U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-220/84-25

Docket No. 50-220

License No. DPR-63 Priority -- Category C

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Facility Name: Nine Mile Point Nuclear Station, Unit 1

Inspection At: Scriba, New York

Inspection Conducted: November 5 to December 31, 1984

Inspectors: _____ 1/25/85
S. D. Hudson, Senior Resident Inspector Date

_____ 1/25/85
A. J. Luptak, Reactor Engineer Date

Approved by: _____ 1/25/85
W. J. Lazarus, Acting Chief, Reactor Date
Project Section No. 2C DPRP

Inspection Summary:

Inspection on November 5 to December 31, 1984 (Report No. 50-220/84-25)

Areas Inspected: Routine, inspection by the resident inspector and one Region-based inspector (119 hours). Areas inspected included: followup on operational events, operational safety verification, physical security, plant tours, safety system verification, surveillance testing, maintenance activities, Licensee Events Reports, Bulletins, allegation followup and periodic reports.

Results: No violations were identified in the areas examined.

## DETAILS

1. Persons Contacted

J. Aldrich, Supervisor, Operations
W. Connolly, Supervisor, Q.A. Operations
K. Dahlberg, Site Maintenance Superintendent
W. Drews, Technical Superintendent
E. Leach,Superintendent of Chemistry and Radiation Management
T. Perkins, General Superintendent, Nuclear Generation
T. Roman, Station Superintendent
B. Taylor, Supervisor, Instrument and Control

The inspector also interviewed other licensee personnel during the course of the inspection including shift supervisors, administrative, operations, health physics, security, instrument and control, and contractor personnel.

2. Summary of Plant Activities

The plant operated at full power throughout the inspection period except for a plant shutdown on November 11 due to a turbine control oil leak and on December 16 due to a leaking master scram valve.

3. Follow up on Operational Events

a. On November 11, the plant was shutdown due to a turbine control oil leak. Following repairs, a normal reactor start-up was performed on November 12 with the reactor critical at 10:47 p.m. On November 13, at 6:25 a.m., a reactor scram occurred from 1% power at 865 psig reactor pressure. The cause of the scram appeared to be a malfunction in the mechanical pressure regulator which caused the turbine bypass valves to cycle open and closed. The resulting reactor water level oscillation caused the reactor to scram on low water level.

The inspector reviewed the licensee post scram analysis and computer alarm typer print-out and verified that all safety systems responded properly. The inspector also witnessed a portion of the reactor start-up performed on November 13 and determined that it was conducted in accordance with approved procedures. The turbine generator was placed on line at 12:30 a m. on November 14. The inspector noted that the above event was properly reported to the NRC in accordance with 10 CFR 50.72.

b. On December 16, the plant was shutdown due to excessive air leakage from control rod drive (CRD) scram air header. During routine surveillance testing, it was observed that when a scram signal was present on the #11 reactor protection trip system, the CRD scram air header pressure decreased quickly.

When a scram signal was present on the #12 reactor protection trip system, the system responded normally. The licensee replaced one of the master scram solenoid valves (CRD-43) and repaired numerous small air leaks on scram valves and connecting air piping. The inspector witnessed the successful post maintenance testing following the replacement of the master scram solenoid valve.

The reactor was started up at 10:17 p.m. on December 18 and the turbine generator was placed on line at 10:05 a.m. on December 19. The inspector noted that this event was properly reported to the NRC in accordance with 10 CFR 50.72.

4. Operational Safety Verification

a. Control Room Observation

Routinely throughout the inspection period, the inspector independently verified plant parameters and equipment availability of engineered safeguard features. The following items were observed:

--Proper control room manning and access control;

--Adherence to approved procedures for ongoing activities;

--Proper valve and breaker alignment of safety systems and emergency power sources;

--Reactor control panel instrumentation and recorder traces;

--Reactor protection system instruments to determine that the required channels are operable;

--Stack gas monitor recorder traces;

--Core thermal limits;

--Shift turnover

b. Review of Logs and Operating Records

The inspector reviewed the following logs and instructions:

--Control Room Log Book

--Station Shift Supervisor's Log Book

--Station Shift Supervisor's Instructions

--Reactor Operating Log Book

The logs and instructions were reviewed to:

--Obtain information on plant problems and operation;

--Detect changes and trends in performance;

--Detect possible conflicts with Technical Specifications or regulatory requirements;

--Access the effectiveness of the communications provided by the logs and instructions; and

--Determine that the reporting requirements of Technical Specifications are met.

No violations were identified.

5. Observation of Physical Security

The inspector made observations to verify that selected aspects of the plant's physical security system were in accordance with regulatory requirements, physical security plan and approved procedures. The following observations relating to physical security were made:

--The security force was properly manned and appeared capable of performing their assigned functions.

--Protected area barriers were intact - gates and doors closed and locked if not attended.

--Isolation zones were free of visual obstructions and objects that could aid an intruder in penetrating the protected ares.

--Persons and packages were checked prior to entry into the protected area.

--Vehicles were properly authorized, searched and escorted or controlled within the protected area.

--Persons within the protected area displayed photo badges, persons in vital areas were properly authorized, and persons requiring an escort were properly escorted.

--Compensatory measures were implemented during periods of equipment failure.

No violations were identified.

6. Plant Tours:

During the inspection period, the inspector made frequent tours of plant areas to make an independent assessment of equipment conditions, radiological conditions, safety and adherence to regulatory requirements. The following areas were among those inspected:

--Turbine Building

--Auxiliary Control Room

--Vital Switchgear Rooms

--Cable Spreading Room

--Diesel Generator Rooms

--Reactor Building

The following items were observed or verified:

a. Radiation Protection:

--Personnel monitoring was properly conducted.

--Randomly selected radiation protection instruments were calibrated and operable.

--Radiation Work Permit requirements were being followed.

--Area surveys were properly conducted and the Radiation Work Permits were appropriate for the as-found conditions.

b. Fire Protection:

--Randomly selected fire extinguishers were accessible and inspected on schedule.

--Fire doors were unobstructed and in their proper position.

--Ignition sources and combustible materials were controlled in accordance with the licensee's approved procedures.

--Appropriate fire watches or fire patrols were stationed when equipment was out of service.

c. Equipment Controls:

--Jumper and equipment mark-ups did not conflict with Technical Specification requirments.

--Conditions requiring the use of jumpers received prompt licensee attention.

--Administrative controls for the use of jumpers and equipment mark-ups were properly implemented.

d. Vital Instrumentation:

--Selected instruments appeared functional and demonstrated parameters within Technical Specification Limiting Conditions for Operation.

e. Radioactive Waste System Controls:

--Gaseous releases were monitored and recorded.

--No unexpected gaseous releases occurred.

f. Housekeeping:

--Plant housekeeping and cleanliness were in accordance with approved licensee programs.

In October 1984, the inspector observed a noticeable improvement in the level of cleanliness throughout the station.

g. Equipment Condition:

On November 29, the inspector noticed an oil leak on a hydraulic snubber (39-HS-24) for the emergency condenser system. The hydraulic reservoir for the snubber also appeared to the low. The licensee functionally tested a new snubber and then installed it in place of the leaking one. The inspector verified that the licensee functionally tested the leaking snubber in the as-found condition and determined that it was operable. The original snubber was rebuilt for future use.

No violations were identified.

On November 27, the inspector noticed that module #80-59C in the auxiliary control room was disconnected. This defeated the control room annunciator for containment spray water temperature from containment spray heat exchanger #121. The control room indicator and computer alarm point for this parameter would still be operable. After the inspector informed the shift supervisor, it was immediately restored to service. There was no maintenance or calibrations in progress in the cabinet where the module is located, but a modification had been recently installed in an adjacent cabinet.

The inspector had no further questions in this area.

7. Safety System Operability Verification

On a sampling basis, the inspector directly examined selected safety system trains to verify that the systems were properly aligned in the standby mode. This examination included:

-- Verification that each accessible valve in the flow path was in the correct position by either visual observation of the valve or remote position indication.

-- Verification that power supply breakers were aligned for components that must actuate upon receipt of an initiation signal.

-- Visual inspection of the major components for leakage, proper lubrication, cooling water supply, and other general conditions that might prevent fulfillment of their functional requirements.

-- Verification by observation that instrumentation essential to system actuation or performance was operational.

During this inspection period, the following systems were examined:

-- Containment Spray System

-- Containment Spray Raw Water System

-- Emergency Ventilation System

-- Emergency Service Water System

No violations were identified.

8. Surveillance Testing

The inspector witnessed the performance of selected surveillance to verify that:

-- Surveillance procedures conformed to technical specification requirements and were properly approved.

-- Test instrumentation was calibrated.

-- Limiting conditions for operations for removing equipment from service were met.

-- Surveillance schedule was met.

-- Test results met technical specification requirements.

-- Appropriate corrective action was initiated, if necessary.

-- Equipment was properly restored to service following the test.

The following tests were included in this review:

-- ISP-RPS-TP, "Reactor Protection System - Auto Trip System Instrument Channel Test" performed on low-low reactor pressure instrument #36-08A on November 16, 1984.

-- ICP-80, "Containment Spray System Flow and Pressure" performed on containment spray flow transmitter #112 on November 20, 1984.

-- IMP-NEV-2, "Intermediate Range Monitor Instrument Channel Calibration" performed on channel #13 on November 28, 1984.

-- ISP-RPS-TP, "Reactor Protection System - Auto Trip System Instrument Channel Test" performed on low-low reactor vessel level instruments #36-04 A&B on December 21, 1984.

No violations were identified.

9. Licensee Action on I.E. Bulletins

a. I.E. Bulletin 83-06, "Nonconforming Material Supplied By Tube-Line Corporation Facilities at Long Island City, New York; Houston, Texas; and Carol Stream, Illinois.

The licensee obtained two stainless steel flanges that were manufactured by Tube-Line's Carol Stream, Illinois facility. At the time of the licensee's response, these flanges were not installed. They have since been installed on drywell penetrations for use on the recirculation pump automated monitoring system.

The inspector reviewed an internal memo from a licensee staff engineer dated November 3, 1983 which certified that the chemical and physical properties of the flanges met all requirements of SA182, Grade 304L and that they had also been properly heat treated in accordance with Regulatory Guide 1.44. This Bulletin is closed.

The flanges were supplied to the licensee by a vendor (D.G. O'Brien, Inc.) as part of drywell electrical penetration (X-E 193). The licensee's purchase requisition #843977 dated April 15, 1983, specified a loss of coolant accident pressure of 35 psig. While this is the pressure used for electrical equipment environmental qualifications, the design pressure of the drywell is 62 psig. This pressure (62 psig) should be used when performing structural analysis of drywell penetrations. The purchase requisition should have specified both values and clearly stated when each should be used. The penetration supplied by the vendor was compared to its standard design of 65 psig. D.G. O'Brien Report #ER323 documents that comparison and

concluded that the penetration can be safely used at Nine Mile Point, Unit 1. D.G. O'Brien Report #324 provided the structural calculations which demonstrated that none of the components in the penetration assembly would be overstressed at 35 psig. When informed of the error, the licensee recalculated the stress using a pressure of 62 psig. It was found that the penetration assembly was still within acceptable stress limits. The licensee's has also requested the vendor to independently confirm its stress calculations.

The licensee is currently revising its engineering procedures to provide a set of standard design parameters for use in design and purchasing of materials. Currently it is the responsibility of the engineer to establish the correct list of design values. This formalized process will help prevent future errors of this type. The licensee estimates completion of this program by June, 1985. The licensee's actions and the vendor's calculations will be reviewed during a future inspection (50-220/84-25-02).

b. I.E. Bulletin 84-02 "Failures of General Electric Type HFA relays in Class 1E safety systems"

The inspector reviewed the following procedures:

EPM-M2 - "Monthly surveillance of reactor trip bus HFA relays for IEB 84-02"

ISP-RPS-TP - "Reactor Protection System - Automatic Trip System Instrument Trip Channel Test/Calibration"

ST-M7 "Main Steam Line Isolation Valve HFA Relay Operability Test"

The procedures were reviewed to ensure the appropriate HFA relays were periodically inspected and tested per IEB 84-02. No deficiencies were noted. The licensee plans to replace the HFA relay coils during the next refueling (Spring 1986). This Bulletin is closed.

c. I.E. Bulletin 83-08 "Electrical Circuit Breakers with an Undervoltage Trip feature in use in safety-related applications other than reactor trip systems"

The licensee's response dated March 1, 1984 stated Westinghouse type DB or DS or General Electric Type AK-2 breakers with an undervoltage trip feature are not used at the station. This bulletin is closed.

d. I.E. Bulletin 83-07 "Apparently Fraudulent Products sold by Ray Miller, Inc."

The licensee has determined that one purchase order was placed with Ray Miller, Inc. through Nisco, a contractor working on modifications to the Offgas system. The order was for eight, non-safety related,

one-half inch, stainless steel pipe caps. Three of the caps were used in the offgas system. The offgas system is not considered "important to safety" and these caps are not part of the pressure boundary. According to the licensee, the remaining caps were either discarded, removed from site by Nisco, or used in other systems not "important to safety." Considering the order was placed prior to the time of the apparent falsification, the order was not listed in Bulletin 83-07, and the order was placed as "non-safety related" the licensee has determined there is no significant impact on the safe operation of the plant due to the apparent falsification of material certifications by Ray Miller, Inc. This bulletin is closed.

10. Allegation Follow-up (84-A-0080)

On May 25, 1984, NRC, Region I received a letter from a former plant employee alleging various violations of the plant's radiation protection procedures and intimidation when he tried to enforce the procedures. Specifically he stated that: (1) he was told to overlook the mistakes of his union brothers, (2) film badges were destroyed to prevent an individual from exceeding their radiation limit, and (3) incorrect names, exit times, and total dose received were entered on the Radiation Work Permits. The allegations were based on the individual's experience while working as an access technician on the turbine floor during the spring 1984 refueling outage. The NRC requested the licensee to investigate and evaluate these allegations.

The inspector reviewed the licensee's investigation report. Nothing of significance involving public health safety or the safety of the plant personnel has yet been identified. The licensee is continuing its evaluation of the investigation. The licensee's action will be reviewed during a future inspection. (50-220/84-25-01).

11. Review of Licensee Event Reports (LER's)

The LER's submitted to NRC Region I were reviewed to determine whether the details were clearly reported, including accuracy of the description of the cause and adequacy of the corrective action. The inspector 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 and whether the reporting requirements of 10 CFR 50.73 had been met.

During this inspection period, the following LER was reviewed:

| LER No. | EVENT DATE | SUBJECT |
|---|---|---|
| 84-16 | October 1, 1984 | Automatic initiation of Reactor Building and Control Room Emergency Ventilation Systems |

No unacceptable conditions were identified.

12. Maintenance Activities

The inspector examined portions of various safety related maintenance activities. Through direct observation and review of records, he determined that:

-- These activities did not violate the limiting conditions for operation.

-- Required administrative approvals and tagouts were obtained prior to initiating the work.

-- Approved procedures appropriate to the task were used when required.

-- Appropriate radiological controls were implemented.

-- Quality control inspections were conducted as appropriate.

-- Post maintenance testing was performed.

During this inspection period, the following activities were examined:

-- Equipment qualification modification on core spray flow transmitter #12 and containment spray raw water flow transmitter #112.

-- Post maintenance testing on scram outlet valves #26-03 and 26-11.

The inspector also independently verified that the control rod drive accumulators associated with these scram outlet valves were properly restored to service.

No violations were identified.

13. Exit Interview

At periodic intervals throughout the reporting period, the inspector met with senior management to discuss the inspection scope and findings.

Based on the NRC Region I review of this report and discussions held with licensee representatives at the exit interview it was determined that this report does not contain information subject to 10 CFR 2.790 restrictions.