U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 82-02

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: March 1-26, 1982

Inspectors: R D Schulz — 4/5/82
R. D. Schulz, Resident Inspector — date signed

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_____ — date signed

Approved by: R C Knop for — 4/21/82
H. B. Kister, Chief, Reactor Projects Section 1C — date signed

Inspection Summary:

Inspection on March 1-26, 1982 (Report No. 50-410/82-02)

Areas Inspected: Routine inspection by the resident inspector of work activities relative to pipe supports, recirculation nozzle modifications, structural supports, receipt inspection program, nondestructive examination-piping, mechanical joints, stud welding, and safety related piping. The inspector also performed plant inspection tours and reviewed licensee action on previously identified items. The inspection involved 91 inspector hours.

Results: Of the eight areas inspected, one violation was identified in the following area: Failure to follow instructions concerning recirculation nozzle modifications, paragraph 5.

DETAILS

1. Persons Contacted

Niagara Mohawk Power Corporation (NMPC)

W. D. Baker, Construction Engineer
M. S. Dunlop, Q. A. Technician
J. L. Dillon, Q. A. Engineer, Site Lead
G. J. Doyle, Q. A. Technician
R. A. Norman, Q. A. Supervisor
E. Manning, Q. A. Technician
R. Spencer, Q. A. Inspector
J. Swenszkowski, Q. A. Technician
P. E. Francisco, Nuclear Licensing Engineer
W. M. Bryant, Manager Quality Assurance Department
J. J. Bebko, Manager Compliance and Verification
J. P. Ptak, Manager of Construction, Site
S. F. Manno, Project Manager, Unit 2

Stone & Webster Engineering Corporation (S&WEC)

E. A. Magilley, Assistant Superintendent Field Q. C.
R. Clarke, Senior Q. C. Inspector
T. Dean, Senior Q. C. Inspector
C. Sperling, Senior Material Controller
R. Huggon, Q. C. Engineer
R. Hardison, Q. C. Engineer
R. Kelvin, Senior Q. C. Engineer
J. C. Thompson, Superintendent of Field Q. C.
L. Shea, Superintendent of Engineering
J. Crytzer, Q. C. Senior Engineer
G. Pierce, Site Q. A. Supervisor
W. F. Griffith, Superintendent of Construction Services

Cives Steel Corporation

K. Williams, Assistant Field Administrator

ITT Grinnell Industrial Piping, Inc.

D. R. Giguere, Q. C. Manager
R. Graiko, Senior Project Engineer
D. L. Grodi, Inspection Supervisor
L. Pela, Technical Supervisor
R. Askew, Welding Inspector
M. Terpening, Level III, NDE
E. F. O'Hara, Lead Hanger Engineer

Reactor Controls, Inc.

L. M. Smith, Q. C. Supervisor
T. Autagne, Site Manager

General Electric

R. M. Pulsifer, Resident Site Manager

2. Licensee Action on Previous Inspection Findings

a. (Closed) INSPECTOR FOLLOWUP ITEM (82-01-05): Unapproved qualified welders list. The qualified welders list, which is used by quality control for verification that welders are qualified in the given process that was used for welding, is now approved by quality control. The inspector reviewed the welders list for February and March and noted that the document had been approved by Stone & Webster quality control personnel who verified its accuracy.

b. (Open) INSPECTOR FOLLOWUP ITEM (81-14-02): Establishment of Code Class control. Stone & Webster is segregating ASME Code Class 1, 2, and 3 material and has established a traceability log, assigning unique numbers to each specific heat of material. The inspector reviewed the log and subsequently discovered the following inconsistencies:

(1) Stone & Webster material control personnel had assigned unique numbers to each specific heat, but were not sure what material had actually been marked with that unique number. The inspector found material which had been released to ITT Grinnell for installation and had been assigned a unique number, but had not been marked accordingly.

(2) ITT Grinnell material control personnel were not aware of any unique numbers being assigned to material and therefore, the value of assigning and marking material with a unique number by Stone & Webster for the purpose of Code Class control would be greatly diminished, since ITT Grinnell installs the material and would revert back to manufacturers heat number for traceability.

(3) Stone & Webster material control personnel and Stone & Webster Q. C. inspectors were not in agreement concerning the material which had to be marked with unique numbers. A decision had not yet been made concerning unique traceability markings for material which had previously been received.

There appeared to be a lack of management direction in this area. The purpose of a unique numbering system is to preclude the possible misuse of material in the wrong Code Class, due to identical heat numbers for various Code Classes. The three digit unique numbering system is adequate but based on its purpose may warrant further management attention.

c. (Closed) UNRESOLVED ITEM (81-12-02): Lack of a rework procedure and deficiency in structural steel fit-up inspections. On November 27, 1981, Stone & Webster issued a notice that stated, prior to performing any work or rework on an item that had been accepted by field quality control, written notification must be provided that shall include a

schedule for reinspection. This assures that all work is accomplished in accordance with specified requirements by preventing the possibility of bypassing a field quality control holdpoint. A formalized procedure, QS 14.1, will be issued within the next few weeks specifying instructions concerning written notification for rework control. Structural steel fit-up inspections are now required to be done on a 50 percent sample, rather than the previous random sample, as stipulated in inspection plan N2QCIPSUFB001. The inspector verified that over 50 percent of the structural steel fit-ups are being examined by field quality control and gap violations have been recorded and corrected.

d. (Open) UNRESOLVED ITEM (81-12-05): Missing/mislocated dowels. Stone & Webster has reviewed the nonconformance and disposition reports related to missing/mislocated dowels and has concluded that the stress levels in these areas would have remained within the allowable range should this condition have gone undetected and therefore, is not a reportable deficiency per 10 CFR 50.55(e). The missing/mislocated dowels have been grouted into the placement where necessary, as determined by engineering. The missing/mislocated dowels were not identified by field quality control personnel due to either lack of attention or the fact that dowels were removed or relocated after field quality control preplacement inspection to accommodate placement of concrete. Stone & Webster, in a reply to Niagara Mohawk, stated that the dowels were removed or relocated after inspection and this is the reason the missing/mislocated dowels were not identified by field quality control. This would be in violation of the rework instructions stated in unresolved item 81-12-02 discussed previously. Niagara Mohawk replied to Stone & Webster on December 29, 1981 and stated in part, "It is not feasible that the number of dowels indicated in the N&D's are required to be removed/relocated to accommodate placement of concrete." The inspector was concerned that a lack of attentiveness by field quality control personnel caused by inadequate training led to failure to identify some missing or mislocated dowels. Also, the inspector has requested the licensee to address the removal or relocation issue in regards to 81-12-02.

Stone & Webster's reply to Niagara Mohawk, dated February 12, 1982, with regard to the adequacy of the Quality Assurance Program in this area does not adequately address the problem, in that the response fails to recognize an effective Q. A. program not only identified nonconforming conditions but controls and reduces their occurrence. The licensee acknowledged an additional response would be required, addressing the relevant issues for timely corrective and preventive action.

3. Plant Inspection 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. The inspector interviewed craft personnel, supervision, and quality inspection personnel such as personnel were available in the work areas.

Specifically, the inspector observed rigging, handling, and placement of beams in the secondary containment above elevation 261'. Welding of structural steel whip restraints by Cives Steel Corporation was observed and a magnetic particle examination of a whip restraint weld was witnessed. The examination consisted of the dry powder, prod technique. The inspector witnessed welding by Schneider Power Corporation on a seismic damper support and a seismic duct support. The welding was in accordance with AWS D1.1 and approved drawings. The inspector reviewed the welders qualification card for evidence of procedural qualification regarding the welding technique for the seismic duct support. Welding of cross bracing for seismic cable tray supports was observed for conformance to approved drawings and welding details. Craft personnel confirmed that over 50 percent of the fit-ups were being examined by Stone & Webster Q. C. personnel and all final welds required Q. C. hold points. Rebar and embedment placement was examined at elevation 238' secondary containment.

No violations or deviations were identified.

4. Pipe Supports

The inspector reviewed the ITT Grinnell pipe support program to ascertain whether the installation of safety related pipe supports were in compliance with NRC requirements, licensee specifications, contractor procedures, and ASME Section III NF, of the ASME Boiler and Pressure Vessel Code. The inspector reviewed the pipe support program for the following attributes:

(1) Drawing control including design and field changes;

(2) Material traceability;

(3) Type and classification of pipe supports;

(4) Location and spacing of components;

(5) In-Process controls including field planners;

(6) Inspection of installed pipe supports;

(7) Welding and nondestructive examination; and

(8) Anchor bolt installation including calibration control of torque wrenches.

The inspector observed that the majority of pipe supports, supporting the installed piping weight, are temporary component standard supports. These temporary supports are identified by a red tagging system and have not been installed or designed to engineering approved drawings. The temporary supports were installed instead of the permanent designed supports because of material shortages, designing difficulties, and to facilitate piping installation. The inspector discovered that there is neither field procedures or instructions for installing temporary pipe supports nor for replacing temporary pipe supports with permanent pipe supports. Furthermore, Specification NMP2-P301J, dated August 5, 1981, which addresses the erection of temporary pipe supports

requires that the contractor review temporary pipe supports for structural adequacy and stipulates recommended spacing including mandatory requirements for concentrated loads. There was no evidence of contractor review concerning the structural adequacy of temporary pipe supports. This item will remain unresolved and the licensee was informed that a future inspection would be based on adequate contractor instruction on temporary/permanent support installation and the clarification of the apparent specification nonconformity concerning structural adequacy determinations. (410/82-02-01)

The inspector examined calibration torque wrench records and discovered torque wrench #00040 had been lost. The torque wrench was due for calibration on August 15, 1981 but had not been documented as lost until November 6, 1981. Furthermore, a review had not been done to determine the validity of previous results that may have been obtained with the lost torque wrench, as ITT Grinnell's program considers lost the same as out of tolerance concerning the validity of foot/pounds torquing. Subsequently, while interviewing construction personnel and examining records, the inspector learned that construction does not keep records regarding the use of calibrated torque wrenches for applying the installation torque. The inspector has requested the licensee to address the following concerns:

-- How does ITT Grinnell meet the requirements of Specification NMP2-S203G, dated February 27, 1981, Drilled-In Expansion Type Concrete Anchors, which states in part, "Calibrated, manually operated torque wrenches shall be used to apply the installation torque, except that hand wrenches may be used for the 1/4 inch and 3/8 inch anchor sizes?"

-- How can a review be adequately done to determine the validity of previous results for a lost or out of tolerance torque wrench if construction has not kept records on the specific use of the wrench?

-- What action will be taken concerning the lost torque wrench and its relevance to previous installations and validity of foot/pounds torquing?

Pending clarification of these concerns and NRC evaluation of any licensee corrective action, if required, this item is unresolved. (410/82-02-02)

No violations or deviations were identified.

5. Recirculation Nozzle Modifications

The inspector examined Reactor Controls, Inc. scope of work concerning modification of the reactor recirculation inlet nozzles and thermal sleeves. The task involves:

(1) Blocking the recirculation jet pump risers at the presently installed locations.

(2) Cut and removing the existing safe ends and a portion of the thermal sleeves.

(3) Weld prep of nozzle.

(4) Installation of new safe ends using automatic GTA welding equipment.

The inspector reviewed Reactor Control and General Electric procedures in regard to cutting, machining, cleaning, installation, welding, nondestructive examination, and access control to the reactor pressure vessel.

The inspector toured the inside of the vessel noting adequate access and cleanliness controls, and also observed work in progress on the vessel nozzles. At the time of the inspection, Reactor Controls had blocked the recirculation jet pump risers, removed the existing safe ends and portion of the thermal sleeve, and was in the process of performing weld preparation of the nozzles.

General Electric Field Disposition Instruction, FDI 15/31263-2, RPV Recirculation Nozzle Modifications, states in part, in Section 4.9.2, that data sheets shall record the location and description of all blocking devices used and the data sheet shall also record the type of measuring device used and its expected accuracy for the purpose of tolerance adjustments.

Contrary to the above, it was discovered during a review of records and verified with Reactor Controls supervision that Reactor Controls had not recorded on data sheets the location of the blocking devices used and also had not recorded on data sheets the measuring device used for determining the location of the ten jet pump risers prior to restraining. In addition, Reactor Controls had not recorded on data sheets the measuring device used concerning dimensional tolerance verification of weld prep nozzles #K-1241 and #K-1246. This failure to adhere to instructions is a violation with regard to 10 CFR 50, Appendix B, Criterion V. (410/82-02-03)

There appeared to be a lack of communication between Stone & Webster and Reactor Controls with regard to approved form usage and specification compliance. Reactor Controls was using data sheet forms, which were different from the data sheet forms that Stone & Webster had approved for use, in that the unapproved form did not have a block for recording the measuring device used.

Reactor Controls supervision and the General Electric representative on site expressed the viewpoint that Reactor Controls did not have to meet the General Electric Instruction but only Reactor Controls approved procedures. This viewpoint was not held by either Stone & Webster or Niagara Mohawk Management. Reactor Controls supervision appeared uncertain of measuring devices used for each specific component and conflicting information was given to the resident inspector concerning the control of measuring devices.

The Stone & Webster Site Q. A. Supervisor is investigating the inspectors' concerns which include:

(1) Validity of measurements taken.

(2) Adequacy of surveillance by Stone & Webster and Niagara Mohawk.

(3) Conformance with General Electric Instruction FDI 15/31263-2.

The Stone & Webster Site Q. A. Supervisor assured the inspector that installation of the nozzles would not commence until the validity of the measurements could be determined.

6. Structural Supports

a. Equipment Supports

The inspector examined completed work concerning the structural steel supports for the two residual heat removal heat exchangers, 2RHE1A and 2RHE1B, located in the north and south auxiliary bays, respectively. The completed work and associated documentation was examined to determine compliance with AWS D1.1-1977 and Stone & Webster Specification NMP2-S204X, Erection of Structural and Miscellaneous Steel Category I, Revision 2, dated June 27, 1981. The following documents were reviewed:

(1) Structural Welding Inspection Reports;

(2) High Strength Bolting Inspection Reports;

(3) Expansion Anchor Bolts Inspection Reports;

(4) Final Erection Inspection Reports which include material traceability, and specification conformance, base plates, mating surfaces, and plumbness;

(5) Stone & Webster Drawing ES-53Q-7, and

(6) Cives Drawing FW119, Revision C.

Records verified the use of calibrated measuring and test equipment.

b. Embedments:

The inspector examined completed work concerning three embedments located in the north auxiliary bay at elevation 240'. The embedments were inspected for proper projection location, material traceability and configuration. The inspector reviewed preplacement inspection records and material certifications. In addition, the structural steel which was welded to the embed plates was examined and records were reviewed to determine that the welding was done in accordance with AWS D1.1-1977. The following documents were included in the review:

(1) Inspection records on concrete pours 1-421-093P, 1-421-121P, and 1-123-034P.

(2) Structural welding inspection report #S1018125 for beams B3356, D3341 and F3364.

(3) Stone & Webster Drawing ES-53S-3.

(4) Stone & Webster Drawing ES-53AA-4.

(5) Cives Drawing E-405, Revision E.

No violations or deviations were identified.

7. Receipt Inspection Program

Receipt of materials was reviewed to ascertain that the licensee is implementing a QA program that is in conformance with ANSI N45 2.2-1972, paragraph 5, commitments in the Quality Assurance Program, and implementing procedures. A status system was established that indicated whether an item was acceptable or unacceptable for installation. Nonconforming items were inspected for identification, segregation, control, and release. Receipt inspection records were examined for stipulated inspection criteria and certified material tests reports were examined for conformance to ASME Boiler and Pressure Vessel Code, Sections II and III. The certified material test reports reviewed were for items purchased to ASME Boiler and Pressure Vessel Code, Section III, Class 2, Subsection NC.

The inspector also verified that measures had been established for vendor source evaluation, selection, and removal from the approved suppliers list if objective evidence of quality furnished by the supplier justified a negative procurement rating. The following documents were reviewed:

-- QAD-7.7, Revision A, dated December 28, 1977, Receiving Inspection-General.

-- QAD-7.8, Revision D, dated May 12, 1981, Seller Documentation Inspection and Review.

-- QAD-14.1, Revision C, dated February 14, 1980, Inspection Report System.

-- QAD-4.2, Revision C, dated January 14, 1980, PQA Rating System.

-- QS-14.2, Revision D, dated February 14, 1980, Inspection Report System.

-- CMP-1.3-2.79, Material/Equipment Storage.

No violations or deviations were identified.

8. Nondestructive Examination - Piping

The following nondestructive examination procedures and standards were reviewed for compliance to the ASME Boiler and Pressure Vessel Code, 1974 Edition:

-- Liquid Penetrant Examination Procedures, PTP-1-0, dated August 12, 1976. (Conformance to ASME Section V, Article 6).

-- Liquid Penetrant Acceptant Standard, PTA-1-0, dated August 17, 1976. Application-ASME Welds, (Conformance to ASME Section III, elevation of indications NB-5351 and acceptance standards NB-5352).

-- Liquid Penetrant Acceptant Standards, PTA-3-0, dated August 17, 1976. Application-ASME End Preps 2" or more in thickness. (Conformance to ASME Section III, acceptance standards NB-5130).

-- Magnetic Particle Examination Procedure, MTP-1-1, dated October 20, 1976. (Conformance to ASME Section V, Article 7).

-- Magnetic Particle Acceptant Standard, MTA-1-0, dated August 17, 1976. Application-ASME Welds, (Conformance to ASME Section III, evaluation of indications NB-5341 and acceptance standards NB-5342).

-- Magnetic Particle Acceptant Standard, MTA-3-0, dated August 17, 1976. Application-ASME End Preps 2" or more in thickness. (Conformance to ASME Section III, acceptance standards NB-5130.

-- Radiographic Examination Procedure, RTP-3-1, dated February 3, 1977. (Conformance to ASME Section V, Article 2).

-- Radiographic Examination Standard, RTA-1-1, dated October 8, 1976. (Conformance to ASME Section III, acceptance standards NB-5320).

The inspector also reviewed the following nondestructive examination records:

System	Iso. No.	Weld No.	Examination
CSL	26-3	006	PT
SWP	21-50	006	P[illegible]
SWP	21-50	005	P[illegible]
CSH	25-3	004	RT
RHS	66-8	001	RT
RHS	66-39	013	RT
RHS	66-37	002	RT

The inspector reviewed the records of personnel qualified in accordance with ASNT-TC-1A and also observed that records were maintained for traceability of penetrant, developer, and cleaner used in the field.

Radiographs were marked in accordance with Radiographic Examination procedure RTP-3-1 and circumferential butt welds that had been radiographed were marked with a low stress steel stamp.

No violations or deviations were identified.

9. Mechanical Joints

The inspector randomly selected several bolted flange connections for the purpose of verifying that a inspection program had been established for both the identification of nuts/bolts as installed and thread engagement/bolt stress,

as referenced in ASME Boiler and Pressure Vessel Code, Section III, Subsections NB-4700, NC-4700 and ND-4700. The inspector discovered that an inspection program had not been established regarding identification of installed bolts and nuts for material traceability nor had an inspection program been established for verification of thread engagement or bolt stress. Subsequently, the inspector reviewed Stone & Webster Specification NMP2-P301C, Field Fabrication and Erection of Piping, Revision 2, dated May 21, 1981 and discovered that design criteria for bolted connections had not been stipulated nor was a inspection program for bolted connections required. The inspector has requested the licensee to address the following concerns:

-- Does a design review need to be done for all bolting connections in regard to thread engagement and bolt stress taking into account such factors as gasket type or system design?

-- Is a hydrostatic test failure adequate as the sole criteria for unacceptable bolted connections?

-- What criteria should the piping contractor adhere to while installing bolted joints concerning thread engagement and bolt stress?

-- The adequacy of ITT Grinnell's QA program, accepted by Stone & Webster, with regard to verification of installed bolted connections and traceability of installed nuts and bolts.

The above concerns are for all bolted connections under the jurisdiction of Specification P301C.

Pending clarification of the above questions, this item is unresolved. (410/82-02-04)

No violations or deviations were identified.

10. Stud Welding

The inspector reviewed the stud welding testing and inspection program for compliance with AWS D1.1-1977, Sections 4.29 and 4.30, and observed studs that were bend tested.

a. Procedures Reviewed

-- QS-9.1, Revision A, dated November 9, 1976, Automatically Timed Stud Welding.

-- QAD-9.3, Revision A, dated November 27, 1979, Stud Welding Inspection.

-- CMP-6.3-5.80, Automatically Timed Stud Welding.

b. Records Reviewed

The inspector reviewed procedure/equipment operator qualification records for three operators, which involved two test studs bent to an angle of thirty degrees from their original axis and visually inspected for failure in the weld zone. In addition, inspection records were reviewed for torque testing of production studs with a calibrated torque wrench. The individual who visually inspected the studs for pre-production testing was questioned by the inspector regarding the inspection attributes, such as base material preparation and pre-heat. The individual appeared knowledgeable concerning the AWS D1.1 guidelines and requirements. Personnel records verified training and qualification in accordance with ANSI N45 2.6, Level II.

No violations or deviations were identified.

11. Safety Related Piping - Observation of Work

The inspector observed handling of various piping components while being transferred to final locations. In addition, the following attributes on numerous piping subassemblies were spot-checked during installation:

-- End preparation

-- Pre-weld cleanliness

-- Pre-heat control

-- Alignment

-- Root pass

-- Final visual

-- Material identification-spool pieces and welding materials

-- Welder identification

-- Use of calibrated pyrometers

Specifically, the inspector checked the following six welds and associated spool pieces for drawing and piping specification conformance:

System	Iso	Weld No.	Size	ASME Class	Piping Spec.
Main Steam Safety and Relief Valves Vents and Drains	73-12	003	10"	3	602
	73-12	004	10"	3	602
Residual Heat Removal	66-29	012	18"	2	311
	66-29	011	18"	2	311
Low Pressure Core Spray	26-2	001	20"	2	151
	26-2	002	20"	2	151

The inspector reviewed NPP-1, Data Reports for the piping subassemblies joined by the six welds.

No violations or deviations were identified.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. Unresolved items disclosed during the inspection are discussed in paragraphs 4 and 9.

13. 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 findings and concerns and all parties were cooperative.