U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

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Region I

Report No. 50-220/81-01

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: January 16, 1981 to February 16, 1981

Inspectors: S. D. Hudson, Resident Inspector — 4/29/81 date signed

R. A. McBrearty, Reactor Inspector — 5/6/81 date signed

_____ — _____ date signed

Approved by: H. B. Kister, Chief, Reactor Projects Section No. 1C — 5/5/81 date signed

Inspection Summary:

Inspection On January 16 To February 16, 1981 (Inspection Report No. 50-220/81-01)
Areas Inspected: Routine, onsite, regular and backshift inspections by the resident inspector and one regional based inspector (96 hours). Areas inspected included: action taken on previous inspection findings, operational safety verification, physical security, plant tours, surveillance testing, radioactive waste shipment, controls on jumpers and lifting of leads, licensee action on IE Bulletin 80-17, Supplement 4, and new fuel receipt inspection.

Results: Of the nine areas inspected, no items of noncompliance were identified in seven of the areas. Four items of noncompliance were identified in two areas. (Failure to control a high radiation door, failure to follow radiation protection procedures, failure to follow procedures for installation of jumpers, and the improper removal from service of a main steam radiation monitor)

Region I Form 12
(Rev. April 77)

DETAILS

1. Persons Contacted

R. Abbott, Supervisor, Operations
J. Duell, Supervisor, Chemistry & Radiation Protection
W. Drews, Superintendent of Technical Services
E. Leach, Superintendent of Chemistry and Radiation Management
R. Raymond, Fire Protection Coordinator
T. Roman, Station Superintendent
B. Taylor, Supervisor, Instrument and Control
M. Silliman, Acting General Superintendent, Nuclear Generation

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

2. Licensee Action on Previous Inspection Findings

a. (Closed) Infraction (80-08-01): Failure to install the seal on the reactor building track bay door. The inspector verified that the removable seal on the bottom of the reactor building track bay door has been repaired and properly installed. Training in the proper replacement of the seal was also conducted with those plant personnel who may be required to use this reactor building entrance. The procedure for proper door operation was found to be posted at the door control panel.

b. (Closed) Infraction (80-08-02): Failure to maintain fire door closed.

(Closed) Unresolved Item (80-08-05): Review the need for additional administrative controls on fire doors.

(Closed) Infraction (80-13-01): Failure to maintain fire door closed due to an inoperative automatic closure device. The inspector verified that the automatic closure device identified in item 80-13-01 had been repaired. Additionally, a memorandum from the station superintendent was issued to all plant personnel stressing the importance of maintaining fire doors in their correct position. A review of lesson plans and discussions with the licensee's training representatives reveal that this topic is covered in the general employee's initial training and annually in their retraining. The licensee has also issued and implemented Operator Surveillance Test No. N1-ST-D1, "Fire Door Inspection," Revision 0, dated December 11, 1980. This test identifies all fire doors in the plant and requires a daily check that each door is in its proper position.

c. (Closed) Deficiency (80-08-04): Lifting of leads without an approved procedure. The inspector verified that the procedure for testing the Local Power Range Monitors, N1-IMP-NEU-4.1, "LPRM Detector Test," Revision 2, dated September 6, 1980 had been revised to specify the action to be taken if the detector or its leads are found to be defective. Also, a review of the requirements for installation of jumpers under conditions for which no previously approved procedure exist was completed by all shift supervisors.

d. (Closed) Infraction (80-13-02): With one emergency diesel generator out of service, a containment spray pump, which receives its emergency power from the other emergency diesel generator, was simultaneously removed from service. The inspector verified that a review of the applicable technical specification had been conducted with each operating shift in an effect to prevent recurrence.

e. (Closed) Infraction (78-20-01): Failure to follow Radiation Work Permit procedure. The inspector verified that Radiation Protection Procedure RP-2, "Radiation Work Permit Procedure," Revision 2, dated February 13, 1979 had been revised to clarify the requirements for calculating and entering the delta authorized exposure on the Radiation Work Permit and that these requirements have been incorporated into the general employee training.

3. Operational Safety Verification

a. Control Room Observation

Routinely throughout the inspection period, the inspector independently verified plant parameters and equipment availability of engineered safeguards features against a plant specific checklist to ensure compliance with the limiting conditions for operation (LCO's).

The plant specific checklist has been developed to assist the inspector in ensuring the following items are observed during control room tours:

-- Switch and valve position required to satisfy the LCO's

-- Alarms or absence of alarms

-- Meter indications and recorder values

-- Status lights and power available lights

-- Front panel bypass switches

-- Computer print-outs

-- Comparisons of redundant readings

Selected lit annunciators were discussed with control room operators to verify that the reasons for them were understood and corrective action, if required, was being taken.

Shift turnovers were observed to ensure proper control room and shift manning on both day and back shifts. Shift turnover checklists and log review by the oncoming and off-going shifts were also observed by the inspector.

The inspector noted the use of white "information tags" on several switches in the control room. The purpose of these tags is to alert operators to special precautions to be exercised prior to starting a piece of non-safety related equipment (e.g., sealing water isolated on a mechanical vacuum pump). The use of this type of tags is not specifically addressed in the administrative procedures. The licensee stated that the administrative procedure would be revised by May 1, 1981 to address the use of these tags. (50-220/81-01-01)

No items of noncompliance were identified.

b. Review of Logs and Operating Records

The inspector reviewed the following logs and instructions for the period January 16 through February 15, 1981:

-- Control Room Log Book

-- Reactor Operations Log Book

-- Station Shift Supervisor's Log Book

-- Station Shift Supervisor's Instructions

-- Licensee Event Report Log

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

-- Determine that records are being reviewed as required

-- Assess the effectiveness of the communications provided by the logs and instructions

-- Determine that the reporting requirements of technical specifications are met

No items of noncompliance were identified.

4. Observation of Physical Security

The inspector made observations and verified during regular and off-shift hours, 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 on both regular and off-shifts 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 obstructions and objects that could aid an intruder in penetrating the protected area.

-- 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-identification badges, persons in vital areas were properly authorized, and persons requiring escort were properly escorted.

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

No items of noncompliance were identified.

5. Plant Tours

a. Scope

During the course of the report period, the inspector made multiple 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

-- Yard Areas

-- Radwaste Area

-- Diesel Generator Rooms

-- Screen House

-- Reactor Building

-- Refueling Area

b. Findings

The following determinations were made:

(1) Monitoring instrumentation: The inspectors verified that selected instruments were functional and demonstrated parameters within Technical Specification limits.

(2) Radiation protection controls: The inspectors verified that the licensee's Radiation Protection procedures were adhered to at the time of observations in the following areas:

(a) Access control including tagging, posting and maintenance of step-off pads.

(b) Confirmation of licensee survey results by independent measurements.

(c) Verification that requirements of Radiation Work Permits are appropriate and are being followed.

On January 21, 1981, the inspector questioned two of the licensee's representatives of the Radiation Protection and Chemistry Department to determine if the snow plow/sander used that morning had been checked for contamination prior to release from the turbine building. They confirmed that the truck had been parked in the turbine building overnight and had not been checked prior to release as required by Radiation Protection Procedure RP-1, "Access and Radiological Control," Revision 1, dated August 25, 1980. This is an example of failure to follow radiation protection procedures. (50-220/81-01-02)

On February 11, 1981, the inspector noted high radiation gate #103 located in the turbine building elevation 261' was open and unattended. The inspector immediately shut and locked the gate and notified the licensee's radiation protection representative. A radiation survey in #12 Recombiner Room showed readings up to 2 Rem/hr @ 1" from the recombiner after cooler. This survey is documented on Radiation Survey Log Sheet #40282. The inspector independently verified these radiation measurements and also obtained measurements of 1.25 Rem/hr @ 1 ft. from the recombiner after cooler.

The inspector noted that another high radiation gate (#104) also provides access to #12 Recombiner Room. The lock on this door is an H-series which is used to control access to high radiation areas. A master key for all H-series locks is widely distributed to plant personnel qualified as "self-monitors". These personnel may enter the area as authorized by the extended radiation work permit. The inspector stated that this form of control does not meet the intent of Technical Specification 6.13.1b which states that "... the keys shall be maintained under the administrative control of the shift supervisor on duty." The licensee maintains that their present form of control is adequate because of the extensive training required for the "self-monitoring" qualification and the maintenance of a list of qualified "self-monitors" in the control room.

The failure to maintain high radiation gate #103 locked and to maintain administrative control over the keys to high radiation gate #104 by the shift supervisor on duty is a violation of Technical Specification 6.13.1b and constitutes an item of noncompliance. (50-220/81-01-03)

Additionally, there were two workers who had been working inside the gate area. Entry had been authorized by the issuance of Radiation Work Permit #3955. The inspector found that both workers had left the immediate work area and had failed to sign-out or enter their dose received for the preceeding work period on the radiation work permit, as required by Radiation Protection Procedure RP-2, "Radiation Work Permit Procedure," Revision 1, dated February 13 1979. This is another example of failure to follow radiation protection procedures. Together with the example of failure to follow RP-1, they constitute an item of noncompliance. (50-220/81-01-02)

(3) Plant Housekeeping: Observations relating to plant housekeeping identified no unsatisfactory conditions.

(4) Fluid Leaks: No significant fluid leaks were observed.

(5) Piping Vibration: No excessive piping vibrations were observed and no adverse conditions were noted.

(6) Fire Protection: The inspector verified that selected fire extinguishers were accessible and inspected on schedule, that fire doors were unobstructed and that adequate controls over ignition sources and fire hazards were maintained.

(7) System Operability: The inspector verified that selected valves in the major flow path of the Containment Spray System were in the position required by the Technical Specifications for the applicable mode and that power was available to each pump. Verification was accomplished by physical observing that each accessible or remote position indication was correct. The inspector noted a labelling error in the operating procedure drawing. Containment Spray Valves #6 and 20 are mis-labelled on the drawing but are correctly labelled in the valve line up sheets and in the plant. The licensee has initiated action to correct the drawing.

The inspector had no further questions in the areas examined.

6. Inspection Witnessing of Surveillance Tests

The inspector witnessed the performance of the following surveillance tests:

-- On January 30, 1981, "Reactor Protection System Auto Trip System Instrument Trip Channel Test/Calibration," Procedure No. N1-ISP-RPS-TP, Revision 6, dated February 8, 1980

-- On February 11, 1981, "Local Power Range Monitoring Detectors," Procedure No. N1-IMP-NEU-4, Revision 2, dated January 13, 1981

Observations were made to verify that:

-- Surveillance procedures conform to technical specification requirements and have been properly approved

-- Test instrumentation is calibrated

-- Limiting conditions for operations for removing equipment from service are met

-- Testing is performed by qualified personnel

-- Surveillance schedule is being met

-- Test results meet technical specification requirements

-- Equipment is properly restored to service following test

-- Surveillance test data is properly reviewed

The first surveillance test involved the calibration of the low-low-low reactor water level instruments. The limiting safety system setting was revised by Technical Specification Amendment No. 37 issued May 2, 1980. The set-point must be greater than or equal to 3.88 inches (indicator scale). Plant data shows that the reference zero for this scale is the bottom inside diameter of the core spray piping located at elevation 294' 6.12". Therefore, the actual water level for this set-point would be elevation 294' 10". Prior to Amendment No. 37, the set-point had been established at 7' 11" below

minimum normal water (located at elevation 302' 9"). Therefore, the set-point was established at elevation 294' 10". On the old scale this point was 127.1".

Since the actual required low-low-low reactor vessel water level was not changed (elevation 294' 10"), but only the indicating scale, the Licensing Project Manager of the Office of Nuclear Reactor Regulation and the Project Inspector for the plant agreed to a licensee request that the indicating scale on the low-low-low reactor water level meter not be changed. The resident inspector verified that the surveillance procedure specifies the correct set-point and also includes an additional correction to allow for possible instrument error due to extreme temperature conditions inside the drywell during a loss of coolant accident.

No items of noncompliance were identified.

7. Radioactive Waste Shipment

The inspector checked a shipment of radioactive waste prior to its departure from site. The shipment was designated by the licensee as shipment #01-81-050 and consisted of 6.7 curies of solidified evaporator bottoms. Specifically, the inspector verified that:

-- The shipment was properly classified as low specific activity material.

-- A radiation and contamination survey had been conducted (Radiation Survey Log Sheet #49778, dated January 21, 1981) and that applicable limits had not been exceeded.

-- An approved shipping container was used.

-- The vehicle was properly labelled as "Radioactive - LSA".

-- The Radioactive Shipment Record had been properly completed and signed.

-- The shipping container appeared to be steadily braced for transportation.

No items of noncompliance were identified.

8. Controls on Jumpers, Lifted Leads and Blocks

The inspector audited the licensee's jumper/lifted leads controls to verify that:

-- There are no conflicts with procedures or Technical Specifications

-- The licensee is actively pursuing correction of the condition requiring jumpers

-- The jumpers/lifted leads have been installed and removed properly

The inspector noted on January 26, 1981 that jumper/block log sheets #825 thru 840, involving the substitution of various LPRM inputs into an APRM channel, had been issued and installed about 1:00 p.m. on January 23, 1981. These sheets had not been signed by the individual installing the jumper, the individual verifying installation, nor the Chief Shift Operator, nor was an entry made in the Control Room Log Book concerning the installation of the jumpers as required by Administrative Procedure APN-7A, "Placement of Jumpers, Blocks, or Lifting of Leads", Revision 3, dated January 15, 1981. The failure to meet the requirements of APN-7.A constitutes an item of noncompliance (50-220/81-01-04).

On February 9, 1981, the licensee reported that relay #11K13, operated by #111 Main Steam Radiation Monitor, had been blocked to prevent it from de-energizing while trouble-shooting #111 Main Steam Radiation Monitor. This prevented the reactor protection system and the main steam isolation valve logics from receiving a signal from this instrument. This condition existed for approximately 90 minutes. During this period, the other three main steam radiation monitors and all other scram and isolation signals remained operable. However, Technical Specifications Table 3.6.2a, "Instrumentation that Initiates Scrams" and Table 3.6.2b, "Instrumentation that Initiates Primary Coolant System or Containment Isolation" states that for main steam radiation monitors the minimum number of operable instruments channels per operable trip system is two. The two separate trip systems must be operable (each with two instrument channel inputs) or placed in the tripped condition. Therefore, the inspector noted that blocking the output signal of a main steam radiation monitor without tripping the associated trip system is a violation of the limiting condition for operation without conducting the associated action statement and is considered to be an item of noncompliance (50-220/81-01-05).

It is also recognized that this item was identified by a licensee management review approximately 8 hours after the event and was promptly reported to Region I as Licensee Event Report #81-04.

Through review of LER 81-04 and discussions with the licensee and inspection of the affected equipment, the inspector determined that:

-- Appropriate corrective action was taken to restore the main steam radiation monitor to service.

-- Appropriate corrective action has been taken to prevent recurrence. This includes a review of the event with the shift personnel involved, a written reminder of this event issued to all Operations personnel, and procedural changes made to ensure that technical specifications are consulted prior to removing safety related equipment from service or installing jumpers, blocks, or lifting of leads. Planned action includes additional training for Operations and Instrument and Control Department personnel regarding technical specification requirements.

-- The licensee event report accurately describes the event.

-- The report satisfies the reporting requirements of technical specifications.

The inspector had no further questions in the areas examined.

9. Licensee Actions on IE Bulletin 80-17, Supplement 4

The inspector reviewed licensee records, interviewed licensee representatives and examined the monitoring equipment associated with the licensee's actions relative to the bulletin. This was done to ascertain compliance with bulletin requirements and licensee commitments to the NRC.

The following were included in the inspector's review:

-- Selected portions of the control room log for January 10, 1981

-- Pre-Operational Test Procedure No. 97, "Scram Discharge Header Water Level Monitoring"

-- Instrument Surveillance Procedure No. N1-ISP-44.2-1

-- Operator Surveillance Test Procedure No. N1-ST-V8, "System Test of UT Detectors on Scram Dump Volume"

The control room equipment consists of high water level annunciators and alarm lights which activate upon loss of power to the system or upon loss of signal from the SDV header inner wall. The lights are intended to monitor power input to the system and transducer to pipe coupling, and will alarm on failure of either of these parameters.

The SDV system in the reactor building includes five discharge headers, 2" diameter connected piping and a "U" tube instrument volume. A 2.25 MHz, 3/4" diameter, model WST-1 transducer is mounted to each discharge header adjacent to the 2" diameter piping connection. Each of the transducers is connected to a control instrument, model 280 Water Sleuth. The transducers and control instruments, manufactured by NDT Instruments, Incorporated, are connected to the aforementioned control room equipment.

The records confirmed that the required tests were satisfactorily performed by properly qualified personnel and that, during an unplanned reactor scram, the equipment operated satisfactorily.

Supplement 4 to Bulletin 80-17 requires that periodic surveillance tests be performed to demonstrate continued operability of the CMS during reactor operation. The required tests must be done without injecting water in the SDV. The licensee plans to perform this test on a quarterly basis. The inspector agreed that this complies with Section 5 of Supplement 4.

No items of noncompliance were identified.

10. New Fuel Receipt Inspection

The inspector observed portions of inspection of the new fuel. The inspector verified that the inspection was performed in accordance with Fuel Handling Procedure No. N1-FHP-7, "New Fuel Bundle Inspection", Revision 7, dated January 30, 1981. The inspector also reviewed training records to determine that individuals performing the inspections were qualified in accordance with Fuel Handling Procedure No. N1-FHP-7A, "Fuel Inspection Training", Revision 4, dated January 30, 1981.

No items of noncompliance were identified.

11. Exit Interview

At periodic intervals during the course of the inspection, meetings were held with senior facility management to discuss the inspection scope and preliminary findings.