

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 87-18/87-37
Docket No. 50-220/50-410
License No. DPR-63/NPF-69 Category B
Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York. 13212
Facility: Nine Mile Point, Units 1 and 2
Location: Scriba, New York
Dates: August 31, 1987 through October 4, 1987
Inspectors: W.A. Cook, Senior Resident Inspector
C.S. Marschall, Resident Inspector
W.L. Schmidt, Resident Inspector

Approved by:

Jon R. Johnson
J.R. Johnson, Chief, Reactor
Projects Section 2C, DRP

10/29/87
Date

INSPECTION SUMMARY

Areas Inspected: Routine inspection by the resident inspectors of station activities including Unit 1 power operations and Unit 2 power ascension testing, licensee action on previously identified items, plant tours, safety system walkdowns, LER review, Technical Specification interpretation reviews, Unit 1 licensing submittals, and Scram Discharge Volume reviews. This inspection involved 232 hours by the inspectors which included 35 hours of backshift inspection coverage. Backshift inspections were conducted on 8/31-9/4, 9/7-9/11, 9/14-9/18, 9/21-9/25 and 9/28-10/2.

Results: One violation was identified during this inspection period. The violation concerns a failure to meet 10 CFR 50 Appendix R and the Fire Protection Program requirements and is discussed in section 3.2. Two licensee identified violations are discussed in sections 1.2.h and 1.2.j. One involved failure to perform instrumentation surveillance checks once per shift (for reactor building and main steam tunnel area temperature, and LPCI pumps A, B, and C pressure permissives for ADS). The other involved failure to take 12-hour grab samples when drywell radiation monitors were out of service.

8711040379 871029
PDR ADDCK 05000220
PDR
Q



DETAILS

1. Review of Plant Events

1.1 UNIT 1

Throughout the inspection period the unit operated at approximately 89.5 percent power. On September 8, the unit surpassed the previous record for days of continuous operation for a domestic BWR (Millstone Unit 1) of 378 days.

On September 4 and 17, the unit process computer failed and the licensee notified the NRC via the Emergency Notification System (ENS) that their emergency assessment capability was degraded and that compensatory actions were initiated. The inspectors verified that licensee response and corrective actions were appropriate.

1.2 UNIT 2

During this inspection period, the licensee conducted power ascension testing and was involved in a short outage to make unit modifications and correct identified systems problems. The following events occurred:

- a. On September 2 the licensee initiated a shutdown to comply with a Technical Specification limiting condition for operation because of missed surveillance testing of the Standby Gas Treatment System. The circumstances surrounding this event were reviewed and documented in a special inspection report (IR No. 50-410/87-32). An Enforcement Conference was conducted to address the violations identified in that report.
- b. On September 3 an automatic isolation of the reactor water cleanup (RWCU) system occurred while conducting a unit cooldown. The licensee attributes the high delta flow isolation signal to flashing in the reject flow transmitter sensing line as reactor pressure was decreased. The inspector determined that the engineering staff is investigating this and other RWCU system problems.
- c. On September 9 the licensee identified, during preparations for local leak rate testing of main steam line drain valves, that a Main Steam Group 1 full isolation signal (Nuclear Steam Supply Shutoff System, NSSSS) was inserted without operator knowledge. The full isolation signal was inserted during a surveillance test conducted earlier in the day, however, because the main steam isolation valves were already closed and the NSSSS isolation signals do not have an audible annunciator, this condition was not known to the shift operators. The NSSSS isolation was printed on the computer alarm printer, but there is no associated audible alarm.



The inspectors determined that the licensee has initiated a modification request to provide NSSSS isolation signal audible annunciation and has revised the surveillance test procedure to accurately reflect plant impact.

- d. On September 16 and 21, the shutdown cooling system received automatic isolations. Both events involved personnel error while performing a surveillance test. The September 16 isolation was caused by the technician lifting the wrong lead. The September 21 isolation was caused by the failure of the technician to follow the procedure. The inspectors will review the licensee's corrective actions for both these events in a subsequent inspection.
- e. On September 17, while the unit was shutdown, an inadvertent main steam isolation valve isolation signal occurred due to personnel error. An engineer installed test leads without verifying proper plant conditions and receiving permission from the Station Shift Supervisor. Corrective actions will be reviewed in a subsequent report.
- f. On September 25, the licensee declared the effluent radiation monitors for the main stack and reactor building/radwaste building vent inoperable. The licensee made this determination after identifying that the common annunciator for these radiation monitors does not have a reflash, if more than one of the four alarm conditions occurs. The licensee has initiated a modification request to correct this condition.
- g. On September 28, the licensee determined that 9 of 37 offsite emergency notification sirens were inoperable and notified the NRC of this degraded Emergency Response Notification System condition. The sirens were apparently damaged during a thunderstorm which passed through the area the evening before. Licensee engineering staff are investigating a sensitivity problem with the siren solid state monitoring system.
- h. On September 30, the licensee identified that they had not been performing five different shift surveillance checks since initial unit operation. The Technical Specification (TS) surveillance shift checks involved verification of the following: reactor building area high temperature; main steam tunnel area high temperature; and low pressure core injection (LPCI) pumps A, B, and C Automatic Depressurization System high pressure permissive interlock.

A Notice of Violation is not being issued for these TS surveillance violations in accordance with Enforcement Policy guidance provided in 10 CFR 2, Appendix C. These missed surveillance checks were identified by the licensee and promptly reported to the NRC. The violation could not reasonable have been prevented by licensee corrective actions for a previous violation related to TS surveillance testing. The corrective action taken for these missed



surveillance checks was timely and included a comprehensive page by page review of the TS surveillance requirements and a verification that the corresponding surveillance procedures adequately tested the operability of the component or system. NO VIOLATION ISSUED (50-410/87-37-01)

- i. On October 1, a reactor scram occurred on intermediate range neutron monitor (IRM) upscale trip. Reactor pressure was 500 psig and power was approximately 2% prior to the trip. The IRM upscale trip was caused by the inadvertent overfeeding of the reactor and subsequent power excursion. Operators had started a second condensate booster pump in preparation for placing a feedwater pump in service, when they identified that the booster pump minimum flow control valve was slow to open. While investigating the slow opening of the minimum flow control valve, reactor vessel level started decreasing. The operators overcompensated for the level drop by opening the reactor feedwater pump bypass valve. This action caused a rapid level rise and associated power excursion due to the introduction of cooler moderator. The inspectors reviewed licensee corrective actions which include procedural changes and operator training, and determined them to be adequate.
- j. On October 1, the licensee determined, based on a licensing interpretation of apparent conflicting Technical Specifications, that between May 29 and July 29, 1987 numerous surveillances were missed while drywell gaseous and particulate radioactivity monitors were out-of-service. The Technical Specifications (TS) for Leakage Detection Systems require that a 24 hour grab sample be taken if either a gaseous or particulate radioactivity monitor is out-of-service. However, the Operational Leakage TS surveillance requirements state that reactor coolant system leakage shall be demonstrated to be within the limits by monitoring the primary containment airborne and gaseous radioactivity at least once per 12 hours.

The licensee has concluded that during the period of May 29 to July 29, while either a gaseous or particulate monitor was out-of-service, they should have taken 12 hour grab samples vice 24 hour grab samples and were operating in violation of the Operational Leakage surveillance requirements.

A Notice of Violation is not being issued for this TS surveillance violation in accordance with Enforcement Policy guidance provided in 10 CFR 2, Appendix C. The missed surveillance was identified by the licensee and promptly reported to the NRC. The violation could not reasonably have been prevented by licensee corrective actions for a previous violation related to TS surveillance testing. The corrective action taken for this TS surveillance oversight was to immediately comply with the surveillance requirement and provide



clarification to the station operators to prevent future problems. The inspectors note that the TS requirements are inconsistent and need revision. NO VIOLATION ISSUED (50-410/87-37-02)

The inspectors verified that the licensee made the appropriate Emergency Notification System reports for the events discussed above. No reporting requirement deficiencies were noted.

2. Followup on Previous Identified Items

2.1 Unit 1

- a. (Closed) INSPECTOR FOLLOWUP ITEM (50-220/82-09-09): Missed annual hydrostatic testing of fire hoses per N1-FST-A1. When this item was first identified in 1982, the inspector could not verify that the fire hoses had been tested since November 1980. The licensee is conducting a search for these records, however, the inspector determined that the licensee has been conducting annual testing of the fire hoses since 1982, and is appropriately tracking this surveillance requirement. This item is closed.
- b. (Closed) INSPECTOR FOLLOWUP ITEM (50-220/86-10-01): Split sample comparison with Brookhaven National Laboratory. During an earlier inspection, the inspector obtained split water chemistry samples for analysis by Brookhaven National Laboratory (BNL). The results of the BNL analyses indicate generally good agreement with the licensee's sample results. This item is closed.
- c. (Closed) UNRESOLVED ITEM (50-220/87-13-01): Access controls for the Unit 1 storeroom. During this inspection period, the inspectors concluded that there were no clear procedural or regulatory requirements violated pertaining to access controls to the Unit 1 storeroom. The inspectors did note that access control procedures for the storeroom are vague and that station personnel are not provided clear guidance for ensuring authorized personnel access and for properly securing storeroom doors. The licensee committed to review and revise, if appropriate, the storeroom access control procedures. The inspectors will review the licensee's corrective actions in a subsequent report period.

2.2 Unit 2

- a. (Closed) TMI ITEM (50-410/86-29-03): TMI ACTION PLAN ITEM II.E.4.2, Containment Isolation Dependability. During a previous inspection period (ref: Inspection Report No. 50-410/86-42), this item was reviewed and left open pending inspector review of completed surveillance procedure N2-RSP-RMS-R103, Channel Calibration Test of SBT System Exhaust Process Radiation Monitor. The inspector reviewed N2-RSP-RMS-R103, completed October 14, 1986, and verified proper operability testing of the containment purge system isolation function. This TMI item is closed.



- b. (Closed) INSPECTOR FOLLOWUP ITEM (50-410/87-09-01): Review licensee corrective actions for discrepancies noted by the inspector during an earlier walkthrough of the Division 2 Emergency Diesel Generator (EDG) space. With one exception, the inspector determined that licensee corrective actions were adequate. A change was made to the EDG operating procedures to ensure that logs of EDG run times and cylinder temperatures be taken in accordance with the vendor manual. However, the inspector determined that the vendor manual also recommends that a complete set of operating logs be taken every eight hours the EDG is running. In addition, the manual states that any reading that is outside the specified limits shall be evaluated immediately. The licensee committed to review the vendor manual operating log recommendations. This item is administratively closed but will also be reviewed during future routine inspections of the facility.
- c. (Closed) UNRESOLVED ITEM (50-410/87-12-01): Review reportability of NAMCO limit switch deficiencies. This item was left unresolved pending licensee review of the reportability of problems identified by the licensee during receipt inspection of NAMCO limit switch assemblies. The inspector reviewed NEL-029-1 Report No. P87-019, dated May 28, 1987. The licensee concluded in this report that the NAMCO limit switch deficiencies were not reportable per 10 CFR 21. The inspector agreed with the licensee's reportability determination. This item is closed.

3. Plant Inspection Tours

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

3.1 Unit 1

During plant tours, the inspector observed only slight improvement in overall housekeeping since the previous inspection period. These observations were discussed with station management and the inspector was assured that action was being taken. The inspectors will continue to closely monitor station housekeeping practices.

No violations were identified.

3.2 Unit 2

- a. On September 1, 1987, during a walkdown of the safety related electrical panels, the inspector identified that none of the valves required to be disabled during normal operation were deenergized per the unit Fire Protection Program. At the time of the inspector's walkdown, the reactor was in the RUN mode operating at approximately 40 percent power. These valves (thirteen high/low pressure interface valves) are required to be shut and electrically disabled



to prevent the inadvertent opening of the valve in the event of a hot short induced during a fire. The consequences of one of these valves opening is a potential loss of coolant accident. This condition was immediately brought to the attention of Operations management on September 1 and action was taken to tag and deenergize the valves.

The Fire Protection Program's Fire Hazard Analysis, contained in section 9B of the FSAR, defines in Table 9B.5-1 the 13 valves required to be deenergized and disconnected from their power source during normal plant operations. Supplement 2 of the Safety Evaluation Report (SSER-2), section 9.5.1.4 (2), also states that these valves shall be deenergized during power operations. The NRC considers normal operation or power operation as defined by Technical Specifications, as the condition when the mode switch is in RUN. Failure to have these 13 valves deenergized during power operations in accordance with the requirements of the Fire Protection Program is a violation. VIOLATION (50-410/87-37-03)

While reviewing the circumstances surrounding this event, the inspector noted that N2-OP-101A, the Plant Startup procedure, requires the tagging and deenergizing of these 13 valves. The step to ensure that the valves were closed and deenergized was the first step in the section titled "Increasing Power to Rated". This procedure step was not signed off while steps further on in the procedure were completed and signed-off. The inspector determined that this step was not completed because Operations management considered the Plant Startup procedure a guideline for unit startup and that it is not intended to be followed in step by step fashion. The inspector brought this to the attention of station management and they agreed to review their procedural adherence policy with respect to their commitment to Regulatory Guide 1.33 and ANSI N18.7/ANS-3.2, Administrative Controls and Quality Assurance for Operational Phase of Nuclear Power Plants.

- b. The control room environment and operator professionalism continues to be closely monitored by the inspectors. Conduct of operators during the performance of power ascension testing has been good. The loss of offsite power test was handled well with good communications and coordination. Shift turnovers have been quiet with good panel walkdowns. No unacceptable practices were observed this inspection period.

4. Review of Licensee Technical Specifications Interpretations - Unit 2

During this inspection period, the inspectors reviewed two Technical Specification (TS) interpretations generated by the corporate Licensing staff and provided to the Unit Superintendent. The inspectors had the following comments on the TS interpretations reviewed:

- a. TS 3.4.3.1 Limiting Condition for Operation (LCO) for Reactor Coolant System Leakage. This TS requires that three available methods of monitoring leakage in primary containment be operable.



The three monitoring systems are a gaseous airborne radioactivity monitor, a particulate airborne radioactivity monitor, and the drywell equipment and floor drain leakrate monitoring system. With only two of the required leakage detection systems operable, plant operation may continue for up to 30 days provided grab samples of the drywell atmosphere are taken and analyzed once per 24 hours when the required gaseous and/or particulate radioactive monitoring system is inoperable. Otherwise, the plant shall be in Hot Shutdown within 12 hours and Cold Shutdown within 24 hours. The action statement appears to be silent on compensatory action for the leakrate monitoring system being inoperable.

The Licensing interpretation states that, if the drywell leakage monitoring system becomes inoperable, operation of the unit for up to 30 days is permissible provided monitoring of drywell floor drain and equipment drain tanks is performed every 12 hours in accordance with TS surveillance requirement 4.4.3.2.1.b. The inspectors agree with this interpretation, pending further review by the NRC staff (also see associated licensee identified violation in section 1.2.j). This interpretation was discussed with station management and the inspectors determined that, if the instruments which give the instantaneous readout of drywell leakage became inoperable, the tank level instruments and pump run times could be used to determine the drywell leakrates. The licensee stated that these alternate methods of determining drywell leakage rates would be proceduralized. The inspectors also noted that this practice is consistent with the methods used at Unit 1.

- b. Standby Gas Treatment System TS surveillance 4.6.5.3.c. This surveillance requires that after 720 hours of operation a sample of the Standby Gas Treatment (SBGT) train charcoal adsorber medium be drawn and analyzed within 31 days.

The Licensing interpretation stated that, if the maximum allowable surveillance frequency of 900 hours was exceeded without drawing a sample, the SBGT train would be declared inoperable, but could be returned to an operable status when the sample was taken. The inspectors disagreed with this interpretation. This concern was discussed with the Unit Superintendent and the Operations Superintendent. They agreed that the interpretation was incorrect and that the train could not be returned to an operable status until the sample was analyzed and the charcoal adsorber found suitable for continued use. They immediately issued a revision to the interpretation.

During this and previous reporting periods, the inspectors have reviewed the licensee's practices for initiating and implementing TS interpretations. The inspectors have observed that interpretations typically do not receive broad station management review prior to implementation. The Unit 2 Superintendent stated that a program was



being developed to ensure more thorough management review of TS interpretations prior to their issuance. The inspectors will continue to monitor the issuance of TS interpretations in subsequent inspections.

No violations were identified.

5. Safety System Operability Verification

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

5.1 Unit 1

- Reactor building emergency ventilation
- Emergency diesel generators
- Control rod drive system

5.2 Unit 2

- Emergency diesel generators
- Residual heat removal systems

No unacceptable conditions were noted.

6. Review of Licensee Event Reports (LERs)

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

Unit 1

The following LER was reviewed and found to be satisfactory:

- LER 87-13, Reactor Building Emergency Ventilation initiation caused by relay failure, August 2, 1987.

7. Assurance of Quality : Review of Licensing Submittals - Unit 1

During this inspection period, the licensee submitted two licensing requests which were reviewed by the inspectors. The inspectors conducted a qualitative review of these submittals and presented their comments to the licensee and to the NRC staff technical reviewers via the project manager. The two submittals, NMP1L 0178 and NMP1L 0179, were signed August 25, 1987 and involved a Technical Specification change request and



a request for relief from an ASME Code piping repair, respectively.

The inspectors noted that both submittals provided summary type technical justifications for the requests. Although the inspectors could not identify specific regulatory or ASME Code prohibitions to the requests, the technical basis and supporting engineering evaluation for the requests were not clearly stated or referenced. The inspectors determined from discussions with the licensee that there was additional supporting information and technical justification for the requests, but that this information was purposefully excluded from the submittals. The licensee informed the inspectors that they typically do not present that information until specifically requested by the NRC staff reviewer.

Although no violations of regulatory requirements were identified, the inspectors will continue to monitor the quality of licensing submittals.

8. Review of the Scram Discharge Volume Design - Unit 2

On June 28, 1980, during a routine shutdown of the Browns Ferry Unit 3 reactor, a manual scram from about 36% power failed to insert approximately 40% of the control rods. The cause of this event was isolated to a problem with the scram discharge volume header. Followup to this event at other BWRs revealed a number of deficiencies that were discovered with the scram discharge headers.

During December 1980, the NRC issued a Generic Safety Evaluation for BWR Scram Discharge Volumes (SDV). In this evaluation, the NRC established criteria for the design and testing of scram discharge volumes. The licensee has incorporated this design and testing criteria into the Unit 2 systems as discussed in the Unit Final Safety Analysis Report (FSAR), section 4.6.

Unit 2 has two banks of Hydraulic Control Units (HCUs) each containing approximately one half of the total. Each bank of HCUs has its own SDV and SDV Instrument Volume (SDIV). The SDVs are connected to each other by the SDIV vent and drain piping. The inspector reviewed each of the Generic Safety Evaluation criteria against the as-built systems and verified that the licensee was in compliance with the Generic Safety Evaluation, as follows:

- The SDV is designed to accommodate 3.34 gallons of water per each HCU.
- An automatic scram will occur if the SDIV level reaches 46.5 inches of water as required by Technical Specification (TS) 2.2.1-1.8. Each SDIV has four level sensors which generate scram signals. The sensing lines for these instruments emanate from the vertical portion of the SDIVs. Two level sensors are differential pressure instruments which share common reference and variable leg sensing lines. The two other sensors are float-type level switches which



also share common sensing lines. The inspector verified that the SDIV level instrumentation inputs to the Reactor Protection System satisfy the redundancy and reliability criteria.

Each SDIV has two additional float switches which provide SDV high level alarm and control rod withdrawal block signals. The inspector verified that the SDV high level alarm and rod block alarm are annunciated on the control panel and that alarm response procedures were adequate. Determination of the cause of a SDV high level signal must be made at the rod drive control panel.

- TS Table 4.3.1.1-1 item 8.a. requires that a shift check, a monthly functional check and a cyclic calibration of the SDIV water level high differential pressure instruments be performed. The inspector verified surveillance procedures N2-OSP-LOG-S001, N2-ISP-RDS-M001, and N2-ISP-RDS-R101 satisfy these requirements.

TS Table 4.3.1.1-1 item 8.b. requires that monthly functional check and cyclic calibration of the SDIV water level high level switches be performed. The inspector verified that surveillance procedure N2-ISP-RDS-M002 satisfies this requirement.

- The inspector determined that the SDIV vent and drain lines flow into the reactor building equipment drain system. The inspector verified that there is no connecting piping between the vent and drain valves and the collection tank. The vent line is installed with a syphon breaker to prevent back flow to the SDIV.
- The drain line and the vent line each contain two, in series air operated (air to open) isolation valves. This configuration ensures closure of at least one valve (single failure) on a loss of instrument air. Each valve has an alarm associated with the valve not being fully open. These alarms are annunciated on the control panel. The solenoid valves, which vent the air off its associated vent and drain line isolation valves, also have position indication on the control panel.
- TS 4.1.3.1.4 requires that the vent and drain valves close within 30 seconds of a scram signal initiated from approximately 50% control rod density and that the valves reopen when the scram signal clears. The inspector verified that surveillance procedure N2-OSP-RDS-R001 satisfies this requirement. The inspector also determined that the licensee may use the scram report, generated after an automatic scram by the process computer, to verify that the valves went shut in the required 30 seconds.
- TS 4.1.3.1.1. requires that the vent and drain valves be verified open at least once per 31 days and cycled at least once per 92 days. The inspector verified that surveillance procedures N2-OSP-RDS-M001 and N2-OSP-RDS-Q001 meet these requirements.



No violations were identified.

9. Review of Licensee Response to IR No. 50-410/87-16

The inspector reviewed the licensee's response dated September 11, 1987, to the weaknesses addressed in the Operation's Readiness Team Inspection Report No. 50-410-87-16, dated August 5, 1987. The inspector conducted a followup of selected items and discussed the implementation of corrective actions with the licensee. No discrepancies were noted. The inspectors will continue to monitor licensee progress in addressing the identified weaknesses.

10. Exit Meetings

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

