U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 85-36

Docket No. 50-410

License No. CPPR-112 Priority -- Category A/B

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard
Syracuse, New York 12302

Facility Name: Nine Mile Point, Unit 2

Inspection At: Scriba, New York

Inspection Conducted: October 21, 1985 to November 26, 1985

Inspectors: R.A. Gramm, Senior Resident Inspector
L.T. Doerflein, Project Engineer
S.D. Hudson, Senior Resident Inspector

Reviewed by: _____ 1-8-86
J.R. Stair, Reactor Engineer Date

Approved by: _____ 1/8/86
J.C. Linville, Chief, Reactor Projects Section 2C, DRP Date

Inspection Summary:
Inspection on October 21 to November 26, 1985 (Report No. 50-410/85-36)

Areas Inspected: Routine inspection by the resident and regional inspectors of work activities, procedures and records relative to Allegations, Quality Performance Management Program, preoperational test conduct, preliminary testing, electrical equipment, Operational Preparedness Plan and Reactor Core Isolation Cooling system walkdown. The inspector also reviewed licensee action on previously identified items and performed plant inspection tours. The inspection involved 110 hours by the inspectors.

Results: One violation was identified: Improper bolting hardware installed within the Remote Shutdown Panels (paragraph 9).

DETAILS

1. Project Organizations

Niagara Mohawk Power Corporation (NMPC)

Stone and Webster Engineering Corporation (SWEC)

General Electric Company (GE)

ITT-Grinnell Industrial Piping, Inc. (ITT)

Johnson Controls, Inc. (JCI)

Reactor Controls, Inc. (RCI)

2. Plant Inspection Tours

The inspector observed work activities in-progress, completed work and plant status in several areas during general inspection tours. Work was examined for any obvious defects or noncompliance with regulatory requirements or license conditions. Particular note was taken of the presence of quality control inspectors and quality control evidence such as inspection records, material identification, nonconforming material identification, housekeeping and equipment preservation. The inspector interviewed craft supervision personnel, and quality inspection personnel in the work areas. Observations are noted below:

The inspector identified a damaged instrument tube in the Reactor Building. SWEC issued Inspection Report I5A90109 to document the damage to tube R125.

The inspector was informed that non-safety related switchgear 16-2 had exploded and caused injury to several craftsmen. The accident has been investigated by OSHA. The inspector was informed that all switchgear were subsequently de-energized and cleaned out. SWEC has reviewed the electrical design, and a design change is forthcoming.

No violations were identified.

3. Licensee Action on Previously Identified Items

a. (Closed) VIOLATION (82-14-02): Inspection of high strength bolt structural steel connections. The licensee directed that a torque re-verification be performed for 200 connections installed by each the three contractors that had assembled structural steel. The results for the applicable contractors were as follows:

- L.K. Comstock: all 200 bolts were satisfactory.

- Higgins: 12 bolts of 202 inspected did not obtain the required torque. SWEC engineering reviewed the connections and found the as-installed conditions were not detrimental to the connection design. The snug tight bolts were re-torqued and a bolt with stripped threads was replaced in accordance with Nonconformance and Disposition (N&D) Report 5008.

- Cives: 68 bolts of 214 inspected did not obtain the required torque. The bolts that were snug tight were re-torqued in accordance with N&D report 5008. The snug tight bolt conditions were evaluated by engineering and the connections were found within allowable stress limits.

On the basis of the initial results, SWEC directed that all friction connections with oversized or slotted holes inside primary containment be reinspected. The reinspection involved 423 connections and 2,820 bolts. Seventeen (17) bolts were found with no torque and 126 bolts were undertorqued. All bolts were retightened to the appropriate torque. SWEC engineering concluded that the identified bolt problems would not have affected the integrity of the connections. N&Ds 7636 and 11,069 were generated to document and disposition the bolting deficiencies identified within primary containment. QA Inspection Plan (QAIP) N2HSBOLTFA001 was revised to perform surveillance inspection of different work crews on a weekly basis. This item is closed based upon the extensive licensee reverifications to ensure that critical high strength bolt installations have been properly torqued.

b. (Closed) CONSTRUCTION DEFICIENCY (83-00-09): Nonconforming material supplied by Tube-line. The inspector reviewed ITT letter ITT-LTR-6872 that described the following measures taken to identify field installed Tube-line material:

-- Fabrication isometrics associated with QA Category 1 safety related piping were identified.

-- All pertinent Requisitions on Stores that were on file at either QC Documentation or QC Receiving were reviewed to identify Tube-line material that had been used for the QA Category 1 isometrics.

ITT issued Deficiency Report 6362 to document that three (3) fittings had been installed in safety related systems. SWEC Nonconformance and Disposition (N&D) report 8544 documented the removal of the 20 inch flange installed in isometric 26-2. The inspector reviewed Returned Material Reports 84-0040 and 83-1103 that documented the return of the other two fittings to the supplier.

SWEC contacted site vendors to determine if other Tube-line material had been delivered to the site. RECO industries identified thirty six (36) twelve inch caps and nine (9) elbows that had been received

from Tube Line. Nonconformance and Disposition (N&D) report G142 documents the acceptability of the material based upon chemical analysis and physical testing.

Further licensee investigation in response to NRC inquiries identified twenty-six (26) additional Tube-line fittings as documented in N&D 13,118 and NMPC letter NMP2L-0520 to Region I. The material was found acceptable based upon chemical analysis and physical testing.

The following additional corrective actions were instituted by the licensee:

-- SWEC QC receipt group was directed to place any Tube-line material on hold that is delivered to the site.

-- SWEC receiving QC and procurement QA re-reviewed all purchase orders associated with companies that potentially received Tube-line material. No further Tube-line material was found onsite.

-- Other IE Bulletins (IEB) were re-reviewed to assure that corrective actions implemented in response to the associated 10 CFR 50.55(e) enveloped the entire problem scope described within the IEB.

This item is closed.

c. (Open) CONSTRUCTION DEFICIENCY (84-00-39): Improper conduct of weld radiography operations. The inspector selected a sample of shop and field welds for the NRC Nondestructive Examination van inspection. Licensee review of the weld sample and associated records identified a further case wherein a field weld had not been radiographed. The adjacent weld had been radiographed twice in lieu of the required weld. A single radiographer has been responsible for the three cases of duplicate radiography identified to date. The licensee committed to perform a re-verification on all welds radiographed by the individual in question. This item remains open.

d. (Closed) UNRESOLVED ITEM (84-06-06): Level of Quality Control inspection for non-safety related installations that are over Category 1 equipment. NMPC issued Corrective Action Request (CAR) 84.0017 to document the lack of QC Verification for non-safety related seismic installations. The following corrective actions were implemented:

-- SWEC Project Procedure (PP) 84, "Seismic Evaluation of Non-Nuclear Safety-Related Components (NNSRCs) in Nuclear Safety Related Areas" was revised to provide a minimum 10% QC surveillance inspection of the NNSRCs. The NNSRCs include piping, tubing, duct, conduit and cable tray supports, fire protection components, and mechanical equipment supports.

-- RCI reviewed the Quality Control (QC) program and found that all installations were treated as safety related.

-- ITT procedure FQC 4.2-14-17 was revised to require a 10% inspection of Category II supports in safety related areas.

-- JCI procedure QAS-1105 was revised to require a 10% inspection of applicable instrumentation supports.

-- SWEC QCI 10.11 was issued to provide instructions for performing the 10% inspection of NNSRCs. The instruction provides guidance on transmitting the sample results to engineering for evaluation.

The revised level of QC inspection will provide the requisite assurance that seismic non-safety related items will remain intact during Design Basis Events. The inspector reviewed the FSAR sections 1.8 and 3.2 that describe the NMPC commitment to Regulatory Guide 1.29. This item is closed based upon the level of QC inspection now required for NNSRCs.

e. (Closed) CONSTRUCTION DEFICIENCY (85-00-09): ITT issued trim installation details without SWEC approved design information. ITT issued Corrective Action Request 666 to document the issuance of the trim drawings. ITT issued a Stop Work Order 84-06 and recalled all planner packages associated with trim installation. The inspector reviewed the following documents that were issued to resolve the issue:

-- Nonconformance and Disposition Reports:

IG-5034, IG-5035, IG-5036, IG-5037, IG-5038, IG-5039, IG-5077, IG-5940, IG-5941, IG-5942, IG-5943, IG-6541, IG-6542, IG-6572, IG-6573, IG-6592, IG-6620, IG-6621, IG-6622, IG-6650 and IG-6676.

-- Engineering and Design Coordination Reports C03057 and P12,348.

-- SWEC Calculation PX-77038.

SWEC engineering found the as installed Category 1 trim acceptable. The piping installation requirements were amended to provide SWEC design information regarding proper trim installation. ITT engineering personnel were retrained regarding design control requirements. This item is closed.

f. (Closed) UNRESOLVED ITEM (85-19-05): Minimum Spent Fuel Pool level. The inspector reviewed various isometric drawings of the Spent Fuel Pool Cooling (SFPC) System and performed a walkdown of the SFPC system return lines to the reactor cavity and cask storage areas to verify that, considering the location of the line siphon breaker and

check valve, a failure of any one of these lines would only decrease the Spent Fuel Pool level by approximately twelve feet. The inspector noted that such a failure would leave approximately ten feet of water above any stored spent fuel. The inspector determined that this level complies with the position of Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis," and the acceptance criteria of the Standard Review Plan. (NUREG-0800), section 9.1.3, "Spent Fuel Pool Cooling and Cleanup System." The inspector had no further questions on this item.

g. (Open) UNRESOLVED ITEM (85-27-03): Welding of pipe supports across embedment plant seams. Nonconformance and Disposition Report 13578 was issued to document two further cases where the pipe support tube steel was welded across the seam. The inspector was informed that the supports, BZ-450DJ and BZ-410MW, had been reworked to rectify the weld configuration. The inspector reviewed informal SWEC engineering calculations of a finite element analysis that demonstrated the structural capacity of the original configuration. This item remains open pending completion of the SWEC Quality Control plant wide reinspection of embedment plates and development of formal SWEC calculations to show the adequacy of the supports identified above.

h. (Open) FOLLOWUP ITEM (85-99-18): Accuracy of FSAR information. The inspector compared FSAR Figure 5.4-9 to diagram FSK 27-6E. Valves F034 and F035 depicted in the FSAR were either deleted or moved on the flow diagram. The inspector additionally reviewed Licensing Document Change Notice (LDCN) NMPC-352 that amended Sections 9.1.4 and 7.7 of the FSAR regarding the fuel handling system. The LDCN had been generated in part to respond to previously identified NRC concerns. This item remains open.

4. Licensee Action on IE Bulletins and Circulars

The inspector reviewed licensee records related to the IE Bulletins and Circulars identified below to verify that: the IE Bulletins and Circulars were received and reviewed for applicability; a written response was provided if required; and the corrective action taken was adequate. Based on this review, the inspector closed the following IE Bulletins and Circulars for the reasons indicated.

-- IE BULLETIN 75-01, Through-wall cracks in core spray piping at Dresden-2.

The core spray piping is classified as ASME piping and will receive both hydrotest and pre-service examination prior to plant operation. The inspector reviewed FSAR sections 4.5, 5.2.3.4.1, 5.3.1, and 6.1 and noted the following:

- All plant piping subjected to an IGSCC environment is either carbon steel or L grade low carbon stainless steel with the exception of a shear plug in the Standby Liquid Control System.

- All Reactor Coolant pressure boundary material complies with NUREG 0313 Rev. 1.

- All balance of plant ASME piping complies with NUREG 0313 Rev. 1 except when the operating temperature is less than 200 degrees F or when the operation period at temperatures greater than 200 degrees F is less than 1% of the design life.

The inspector reviewed Safety Evaluation Report, NUREG-1047, sections 4.5, 5.2.3, 5.3.1, and 6.1.1 which accepted the plant material selection. On the basis of the required NDE and pressure testing in conjunction with the control materials in IGSCC environments, this item is closed.

-- IE BULLETIN 76-06, Stress corrosion cracks in stagnant, low pressure stainless piping containing boric acid solution at PWRS.

The inspector reviewed GE letter NMP-2-3039 that analyzed the Standby Liquid Control System (SLCS) characteristics because the stainless piping contains a boron solution. The analysis considered industry observations, piping design, control of chloride content, and control of piping stress levels. The analysis determined that the SLCS piping is not susceptible to stress corrosion cracking. The instituted measures are appropriate preventive measures for the condition identified in the Bulletin, this item is closed.

-- IE BULLETIN 83-06, Nonconforming material supplied by Tube-Line Corporation facilities at Long Island City, New York; Houston, Texas; and Carol Stream, Illinois.

Corrective actions for Tube-Line materials has been addressed by Construction Deficiency Report 83-00-09. Based upon the closure of CDR 83-00-09 in section 3.b of this report, this item is similarly closed.

5. Allegations

During the inspection period, the inspector conducted inspections and interviews in response to allegations presented to the NRC. The inspector and licensee actions resulting from the allegations are noted below:

a. (RI-85-A-111): The NRC was informed that SWEC personnel had been used to inappropriately generate RCI Quality Assurance records. The inspector reviewed the following RCI documents.

-- NMQAI-10-1, "Instruction for Quality Control Inspection"

-- NMQAI-17-2, "Instruction for Review, Turnover, and Supplementing Required Records"

-- Surveillance Inspection Report Nov 85-72.

-- Quality Control Prepackage Records Review Checklist.

The inspector was informed that SWEC Level II QC inspectors had performed prepackage reviews of RCI work packages and had provided problem descriptions on RCI Surveillance Reports. The inspector was informed that an RCI Level II verified the validity of the concerns noted by the SWEC personnel and then initiated the Surveillance Reports for action. The inspector noted that NMQAI-17-2 provides for a subsequent Quality review of the work packages by a RCI Level II reviewer.

Based upon the fact that:

-- the prepackage review was performed by a qualified person in accordance with a written checklist; and

-- the Surveillance Report was not a valid RCI quality document until verified and signed by an RCI Level II; and

-- the entire work package is subject to another document review by a RCI Level II reviewer;

The prepackage review does not violate regulatory requirements related to Quality Record review.

No violations were identified.

6. Quality Performance Management Program

The inspector reviewed the twenty-fourth Quality Performance Management Program (QPMP) reports. No violations were identified.

7. Preoperational Test Conduct

The inspector witnessed the conduct of portions of the following preoperational tests. The inspector verified that the most current test procedure revision was used, that the test prerequisites were complete, that calibrated test equipment was used, that test performance was in accordance with the procedure, that temporary modifications were properly documented, legibility of data entries, control of test interruptions, documentation of test discrepancies and other unusual events, presence of Quality Assurance (QA) personnel and control of QA holdpoints.

-- N2-POT-32, "Low Pressure Core Spray"

-- N2-POT-74-2, "Division II Emergency DC System"

-- N2-POT-74-3, "Division III Emergency DC System"

No violations were identified.

8. Preliminary Testing

The inspector witnessed portions of the following preliminary tests. The inspector verified use of the most current test procedure revision, use of calibrated test equipment, legibility of data entries, and conformance with the test procedure requirements.

-- N2-EPM-V3, "Limitorque Motor Operated Valve Testing Utilizing MOVATS-2000"

-- MD.0100.B03, "HPCS Diesel Generator Reliability Test"

The inspector noted the presence of NMPC Startup engineers, NMPC QA personnel and NMPC operations staff during the performance of the diesel generator reliability testing. Procedure N2-IOP-100.1, "HPCS Diesel Generator" was available to provide the necessary guidelines regarding the diesel operation. The inspector noted that the test data and performance was in accordance with Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants."

No violations were identified.

9. Electrical Equipment

The inspector examined the as-installed condition of Remote Shutdown Panel 2CES*PNL405. He reviewed the following documents associated with the panel:

-- Nonconformance and Disposition Reports 11,815 and 13,548.

-- NMPC Surveillance Report E84-1227

-- Electro-Mechanics Drawings 42450G Sheet 3, 42453F Sheet 12, 42435H Sheet 8, and 42453H Sheet 9.

The inspector identified that part number 281 was specified as a 1/2 inch diameter screw for the unistrut attachment. Examination of the panel showed that in several cases 3/8 inch diameter screws had been substituted, without engineering approval, in lieu of the 1/2 inch screws for the unistrut channel connections. The unistrut channels support various rotary switches within the panel. The inspector was informed that SWEC Procurement Quality Assurance had performed surveillance of the Remote Shutdown Panel installation. The failure of SWEC Quality Assurance to perform inspections to ensure the proper installation of the Remote Shutdown Panel is a violation of 10 CFR 50, Appendix B, Criterion X. (85-36-01)

10. Operational Preparedness Plan

The inspector reviewed the NMPC Preparedness for Operation Plan (POP). The POP was developed to assure that all required NMPC procedures have

been developed, that requisite training has been accomplished and that responsible organizations are prepared for the operation of the plant.

The POP consists of three phases:

-- Phase I: Consists of a self evaluation by responsible organizations utilizing checklists prepared by Quality Assurance personnel. This is to be completed by December 1985.

-- Phase II: Consists of a presentation of the POP scope to NRC personnel.

-- Phase III: Consists of Quality Assurance team review of the following areas - Inspection program, design control, maintenance program, surveillance testing, test equipment control, review committees, non-licensed training, QA records, document control, procurement, material handling, QA audits, plant procedures, radwaste, radiation protection, fire prevention and security. Phase III is scheduled to be complete prior to Fuel Load. The inspector obtained the POP checklists that had been developed for the areas described above.

No violations were identified.

11. Reactor Core Isolation Cooling System Walkdown

The inspector accompanied NMPC Startup QA during a turnover walkdown of the Reactor Core Isolation Cooling (RCIC) system. The installed components were examined for construction attributes and conformance with drawings FSK-27-6D, FSK-27-6B, FSK-27-6C, PID-35A-1, and PID-35B-1. The inspector noted the turbine bearing oil level sight glass had not been scribed, he was informed that the turbine vendor has been scheduled to perform this prior to the preoperational test. The inspector noted that NMPC Deficiency Report 9112 was issued to document the inadequate cleanliness condition of the turbine end bearing. No violations were identified.

12. 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. An apparent violation of NRC requirements was discussed with licensee plant management during an exit meeting held on November 26, 1985. Based on the NRC Region I review of this report and discussions held with licensee representatives on October 18, 1985, it was determined that this report does not contain information subject to 10 CFR 2.790 restrictions.