

U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 82-07

Docket No. 50-410

License No. CPPR-112 Priority -- Category A

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

Facility Name: Nine Mile Point, Unit 2

Inspection at: Scriba, New York

Inspection conducted: June 21, 1982 to July 23, 1982

Inspectors: R.D. Schulz
R. D. Schulz, Resident Inspector

7/29/82
date signed

date signed

date signed

Approved by: W. Bannack for
H. B. Kister, Chief, Reactor Projects
Section 1C

8/4/82
date signed

Inspection Summary:

Inspection on June 21 - July 23, 1982 (Report No. 50-410/82-07)

Areas Inspected: Routine inspection by the resident inspector of work activities relative to rigging and handling of mechanical equipment and piping components, preventive maintenance, storage and control of materials, piping activities, structural steel welding material control, structural steel welding, and recirculation nozzle modifications. The inspector also performed plant inspection tours and reviewed licensee action on previously identified items. The inspection involved 101 inspector hours.

Results: Of the seven areas inspected, two violations were identified in the following areas: Failure to establish measures to control rigging and transfer of piping components and equipment (paragraph 4), and Failure to follow procedures concerning recirculation nozzle modifications (paragraph 10).

DETAILS

1. Persons Contacted

Niagara Mohawk Power Corporation

W. D. Baker, Construction Engineer
J. L. Dillon, Q. A. Engineer, Site Lead
G. J. Doyle, Q. A. Technician
E. Manning, Q. A. Technician
J. P. Ptak, Manager of Construction, Site
G. L. Rhode, Senior Vice President
J. Swenszkowski, Q. A. Technician

Stone & Webster Engineering Corporation

R. C. Bolick, Sr., Q. C. Inspector
L. W. Brown, Superintendent of Construction
R. Clarke, Q. C. Inspector
S. W. Crowe, Assistant Superintendent Field Q. C.
T. Dean, Q. C. Inspector
C. Deban, Senior Records Supervisor
R. Huggon, Q. C. Engineer
R. Kelvin, Senior Q. C. Engineer
E. A. Magilley, Assistant Superintendent Field Q. C.
R. Masse, Q. C. Inspector
F. Novak, Preventive Maintenance Supervisor
N. Palmer, Senior Welding Superintendent
G. W. Pierce, Q. A. Site Supervisor
B. Poythress, Material Manager
G. Richardson, Assistant Material Supervisor
M. Rovito, Visual Construction Inspector
J. D. Simmons, Construction Rigging Supervisor
C. Sperling, Senior Material Controller
L. D. Theriault, Principal Piping Engineer
J. C. Thompson, Superintendent of Field Q. C.
R. Wagner, Resident Manager & Senior Site Representative

ITT Grinnell Industrial Piping, Inc.

R. Askew, Welding Inspector
A. C. Carter, Chief Welding Engineer
G. DeRouse, Q. C. Inspector
T. A. Eberhart, Project Manager
D. R. Giguere, Q. C. Manager
D. L. Grodi, Inspection Supervisor
A. S. Laurenson, Manager of Q. A.
G. McDonough, Senior Office Engineer
L. Pela, Technical Supervisor
G. Rozner, Q. C. Inspector

Reactor Controls, Inc.

T. Autagne, Site Manager
J. Kelley, Q. C. Supervisor
B. Kienlen, Q. C. Inspector

2. Plant Tours

The inspector observed work activities in-progress, completed work and plant status in several areas of the plant during general inspections of the plant. Particular note was taken of the presence of quality control inspectors and quality control evidence such as inspection records, material identification, nonconforming material identification, house-keeping and equipment preservation. The inspector interviewed craft personnel, supervision, and quality inspection personnel as such personnel were available in the work areas.

Specifically, the inspector observed curing of concrete, pipe weld examination including traceability of weld rod, welding on the reactor internals storage pool, and setting of the reactor internals storage pool at elevation 329'.

No violations were identified.

3. Licensee Action on Previous Inspection Findings

- a. (Closed) FOLLOWUP ITEM (81-14-02): ASME Boiler and Pressure Vessel Code Class Control. Stone & Webster has established an identification and segregation system to preclude a possible misuse of material. This has been established thru Construction Site Instruction 20.12, Identification, Marking, and Control of ASME Code Class and Category I Stock Material.
- b. (Closed) UNRESOLVED (81-14-03): ITT Grinnell installed material verification. ITT Grinnell has issued traceability logs for piping components and welding materials. The welding inspectors record the heat numbers on a revised weld data report and verify the acceptability of the material by use of the traceability logs, including checking heat numbers and wall thickness or schedules for piping components.
- c. (Closed) UNRESOLVED (81-12-05): Identification of missing dowels. Stone & Webster quality control concrete inspection personnel have been subject to increased training sessions in the areas of pre-placement, placement and dowel inspections. Also, an inspection attribute has been added to the concrete placement inspection with regard to dowel replacement. Discussions with construction personnel confirmed the fact that quality control inspectors have increased their attentiveness to missing dowels and other attributes of the preplacement inspection. A review of records substantiated that this area is being adequately controlled.

- d. (Closed) VIOLATION (82-01-03): Preheat monitoring. A change to Specification S204X and P301X allowed the use of tempilsticks for verification of preheat control. In addition, two quality control checks are required to be made for temperature maintenance with regard to biological shield wall overlays and welding attachments to a biological shield wall overlay.
- e. (Closed) UNRESOLVED (82-01-04): Postheat monitoring. Three quality control checks are required to be made for temperature maintenance with regard to connections to the biological shield wall.
- f. (Closed) VIOLATION (82-02-03): Recirculation nozzle modifications. Reactor Controls has documented the location of the blocking devices, recorded measuring devices used for verification of quality, and re-measured and verified dimension of weld prep nozzles #K-1241 and K-1246.

No violations were identified.

4. Rigging and Handling of Mechanical Equipment and Piping Components

The inspector reviewed the rigging and handling program for compliance with regulatory requirements and ANSI N45 2.2-1972.

a. Documents Reviewed

- ITT Grinnell Field Interface Procedure No. 2, Revision 3, Rigging.
- ITT Grinnell Field Quality Control Procedure, FQCX-4.2-19-2, dated April 3, 1979, Receiving, Unloading, Handling, and Storing Mechanical Equipment.
- ITT Grinnell Field Quality Control Procedure, FQC4.2-8-7, dated February 3, 1982, Surveillance of Rigging Equipment.
- Stone & Webster Specification 12177-P223E, dated April 11, 1978, Shop Fabricated Vessels, ASME III, Class 2 and Class 3.

ITT Grinnell Field Quality Control Procedures were inadequate as they did not delineate the duties of quality control personnel responsible for inspecting rigging and handling operations and inspection checklists were not provided in the procedures. The procedures were approved by Stone & Webster.

b. Records Reviewed

- Daily issue log for rigging equipment
- Equipment Lift Record Cards

- Rigging Equipment Record Cards
- Certifications on shackles, wire rope, and crane hook
- Inspection Reports

The equipment lift record card is the controlling document for the lift. The inspector reviewed three equipment lift record cards designated as numbers 573, 575, and 578. The following deficiencies and discrepancies were noted by the inspector but overlooked by ITT Grinnell and Stone & Webster personnel:

#573 - Diesel Fuel Tank - 82,733 lbs.

- Two wire rope slings stated as having a load rating of 21 tons were actually 38 tons.

#575 - Diesel Fuel Tank - 62,888 lbs.

- Two wire rope slings stated as having a load rating of 31 tons were actually 38 tons.
- Did not specify dimensional locations for sling attachments and balance points, taking into consideration the center of gravity, as required by ANSI N45 2.2, paragraph 7.2, 1972.
- Load block was incorrectly identified as M-136.

#578 - 48" Main Steam Header - 50,610 lbs.

- Did not specify dimensional locations for sling attachments and balance points, taking into consideration center of gravity as required by ANSI N45 2.2, paragraph 7.2, 1972.

c. Observation of Lift

The inspector observed the lift of a 48" Main Steam Header, #01-5-2-MSS-9-4-24, from elevation 306' of the turbine building to elevation 292' of the turbine building. The Main Steam Header was initially raised and then lowered due to the fact that the lift attachment points had been incorrectly determined for adequate balancing of the unit. The dimensional locations of the lift attachment points had not been delineated on the equipment lift record card and therefore, the lift attachment points were determined by trial and error. The unit drifted too far east and a 3 ton grip chain hoist was attached from the header to a structural steel hanger support. Stress was induced on the hanger support in order to bring the header back to the west. The ITT Grinnell Q. C. Inspector informed the Rigging Supervisor that the chain hoist attached to the hanger support was not acceptable due to stress levels but the chain hoist remained in use as it was attached, despite the inspectors

observation. During the transfer, the Main Steam Header came in forceful contact with two hangers, structural steel, and extended rebar. The resident inspector has requested the licensee to inspect the inlet and outlet connections of the Main Steam Header for possible damage. As a result of the lift, two hangers were considered to be in a nonconforming condition. One of the hangers was classified as a shock suppressor and could have been disconnected by only removing a pin. The rebar could have been easily removed, both rebar and hangers providing unnecessary obstructions. During the lift the Q. C. Inspector requested the lift be halted and further evaluated, but the Rigging Supervisor refused to halt the lift stating they would continue the lift and take an unsatisfactory report. The authority of the ITT Grinnell Q. C. Inspector has not been determined.

d. Summary

The deficiencies noted in sections a, b, and c considered collectively, constitutes a programmatic weakness with regard to control of activities in the area of rigging and transfer of mechanical equipment and piping components. Examples include:

- (1) Quality control personnel duties for inspecting rigging and handling activities were not delineated nor were inspection checklists provided.
- (2) Equipment Lift Record Cards were not being adequately reviewed by ITT Grinnell or Stone & Webster personnel for sling attachments and balance points.
- (3) The authority of the ITT Grinnell Q. C. Inspector has not been established. During a lift of a 48" main steam header on June 24, the ITT Grinnell Q. C. Inspector was unable to correct the deficiencies he recognized. The Q. C. Inspector pointed out the deficiencies to the Rigging Supervisor and requested the lift be halted but the Rigging Supervisor refused to correct the deficiencies nor stop the lift for further evaluation.
- (4) The main steam header lift was neither adequately planned nor were adequate instructions provided and therefore, the lift was not in accordance with sound material handling practices to prevent damage.

Failure to establish measures to control rigging and transfer of piping components and equipment represents a violation of 10 CFR 50, Appendix B, Criterion XIII. (410/82-07-01)

5. Preventive Maintenance

The preventive maintenance program was reviewed for compliance with regulatory requirements and SM01, Revision 7, Storage and Maintenance During Storage of Permanent Plant Equipment. The inspector examined four Engineering and Design Change Coordination Reports which significantly reduced both construction inspections and quality control inspections. The four E&DCR's and their applicability are detailed below:

<u>E&DCR</u>	<u>Applicability</u>
F00372	Reduced construction inspections on all equipment other than NSSS
F00380	Reduced construction inspections on NSSS equipment
F00426	Reduced construction inspections on all equipment including NSSS
F00425	Reduced quality control inspections on all equipment including NSSS

Based on past problems with the preventive maintenance program, which have been identified by Niagara Mohawk through numerous nonconformances and a significant deficiency report, the inspector requested the licensee to address the following two areas of concern:

- (a) The rationale behind decreasing inspections despite numerous deficiencies in the area of preventive maintenance.
- (b) The rationale behind decreasing inspections for in-place storage (other than installed) compared to warehouse storage, considering humidity conditions in the building areas and construction activity.

These two areas of concern will remain open and be examined in a future inspection period. (410/82-07-02)

The inspector reviewed SM01 requirements and construction records on the following valves and pieces of equipment and those that were inspected visually are marked with an asterisk:

- *-- Special Service Control Valves - 2CSL-FV114, 2RHS-FV38A, 2RHS-FV38B, 2RHS-FV38C, 2ICS-FV108, Specification C051M.
- 4160V Metal-Clad Switchgear, Specification E015F.
- *-- Horizontal Centrifugal Pumps - 2SFC-P1A, 2SFC-P1B, 2SWP-P1A, 2SWP-P1B, 2SWP-P1C, 2SWP-P1D, 2SWP-P1E, 2SWP-P1F, Specification P222X.
- Recirculation System Pumps and Motors.

After reviewing specific SM01 requirements, as changed by the recent E&DCR's, and after discussions with management, quality assurance, and preventive maintenance personnel, the inspector requested the licensee to address the following two areas of concern:

- (c) The inspector was unable to determine the requirements for a visual inspection. For example, will a visual inspection by a constructor inspector or quality control inspector involve verifying meggering?

Due to past deficiencies in the area of motor meggering, who is assigned the responsibility for verifying adequacy and timeliness in meggering?

- (d) Where weekly, monthly, and quarterly maintenance is required to maintain items, are quality control inspections adequate to assure the integrity of the item?

These two areas of concern will remain open and be examined in a future inspection period. (410/82-07-03)

During the visual inspections the inspector noted the following deviations from Specification SM01, Revision 7:

<u>Component</u>	<u>Noncompliance</u>
2RHS-FV38C Spec. C051M - Special Service Control Valve	No desiccant No fire retardant covering
2CSL-FV114 Spec. C051M - Special Service Control Valve	No fire retardant covering
2ICS-FV108 Spec. C051M - Special Service Control Valve	Not in correct location as specified on preventive maintenance control card

Deviations from Specification SM01, Revision 7 is an unresolved item which will be examined in a future inspection period. (410/82-07-04)

No violations were identified.

6. Storage and Control of Materials

Storage and control of materials were observed to ascertain whether the licensee is implementing a program in conformance with regulatory requirements, ANSI N45 2.2-Section 6-1972, and Material Equipment Storage Procedure CMP 1.3-2.79. The inspector verified that responsibilities were assigned for receipt, acceptance, storage, and release of items. Four levels of storage were established and maintained in accordance with ANSI N45 2.2, paragraph 6.1.2. A personnel access list was posted for the main storage warehouse and access was controlled by a locked door. Fire Protection was adequate, commensurate with the type of storage area and material involved. Hazardous chemicals, paints, solvents and other materials of a like nature were stored in ventilated enclosures which were not in close proximity to important nuclear plant items. Equipment was stored on pallets or dunnage to permit air circulation. Items were traceable to a purchase order and a material receiving report number. Material was released in

accordance with CMP 1.3-2.79, paragraph 5.10.5. However, hold and reject areas were not roped off and marked as required by CMP 1.3-2.79. This is an open item which will be examined in a future inspection period. (410/82-07-05)

No violations were identified.

7. Piping Activities

Various piping spools were observed during handling and installation, and activities were in accordance with instructions to prevent damage. The inspector randomly selected the following three as-built ITT Grinnell isometrics and compared them with the actual installations or field welding.

<u>Iso. No.</u>	<u>System</u>	<u>Size</u>
25-6	High Pressure Core Spray	3"
26-3	Low Pressure Core Spray	16"
66-39	Residual Heat Removal	4"

The inspectors line walk down verified the as-built isometrics were correct for the following attributes:

- Location
- Welds
- Piping components
- Material traceability
- Welder's Identification Symbol

Revisions to spools were controlled and documented. Records for the isometrics were reviewed in the areas listed below for compliance with regulatory requirements, procedural requirements, ASME B&PV Code requirements, and the piping specification tables as applicable:

- Qualification of nondestructive examination personnel.
- Calibration of contact pyrometers.
- Material certifications for piping components, including wall thickness.
- Material certifications for welding wire electrodes.
- Weld data reports.
- Welder qualifications.

-- Code data reports, including NPP-1 and NPV-1 forms.

The inspector had a concern with regard to the certifications of a Level II in radiography as the individuals level of experience may not meet SNT-TC-1A standards, specifically paragraphs 4.3, 6.1, and Table 6.2.1A. Subsequently, the licensee decided to take the following steps:

-- Examine all the film interpreted and evaluated by the Level II.

-- Determine if the individuals qualifications meet the requirements of SNT-TC-1A and ITT Grinnell Procedure QCF-6.1, Nondestructive Examination Personnel Qualification.

Pending the licensee's review, this will remain an open item and will be examined in a future inspection period. (410/82-07-06)

No violations were identified.

8. Structural Steel Welding Material Control

The objective of this part of the inspection was to determine that effective welding material controls were established in accordance with quality assurance procedures and construction methods procedures.

a. Procedures Reviewed

Stone & Webster, Q.S.-8.11, Welding Material Control, Revision B, dated April 30, 1980.

Stone & Webster, Q.A.D.-7.7, Receiving Inspection, Revision A, dated December 28, 1977.

Stone & Webster, Q.A.D.-8.2, Verification of Material Certifications (Field), Revision A, dated May 23, 1978.

Stone & Webster, CMP-6.4-1.82, Field Storage, Handling and Issuance of Welding and Brazing Materials.

Specification NMP2-7201, Field Storage Handling and Issuance of Welding and Brazing Materials, Revision 1, dated January 19, 1981.

b. Records Reviewed and Weld Rod Storage

The inspector checked the rod ovens in the issue station at 250' elevation of the turbine building and the rod ovens in the issue station just outside the secondary containment. All the ovens were within the allowable temperature parameters. Randomly, five heats of welding rods which were being stored in the ovens, were selected and traced to procurement documents, receipt inspection reports, and

material certifications. All certifications met the requirements of NB of the ASME Boiler and Pressure Vessel Code, Section III, Class 1. All rods requested for use in the field were controlled thru a written requisition process which included quantity issued, date and time of issuance, heat and lot number, size, type, and weld joint identification. Unused rods were returned and the quantity documented on the written requisition. Rod stubs were placed in stub buckets and properly disposed in a large container at the end of a shift. Portable rod ovens were used in the field, none were found to be unplugged, and they were assigned to specific welders and returned to the rod issue room at the end of a shift. Surveillance records by field quality control personnel were reviewed concerning rod oven checks, portable rod oven checks, and weld rod traceability.

No violations were identified.

9. Structural Steel Welding

The inspector witnessed fit-ups and welding on various structural steel components. Q. C. inspection of fit-ups and final weld criteria were noted and construction controls over the welding sequence, care of the base metals, and knowledge of the proper quality criteria were evident.

The following structural steel joints were examined:

<u>Components</u>	<u>Location</u>	<u>Joint Type</u>
Plates	South Electrical Tunnel Roof, elevation 234'	3/16" fillet both sides
Shear Lugs to Embedment Plates	Fabrication Shop	3/8" fillet both sides
Structural Tubing to Embedment Plates	Control Room Building, elevation 245'	1/4" flare bevel
Beam A6656 to Biological Shield Wall Overlay	Primary Containment, elevation 278'	1/2" fillet with 1" returns
Beam E6658 to Biological Shield Wall Overlay	Primary Containment, elevation 278'	Full penetration with backing bar. Prequalified joint - TCU4d
Seismic Duct Supports	Control Room Building, elevation 268'	5/16" fillet

A magnetic particle examination was observed for the weld connecting beam E6658 to the biological shield wall overlay. The dry powder, prod technique was in accordance with the approved procedure, QAD-9.62.

All of the structural welding was evaluated with regard to AWS D1.1-77, approved drawing and welding detail sheets.

No violations were identified.

10. Recirculation Nozzle Modifications

The inspector reviewed the records on the recirculation nozzle modifications. While reviewing the data sheets the inspector discovered that the jet pump riser locations had significantly changed from their original locations prior to restraining, as dimensions recorded on data sheets documented the locations after welding had been completed and the restraints removed. The riser must be within $\pm .030$ " of its original location as recorded on the data sheets. This requirement is stated in Reactor Controls Procedure, RIM-3, Recirculation Nozzle Modification and Safe End Reinstallation, dated May 28, 1981. The following six jet pump risers were beyond tolerance allowance as indicated:

<u>Location of Jet Pump Riser at Elbow</u>	<u>Beyond Maximum Tolerance</u>
60°	.047
90°	.018
120°	.103
150°	.032
270°	.024
300°	.003

From discussions with the Reactor Controls Site Manager and Quality Control Inspector, the resident inspector determined that Reactor Controls Supervision was aware of the exceeded tolerance allowance for the risers.

Although in a nonconforming condition, a nonconformance had not been initiated by the Quality Control Supervisor. Also, there was nothing written on the data sheets to indicate identification of a nonconforming condition and the risers were not in a hold status. Reactor Controls, Inc. Quality Assurance Manual states in Section 11, Nonconforming Items and Corrective Action, dated November 1, 1981, "A nonconformance shall be identified with the initiation of a Nonconformance Report by the Quality Control Supervisor and the Nonconformance Report number entered on the Data Sheet Nonconforming Items require hold status."

Failure to follow procedures with regard to identification and control of nonconforming items represents a violation of 10 CFR 50, Appendix B, Criterion V. (410/82-07-07)

11. Management Meetings

At periodic intervals during the course of this inspection, meetings were held with senior plant management to discuss the scope and findings of this inspection. The licensee acknowledged the inspectors concerns.