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

Region I

Report No. 50-220/79-08

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 1

Inspection at: Scriba, New York

Inspection conducted: 3/8-9/79, 3/20-23/79, 3/27-30/79

Inspectors: R. A. McBrearty — 5/16/79
R. A. McBrearty, Reactor Inspector — date signed

for R. A. McBrearty — 5/16/79
E. P. Jernigan, Reactor Inspector — date signed

date signed

Approved by: L. E. Tripp — 5/16/79
L. E. Tripp, Chief, Engineering Support Section No. 1, RC&ES Branch — date signed

Inspection Summary:
Inspection on March 8-9, 1979; March 20-23, 1979 and March 27-30, 1979
Report No. 50-220/79-08
Areas Inspected: Routine, unannounced inspection of the torus modification activities, emergency condenser nozzle safe end replacement, actions relative to LER 78-07, core spray sparger inspection and the licensee's inservice inspection activities. This included review of NDE procedures, observation of NDE in progress and review of ISI data. The inspection involved 61 inspector-hours onsite by two regional based NRC inspectors.
Results: No items of noncompliance were identified.

Region I Form 12
(Rev. April 77)

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DETAILS

1. Persons Contacted

Niagara Mohawk Power Corporation

**A. W. Crittenden - Nuclear Staff Engineer
C. Gerber - Rad Waste Operations Coordinator
*F. A. Hawksley - ISI Coordinator
***G. R. Leskiw - NDE Level III
M. Meehan - Technical Assistant to Superintendent
**R. O. Norrix - Q. C. Engineer
*T. Perkins - Plant Superintendent

Chicago Bridge and Iron Company

G. Czapnik - Project Welding & QA Supervisor

General Electric Company

R. Wiese - Field Representative

Nuclear Energy Services, Inc.

E. Anderson - PT Level III
F. Carr - NDE Level III

Factory Mutual Engineering

F. Stelter - Authorized Nuclear Inspector

*denotes those present at the meeting on March 23, 1979 and at the exit interview on March 30, 1979

**denotes those present at the meeting on March 23, 1979

***denotes those present at the exit interview on March 30, 1979

2. Liquid Waste Surge Tank Corrosion

Licensee Event Report No. 78-07 was submitted to NRC:I on March 1, 1978. The report describes pinhole leaks in the 50,000 gallon aluminum liquid waste surge tank at Nine Mile Point, Unit 1. The report states that an inspection during steady state operation

found several pinhole leaks. The report further states that there were no measurable losses of liquid but leaks could be identified by dried deposit tracks on the side of the tank.

The condition was attributed to welding and grinding during assembly which reduced the wall thickness in spots to half of the 0.1875 inch nominal thickness and apparently resulted in pinhole leaks.

The inspector reviewed the following records associated with repair of the liquid waste surge tank:

- Work Request (WR) No. 7350 dated 2/27/78
- Quality Control Inspection Report (QCIR) No. 78-039 dated 3/1/78
- Memo to File dated 6/1/78 downgrading System 85 (Radwaste System) to non safety related per DP 020 - Niagara Mohawk Engineering Design Procedure for Classification of Materials & Components

The inspector noted that WR 7350 was closed out 3/29/79 after repairs to the liquid waste surge tank were completed. The repair work was completed in Janauary, 1979 by filling in the pinholes with Velodour compound.

The licensee informed the inspector that a tank liner or complete replacement of the tank are being considered as a permanent solution, but until a final decision is reached, use of the tank is limited and controlled.

The inspector stated that the corrective actions taken to date were acceptable and the inspector had no further questions at this time.

3. Emergency Condenser Safe End Repair

The licensee reported to the NRC that during a scheduled ultrasonic examination of the Safe End to elbow weld in the emergency condenser system at nozzle NRB, cracks were detected in the weld heat affected zone. The examination was done as part of the augmented inspection program for the examination of furnance sensitized stainless steel.

The inspector was informed by the licensee that the sensitized Safe End and 90^{o} elbow past nozzle N5B will be removed and replaced with non sensitized material.

General Electric Company I&SE personnel will do the work and provide QA/QC coverage. The work was not started at the time of this inspection, but is experted to be completed during the ongoing refueling outage.

The inspector advised the licensee that activities associated with the repair would be examined during a subsequent NRC inspection.

4. Inservice Inspection (ISI) Activities

a. ISI Program

The inspector ascertained that the scope of the specified inspection during the ongoing refueling outage for each component complies with the Nine Mile Point Unit 1 Technical Specification, and the procedures and acceptance criteria meet the requirements outlined in Section XI, ASME B&PV Code 1974 Edition, including the Summer 1974 Addenda.

The inspector noted that the Nine Mile Point Unit 1 was designed and constructed prior to the adoption of the ASME B&PV, Section XI Code. As a result, certain examinations stipulated by that code cannot be performed completely since the plant design does not permit access to portions of certain examination areas. In addition, components in high radiation areas or which are covered by non-removable insulation have been considered inaccessible as indicated in the Nine Mile Point Unit 1 Technical Specification, Paragraph 4.2.6.

Personnel performing nondestructive examinations are required to be qualified in accordance with ASNT-TC-1A as stipulated in Subarticle IWA-2300 of Section XI.

b. Implementing Nondestructive Examination (NDE) Procedures

The inspector selected the following NDE procedures for review to ascertain technical adequacy:

(1) 80A0835, Revision 0 - Ultrasonic examination procedure for austenitic piping and safe-end welds with augmented ISI requirements

(2) 80A2310, Revision 0 - Liquid penetrant examination procedure

(3) 80A2311, Revision 2 - Visual examination procedure

(4) 80A2319, Revision 1 - Ultrasonic examination procedure for piping butt welds and longitudinal welds

(5) 80A2321, Revision 0 - Ultrasonic examination procedures for nozzle to safe-end welds

The inspector's review included, but was not limited to, the parameters listed below for the ultrasonic and liquid penetrant examination techniques.

Ultrasonic Examination

(a) The type of apparatus including frequency range is specified

(b) The extent of coverage including beam angles and scanning surface is specified

(c) Calibration requirements including frequency and size of transducer and calibration reflectors are specified and consistent with the applicable ASME Code

(d) The reference level for monitoring discontinuities is defined and the scanning level is specified and consistent with the applicable ASME Code

(e) Acceptance limits are specified or referenced and are consistent with the applicable ASME Code

Liquid Penetrant Examination

(a) The examination method is consistent with ASME Code requirements

(b) Penetrant materials used for nickel base alloys and austenitic stainless steel are required to be analyzed for compliance with allowable residual sulfur and halogen content

(c) Examination surface requirements, including temperature limitations, are specified and consistent with ASME Code requirements

(d) Methods for removal of solvent removable penetrant are specified and consistent with the applicable ASME Code

(e) A technique for evaluation of indications is specified, acceptance standards are referenced, and are consistent with the applicable ASME Code

No items of noncompliance were identified.

c. NDE Personnel Qualification

The inspector examined records associated with the qualification and certification of NDE personnel performing examinations at Nine Mile Point Unit 1 during the ongoing refueling outage.

The records identified the examination method and level of qualification to which each individual was certified. In addition to the above, visual acuity records were reviewed for each individual and found to be current and complete.

The inspector found that the applicable requirements of the governing document, SNT-TC-1A, were met.

No items of noncompliance were identified.

d. Observation of NDE in Progress

(1) The inspector observed the ultrasonic examination of the following welds in the turbine by-pass system:

- Weld #P-03-7-W, 16" diameter pipe to ell weld
- Weld #P-03-7F-W, 16" diameter ell to pipe weld

The examinations were done in accordance with procedure 80 A 2319 by individuals certified to NDE Level I and Level II.

Equipment used for the examination included a Sonic Mark-I flaw detector, serial number 783106, and Aerotech Gamma series, 1/2" X 1", 2.25 MH_Z transducer, serial number B-12496 fitted with a wedge to produce a 45^O entry angle in steel. The examination system was calibrated utilizing the reference reflectors in calibration block PIR-1.5-1.

(2) The inspector observed a portion of the remote visual examination of the core spray spargers. The examination was done from the refueling floor using a remote controlled underwater television camera.

The inspector noted that the viewing equipment exhibited a sharply defined, well lighted view of the examination area. An NDE Level II individual performed the examination.

All observed surface conditions were reported in accordance with applicable code and procedure requirements.

(3) The inspector witnessed the liquid penetrant examination of main steam pipe support weld number P-03-H15-S.

The examination was done in accordance with liquid penetrant procedure 80 A 2310 using solvent removable, visible dye penetrant by an individual qualified to NDE Level II in the liquid penetrant method.

The inspector found that the above listed examinations were done in accordance with the applicable NDE procedure by personnel properly qualified to the required level of expertise.

No items of noncompliance were identified.

e. Data Review

The inspector reviewed NDE data associated with the following welds:

- Pipe hanger weld #P-02-H15-S
- Emergency (isolation) condenser welds P-39-SW 31-w, P-39-10A-W and P-39-10A-WU
- Core spray piping welds P-40-9-W, P-40-10-W, P-40-11-W, P-40-49-BW and P-40-49A-W

Weld P-02-H15-S was examined using the liquid penetrant examination method and the remaining welds were ultrasonically examined.

The inspector's review included examination data sheets, equipment calibration records and test result evaluation documentation.

Two penetrant examinations of hanger weld P-02-H15-S were conducted by the licensee's ISI contractor.

Data sheet #2310-25 and 2310-27 document the two examinations and are identified by the level III examiner as preliminary data. Data sheet 2310-25, which represents the initial examination, witnessed by the inspector, indicates that further evaluation is necessary. The inspector observed that numerous indications were detected and a portion of the surface was masked by heavy dye pigmentation. The second examination, as documented by data sheet 2310-27, again revealed penetrant indications. The recommendation for surface conditioning prior to penetrant examination is included in the evaluation.

Penetrant procedure 80 A2310 requires that components or parts must have a surface finish which will permit proper interpretation of developed indications. The procedure states that any indications believed to be nonrelevant shall be regarded as an unacceptable surface defect and shall be reexamined to verify whether actual defects are present. It further states that surface conditioning may precede the reexamination.

The ASME B&PV Code, Section V, Article 6 states that surface preparation may be necessary where surface irregularities could otherwise mask indications of unacceptable discontinuities.

At the exit meeting on March 30, 1979, the inspector stated that the adequacy of the examination surface is considered questionable as evidenced by the penetrant indications which were revealed and assumed to be due to examination surface condition.

This item is considered unresolved pending licensee action to provide the surface condition necessary to perform the surface examination required by the ASME Code, Section XI and the facility Technical Specification. (220-79-08-01)

Data sheet #0835-72 documents that no back reflection was obtained throughout the complete longitudinal beam ultrasonic examination of emergency condenser weld #P-39-SW31-W.

This item is considered unresolved pending verification that ultrasonic penetration through the weld material was achieved. (220/79-08-02)

5. Torus Modifications

As a result of the BWR Mark I Containment Program which was initiated in response to Nuclear Regulatory Commission concerns related to relief valve blowdown and loss of coolant accident events, modifications to the Nine Mile Point Unit 1 torus are being made. The work is planned to be completed during the ongoing refueling outage and will include the following:

- Installation of Y-Quenchers and supports in the safety relief valve (SRV) discharge lines
- Installation of vent header deflectors and supports
- Installation of downcomer tie straps

In addition to the above, the catwalk inside the torus was removed and a monorail/removable personnel carrier system is being installed. The monorail installation necessitated rerouting a segment of the torus spray piping system.

The licensee's contractor for the modifications is the Chicago Bridge and Iron Company (CB&I) who has the QA/QC responsibility for the work.

The inspector made a walk through inspection of the torus and observed work in progress including monorail installation and fit-up of the Y-quenchers on SRV-16-3. The inspector observed that the root pass of weld SRV-12-3 was completed and awaiting radiographic examination and that the weld joint preparation on SRV-12 was completed and awaiting fit-up and welding of the 14" diameter Y-Quencher piping. The joint preparation was made by a weld metal build-up and machining operation.

No items of noncompliance were identified.

a. Nondestructive Examination (NDE) Procedures

The inspector selected the following CB&I NDE procedures for review:

- MT 3X, Revision 1 - procedure for magnetic particle examination by the continuous, yoke method using dry, visible particles

- MT 4X, Revision 1 - procedure for magnetic particle examination by the continuous, yoke/prod method using dry, visible particles

- PT 10X, Revision 1 - liquid penetrant examination procedure for class MC vessels

The review was done in order to ascertain licensee approval of the procedures, procedural compliance with the applicable ASME B&PV Code and, in addition, for technical adequacy.

The inspector's review included, but was not limited to, the parameters listed below for the magnetic particle examination technique and the parameters listed in paragraph 4b for the liquid penetrant examination method.

Magnetic Particle Examination

(a) The examination is to be done by the continuous method

(b) The dry particle color provides good contrast with background

(c) The examination is conducted with sufficient overlap to achieve 100% coverage

(d) Yoke lifting power is specified and consistent with applicable ASME Code requirements

(e) The magnetizing current for the prod method is specified and is consistent with the applicable ASME Code requirements

No items of noncompliance were identified.

b. NDE Personnel Qualification

The inspector examined records associated with the qualification of CB&I personnel responsible for radiographic examination of welds in the torus.

The inspector found that the records were current and complete. The qualifications were in compliance with CB&I requirements and the applicable requirements of SNT-TC-1A.

No items of noncompliance were identified.

c. Welding Activities

The inspector reviewed welding procedure specifications, welding procedure qualification records and welder qualification records associated with the torus modification activities.

The review was done to ascertain conformance with the ASME B&PV Code, Section IX and licensee commitments.

The following were included in the inspector's review:

- Welding Procedure Specification (WPS) E 70S-2/E7018, Revision 0 for carbon steel pipe welds using the GTAW and SMAW process

- WPS-E 7018 #1 Revision 0 for carbon steel new components

- WPS-E 7018 #2, Revision 0 for stainless steel pipe welds using the GTAW and SMAW process

- Procedure qualification records for the above mentioned procedures

- Welder qualification records for three welders including one welding supervisor

The inspector found that the welding procedures were qualified in accordance with Section IX of the ASME code and that Vee-notch impact test data were included in procedure qualification records. Welder qualification records included the material thickness range and procedures to which each individual was qualified.

The inspector interviewed licensee contractor personnel and inspected the welding material storage and disbursement area and found that the applicable requirements of procedure ECSC, revision 0 were met. The procedure provides requirements for the purchase, storage, conditioning and handling of welding materials.

No items of noncompliance were identified.

6. Unresolved Items

Unresolved items are items about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Two unresolved items disclosed during this inspection are discussed in paragraph 4e.

7. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) on March 23, 1979 and at the conclusion of the inspection on March 30, 1979. The inspector summarized the purpose and scope of the inspection and the findings.