1 (Acting)
D. Barcomb	Manager, NMP2 Radiation Protection
C. Beckham	Manager, Quality Assurance
D. Bosnic	Manager, NMP2 Operations
J. Burton	Director, ISEG
H. Christensen	Manager, Security
J. Conway	Vice President, Nuclear Engineering
G. Correll	Manager, NMP1 Chemistry
R. Dean	Manager, NMP2 Engineering
A. DeGracia	Manager, NMP1 Work Control
S. Doty	Manager, NMP1 Maintenance
K. Dahlberg	Plant Manager, NMP2 (Acting)
G. Helker	Manager, NMP2 Work Control
P. Mazzafero	Manager, NMP1 Technical Support
L. Pisano	Manager, NMP2 Maintenance
R. Randall	Manager, NMP1 Engineering
P. Smalley	Manager, NMP1 Radiation Protection
R. Smith	Manager, NMP1 Operations
R. Tessier	Manager, Training
C. Terry	Vice President, Nuclear Safety Assessment & Support
K. Ward	Manager, NMP2 Technical Support
C. Ware	Manager, NMP2 Chemistry
D. Wolniak	Manager, Licensing

INSPECTION PROCEDURES USED

IP 37551:	On-Site Engineering
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support
IP 83750:	Occupational Radiation Exposure Program
IP 86750:	Solid Radwaste Management & Transportation of Radioactive Material
IP 90712:	In-Office Review of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92700:	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92903	Followup - Maintenance
IP 92903:	Followup - Engineering
IP 92904:	Followup - Plant Support
IP 93703	Prompt Onsite Response to Events at Operating Power Reactors
TI 2515/133	Implementation of Revised 49 CFR Parts 100-179 and 10 CFR Part 71

Attachment 1

ITEMS OPENED, CLOSED, AND UPDATED

OPENED

50-410/97-07-01	NCV	Failure to evaluate catch containment as a permanent modification
50-220/97-07-02	VIO	Missed TS SR on Channel 11 control room vent radiation monitor
50-410/97-07-03	VIO	Missed TS SR on HCS instrumentation
50-410/97-07-04	NCV	Errors in calculation to support 1995 RB/TB blowout panel modification
50-220/97-07-05	NCV	Inadequate design control associated with smoke purge system and CREVS interface
50-220 & 50-410/97-07-06	EEI	Failure to maintain PCP up-to-date
50-220/97-07-07	EEI	Radioactive shipment exceeded 49 CFR 173.441 limits in occupied space of vehicle
50-220/97-07-08	IFI	Review action plan to ensure safe use of concentrates tank #1, or removal of contents
50-220/97-07-09	EEI	Shipments of radioactive materials delivered to unlicensed facilities
50-220 & 50-410/97-07-10	EEI	Shipment of wrong radioactive waste material
50-220 & 410/97-07-11	EEI	Failure to identify and correct conditions adverse to quality associated with the PCPs
50-220 & 410/97-07-12	EEI	Failure to conduct audits of suppliers of NRC-certified shipping casks
50-220/97-07-13	EEI	Failure to verify QA programs of Radwaste processing vendors

CLOSED

50-220 & 410/96-07-18	IFI	Poor material condition in several areas
50-220/96-05-02	IFI	Resolve inconsistencies in reactor building and turbine building blowout panel relief pressure values that are stated in the UFSAR and IPE
50-220/96-07-04	URI	Procedure change evaluation used to change the intent of a procedure
50-220/96-05-01	URI	Review of revised reactor and turbine building blowout panel relief pressure calculations
50-220/ EA-96-079-1013	VIO	Design control measure inadequate during calculation for establishing the reactor and turbine building relief pressure

Attachment 1

50-410/97-07-01	NCV	Failure to evaluate catch containment as a permanent modification
50-220/97-07-04	NCV	Errors in calculation to support 1995 RB/TB blowout panel modification
50-220/97-07-05	NCV	Inadequate design control associated with smoke purge system and CREVS interface
50-410/97-06	LER	Plant Shutdown due to Rising Unidentified Leakage
50-410/97-07	LER	Failure to Calibrate Hydrogen Recombiner Instruments as Required by Technical Specifications due to Procedure Omission
50-220/97-07	LER	Potential Control Room Emergency Ventilation System Operation Outside the Design Basis due to Inadequate Evaluation

UPDATED

none

LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CR	Control Room
CRD	Control Rod Drive
CREVS	Control Room Emergency Ventilation System
CRSPS	Control Room Smoke Purge System
DER	Deviation/Event Report
EA	Enforcement Action
EC	Emergency Cooling
EEI	Escalated Enforcement Item
EER	Exposure Evaluation Reports
EQ	Equipment Qualification
FME	Foreign Material Exclusion
GE	General Electric
GL	Generic Letter
GSO	General Supervisor of Operations
HCS	Hydrogen Recombiner System
HPCS	High Pressure Core Spray
HRA	High Radiation Area
IE	Inspection and Enforcement
IFI	Inspector Follow Item
IPAP	Integrated Performance Assessment Process
IPE	Individual Plant Examination
IR	Inspection Report
I&C	Instrumentation and Control

Attachment 1

kV	kiloVolt
LCO	Limiting Condition for Operation
LDCR	Licensing Document Change Request
LER	Licensee Event Report
MAAP	Modular Accident Analysis Program
MOV	Motor-operated Valve
mR/hr	milliroentgen per hour
mRem/hr	milliRem per hour
NCV	Non-Cited Violation
NMPC	Niagara Mohawk Power Corporation
NMP1	Nine Mile Point Unit 1
NMP2	Nine Mile Point Unit 2
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NVLAP	National Voluntary Laboratory Accreditation Program
PCE	Procedure Change Evaluation
PCP	Process Control Program
PID	Problem Identification
PM/ST	Preventive Maintenance/Surveillance Test
PRA	Probabilistic Risk Assessment
psf	pounds per square foot
QA	Quality Assurance
Radwaste	Radioactive Waste
RB	Reactor Building
RCA	Radiologically Controlled Area
RCIC	Reactor Core Isolation Cooling
RFO	Refueling Outage
RG	Regulatory Guide
RP	Radiation Protection
RWP	Radiation Work Permit
SAM	Small Article Monitor
SCBA	Self-contained Breathing Apparatus
SLS	Standby Liquid Control
SR	Surveillance Requirement
SRM	Source Range Monitor
SSS	Station Shift Supervisor
TB	Turbine Building
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
VIO	Violation
WO	Work Order