U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-410/85-06

Docket No. 50-410

License No. CPPR-112 Category A

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

Facility Name: Nine Mile Point Station, Unit 2

Inspection At: Oswego, New York

Inspection Conducted: March 4-8, 1985

Inspectors: G. Napuda, Lead Reactor Engineer — 4/18/85 date

K. A. Manoly, Lead Reactor Engineer — 4/15/85 date

H. Van Kessel, Reactor Engineer — 4/18/85 date

Approved by: Dr. P. K. Eapen, Acting Chief
QA Section, DRS — 5/7/85 date

Inspection Summary: Inspection on March 4-8, 1985 (Report No. 50-410/85-06)

Areas Inspected: Routine announced inspection of the "Turnover" portion of the Quality Assurance Program for pre-operational testing including QA/QC overview and interface activities. The inspection also included a review of construction activities related to installation of safety related pipe supports for the Recirculation and the Control Rod Drive Piping Systems. The inspection involved 112 inspector-hours by three region-based inspectors.

Results: No violations were identified.

1.0 Persons Contacted

Niagara Mohawk Power Corporation (NMPC)

G. Afflerbach, Startup and Test (SUT) Manager
W. Baker, Special Projects Engineer
C. Beckham, Manager - Project QA
G. Cox, Senior Field Engineer
J. Orlando, SUT QA Manager
D. Palmer, Nuclear QA Manager
D. Quamme, Project Director
M. Ray, Manager - Special Projects
J. Sheperd, SUT QC Lead Inspector
J. White, Special Projects Engineer

New York Public Service Commission (NYPSC)

J. DeSantis, Construction Monitor

Reactor Controls Inc. (RCI)

T. Autagne, Site Manager
M. Plumb, Project QA Manager
G. Seccis, Engineering and Construction Manager

Stone and Webster Engineering Corporation (SWEC)

T. Arrington, Resident Manager
T. Baumgartner, Site QA Supervisor
C. Bishop, Deputy Project Manager
E. Eichen, Construction Engineer
W. Eifert, Chief Engineer - Engineering Assurance (Boston)
E. Fleming, Chief Engineer - QA Audit Division
J. Gallagher, Startup Group Licensing Engineer
R. Hyslop, Site Licensing Engineer
J. Kappas, General Superintendent - Construction
G. Pierce, Site QA Supervisor
A. Rovetti, Supervising Engineer
C. Terry, Project QA Manager

NRC

R. Gramm, Senior Resident Inspector
S. Hudson, Senior Resident Inspector (Unit 1)
R. Wheeler, Resident Inspector

In addition to the above exit interview attendees, the inspectors also held discussions and interviews with engineering, I&C, technical, QA/QC, and SUT personnel.

2.0 Licensee Action on Previous Inspection Findings

(Closed) Violation (410/83-18-80): Marking of ASME Class I, Linear NF Support Components.

The violation is related to the requirement in ASME III, Subsection NF, for marking of linear support components as required for traceability to CMTRs.

The specific case cited in the violation was identified on the Recirculation Piping System loop (A) support mark No. HA1(B). The GE component installation drawing for the pipe support identified the welding lugs as linear components; however, no traceability markings were found on these lugs.

The inspector reviewed the following documents:

-- GE letter #HHE84-562 to Stone and Webster including attachment FDDR No. KGI-0191 for final disposition

-- Bergen Paterson letter of March 7, 1984 to GE addressing the recommended action for resolution.

The corrective action in GE's FDDR No. KGI-0191 was to reclassify the referenced lugs to their actual classification as component standard supports (CSS). Bergen Paterson (the supplier) had recommended this action for all B-PCC hanger drawings except parts No. 52035 (Rigid Struts) and 56133 (Riser Clamps). The inspector verified that the lugs were originally misclassified.

The inspector also reviewed the following GE drawings to verify the implementation of this reclassification:

HA1(A), HA1(B), HB1(A), HB1(B), HA2, HB2, HA3, HA4, HB4, HA5, HB5, HA7, HB7, HA8, HB8, HA9 and HB9.

No discrepancies were identified. This violation is closed.

(Closed) Inspector Followup Item (410/83-18-59): Material Traceability Markings on ASME III Class I Hangers.

This item addresses the same concern identified in the previous item (Violation 410/83-18-80). Material identification and traceability markings were not found on parts of ASME Class I linear NF hangers in the Reactor Recirculation System. Markings were not found on the welding lugs, two pins, and a rod for pipe support BZ-70K-1 and attached pipe support accessories HA1(B).

The resolution of this item has been implemented by reclassifying the support components as "Component Standard Supports" rather than "linear" as shown on GE drawings (see resolution of Violation 410/83-18-80). The root cause was correctly identified by the licensee as an implementation problem (misclassification). This item is closed.

3.0 QA Program for Turnover

3.1 References

(1) Nine Mile Point 2, FSAR Chapters 14 and 17

(2) Construction Site Instruction CSI 2.13, Revision 1, "Release and Turnover of Systems and Subsystems", dated March 2, 1985, prepared by SWEC

(3) Startup Administrative Procedure N2-SAP-107A, "System Release", Revision 1, effective date 2-22-85, by NMPC

(4) Startup Administrative Procedure N2-SAP-107B, "System Turnover", Revision 0, effective date 12-11-84, by NMPC

(5) Startup Administrative Procedure N2-SAP-108, "Planning and Scheduling", Revision 0, effective date 12-18-84, by NMPC

(6) Startup Administrative Procedure N2-SAP-117, "Work Control and Work Control Report", Revision 1, effective date 12-18-84, by NMPC

(7) Startup Administrative Procedure N2-SAP-121A, "Deficiency Reporting System, Revision 1, effective date 2-22-85, by NMPC

(8) Startup Administrative Procedure N2-SAP-121B, "Deficiency Tracking System", Revision 0, effective date 12-11-84, by NMPC

(9) Startup Administrative Procedure N2-SAP-124, "Interim Operating Procedures", Revision 0, effective date 11-26-84, by NMPC

(10) Procedure QAS-1802-NMP2, "Review and Turnover of Category I Quality Assurance Records", Revision 3, dated 1-5-85, by Johnson Controls, Inc.

(11) Quality Control Instruction QCI 6.02, "Closing N&Ds and UNSAT IRs With NMPC Deviation Reports", Revision 0, dated 3-1-85, by SWEC

(12) Quality Control Instruction QCI 11.01, "Installation Completion and Release", Revision B, dated 3-4-85, by SWEC

(13) Quality Control Instruction QCI 11.03, "Processing Work Control Reports", Revision 0, undated, by SWEC.

(14) Internal Memorandum from Startup and Test (NMPC) on noncompliance with procedure CSI2.13, paragraph 4.2.4, dated 2/1/85.

3.2 Program Review

3.2.1 The procedures referenced in Section 3.1 were reviewed and discussed with the licensee and SWEC. A presentation was given by the licensee to describe the startup program and the plant turnover system.

3.2.2 A flow diagram was developed by the inspector for the system turnover process. The turnover procedures, referenced in Section 3.1, and the information obtained from the presentation (see 3.2.1 above) and from discussions with key members of the startup group, constituted the basic inputs for the diagram. The licensee was requested to review the flow diagram for accuracy and to provide corrections and additional information for the finalization of same. The final version of the diagram will be used by NRC inspectors to improve the efficiency and effectiveness of their efforts.

The following observations were made in the course of preparing the flow diagram:

3.2.2.1 Niagara Mohawk Power Corporation accepts (sub)systems and plant components before any construction proof testing has been performed on same. There are two types of releases, types "A" and "B." Under the type "B" release, plant components and their auxiliaries are released as a package for construction proof testing. The condition for the type "B" release is that the package must be complete and free of defects to the extent that meaningful preliminary testing (same as construction proof testing) can be performed. The system test engineer, responsible for the system, is to determine what recorded deficiencies and incomplete items of the "B" package must be corrected or completed to meet the testability requirement stated above. A number of type "B" releases are usually required to effect a type "A" release which is a (sub)system release. A type "A" release has to be made to do the flushing of that system in the case of piping systems.

3.2.2.2 There are joint walkdowns scheduled for the type A and B releases as well as for system turnovers. There are no separate procedures for these walkdowns, but the composition of the joint walkdown team is discussed in the turnover procedure.

3.2.2.3 Flushing is done as a preliminary test before the hydrostatic test of the system. Since the pump of the system normally is used in the flushing operation, the pump and connected piping and valves have to be released under a type B release prior to the flushing operation. An important part of the piping release is the check for the adequacy of the installed snubbers and hangers to sustain the static and hydrodynamic loads incurred by the piping during the initial system fill and during initial pump operation.

While there is a paragraph (4.2.4) of CSI 2.13 covering this check, there is not enough elaboration of this requirement in the pertinent procedures to assure execution of this requirement (see 3.4).

3.2.2.4 Hydrostatic test of the fluid system has to be completed before turnover but can be done after the "A" release of the system.

3.2.2.5 Deficiencies discovered during the preliminary testing can be corrected by NMPC under a Deficiency Report (DR) if they elect to do so. This work is done by a separate construction group dedicated to startup activities. This group has all the necessary disciplines to perform the work and reports to NMPC construction. If this course of action is not selected by Startup and Test (SUT), the work is done under a Work Control Report (WCR) by the responsible contractor. If the scope of work is significant, the WCR route is usually selected.

3.2.2.6 A general computerized punch list is used to record and track incomplete or deficient items. It is called the Master Tracking System (MTS). Each project party is made responsible for their input items to MTS. It lists hardware and software items.

3.2.2.7 There are prerequisite items, as identified by the system test engineers, for type "A" and "B" releases and the system turnover. These items must be completed prior to system release or turnover. There is no emphasis placed on the identification of these items in the MTS nor in the turnover procedure.

3.3 Implementation Review

3.3.1 During the discussion with the licensee on the subject of the prefill/flush review of hanger and snubber adequacy, it became apparent that there were no sign-off provisions for these prerequisites in the flush or hydrostatic test procedures. In fact, the flushing of most systems had been performed without making the required comparison of installed hangers against minimum listings provided by the architect engineer, Stone and Webster. An internal memorandum had been issued by Startup and Test recently (2-1-85) to follow up on this omission.

3.3.2 In discussions with the licensee, it was observed that the lack of clarity in the sequencing of events detracted from the effectiveness of the turnover procedure in the implementation of the program. There was concern in the SUT Group, for instance, about the completeness of the inputs to MTS as supplied by the various contractors. Therefore, updating of the MTS was receiving much attention recently because there were many instances where preliminary testing rediscovered deficiencies which should have been recorded in the MTS and eliminated before release was made.

3.4 Findings

A comparison between installed pipe hangers and snubbers and the required minimums specified by the architect engineer had not been completed as required by paragraph 4.2.4 of procedure CSI 2.13 (Reference 2). The Startup and Test (SUT) group had recently identified this omission and issued a general letter (Reference 14) to correct the condition. Since most of the flushing of safety related piping has been done, the corrective measures will be an after-the-fact comparison of the number of dead weight hangers installed before the initial fill of the system, and the number of snubbers installed prior to the initial pump operation for system flushing, against those specified minimums.

This is an unresolved Item (50-410/85-06-02) pending NRC review of the licensee's corrective actions in this matter.

Procedure CSI2.13 for the turnover of systems lacks clarity on the sequence and prerequisites for turnover events and activities. It is this weakness which led to the omission of the requirements, embodied in paragraph 4.2.4 of the above procedure, in the hydrostatic test and flushing procedures. (See paragraph 3.3.1). The same weakness is demonstrated by the MTS updating problems (see paragraph 3.3.2) and the lack of joint walkdown procedures (see paragraph 3.2.2.2). This item remains unresolved pending NRC review of the effectiveness of the Licensee's corrective action in this regard. (Unresolved Item 50-410/85-06-01).

4.0 QA/QC Interface and Overview Activities

4.1 References/Requirements

-- FSAR Chapter 17, Quality Assurance

-- Quality Assurance Procedure (QAS)-1802-NMP2, Review and Turnover of Category I Quality Assurance Records, Revision 3

-- Quality Assurance Instruction (QAI)-2.10-01, Training of Startup QA Personnel, Revision 0

-- Quality Control Instruction (QCI)-6.02, Closing N&Ds and Unsatisfactory IRs with NMPC Deviation Reports, Revision 0

-- QCI-11.01, Installation Completion and Release, Revision B

-- QCI-11.03, Processing Work Control Reports, Revision 0

4.2 Program and Implementation Review

The references in Paragraph 4.1 and those as appropriate in 3.1 were reviewed, discussions and interviews were held with personnel and various activity logs and reports were reviewed. The foregoing was to determine the level of QA/QC overview effort and adequacy of personnel qualifications. Scheduling of overview activities, supplementary training, appropriate staffing and quality element trending were also reviewed.

A major redelegation of QA/QC overview responsibility from Niagara Mohawk Power Company (NMPC) Project QA group to the NMPC QA-Nuclear group was completed the first week of January 1985. The Startup QA group of QA-Nuclear will now conduct independent overview of activities associated with components/systems under the jurisdiction of the plant. This group is directed by a Startup QA Manager who reports to the onsite Manager, QA-Nuclear. The staff consists of a Supervisor-Audits and ten Auditors/QA Engineers, a Supervisor-Test Activities and 21 Surveillance/QA Engineers, and a Lead Inspector and eight Inspection/QA Engineers. Currently, a major portion of the staff is contracted personnel, including the two supervisors and Startup QA Manager. The Licensee's present intent is to gradually transfer staff from Project QA as construction activities are reduced. Such transfers have already occurred and are in process.

When it is necessary to "turnback" a component/system to the construction forces for additional/corrective work, the QA/QC overview again becomes the responsibility of Project QA and Stone and Webster Engineering Corporation (SWEC) QA/QC. The NMPC/SWEC QA/QC overview and interfaces during construction activities are discussed in IE Inspection Report 410/84-18, Paragraph 6. In preparation for the release of components/systems to the Startup and Test group, SWEC Field QC (FQC) reviews the Component Status List (CSL) and makes additions to the Master Tracking System (MTS). The computer data base CSL was developed by SWEC FQC and has the capability to search and identify components in a system, the status of inspections vs. work completed for the component, records associated with the component beginning with the Purchase Order, etc. Information supplied by the three major onsite subcontractors is still being entered into the data base. FQC also conducts a Final Installation Acceptance (FIA) walkdown that is a configuration type inspection and includes detailed examinations such as cable separation and terminations.

The NMPC QA-Nuclear group does an "in-line" review of work control and corrective action documents, reviews test procedures and overviews these test activities. Monitoring of work is accomplished mainly by surveillances which are preplanned and random (i.e., moment of opportunity). Generic checklists have been prepared for repetitive activities and also for one-time or "unique" work. Specific individuals are assigned to given systems and are responsible for day-to-day contacts so as to ensure that QA/QC remains abreast of activities. QA/QC overview is provided whenever work is ongoing and the intent is to continue such shift-for-shift coverage. Schedule loading is also being reviewed to better plan QA/QC resource needs. Audits have been initiated and 16 have been scheduled for 1985 to address mostly functional activities such as records, design changes and training. QA-Nuclear is also involved in other review activities including NRC findings, 50.55e applicability to deficiencies and Boundary Identification Packages (BIP), and the inspection of completed work and trending analysis input.

A matrix has been developed that identifies the supplementary training needs of incoming personnel as well as incumbents. Completed training is also identified and tracked by a matrix. Evaluations are ongoing to determine what qualifications are required for given positions and the matrices will identify/indicate those needing specific training. This effort is described in Draft QAI-2.10-01, Training of Startup Personnel, Revision 0.

4.4 Conclusions

The current and planned overview activities indicate considerable involvement by QA-Nuclear in ongoing work. Staffing is currently keeping pace with activities as they increase and planning for resources is evident. The supplementary training program has been initiated and expansion is planned as needs are identified. The audit program has been established and implemented. The trending of quality elements has only recently begun and could be improved by the addition of qualitative analysis factors. The approximately 100 surveillances and one walkdown to date indicate the readiness of QA-Nuclear to closely monitor ongoing work. Overall, the QA/QC overview function appears capable of executing its responsibilities.

No violations were identified.

5.0 Safety Related Pipe Support Systems

The inspection of safety related pipe support systems focused on activities of Reactor Controls Inc. (RCI) in construction installations of safety related pipe supports. The objective of this inspection was to determine whether acceptable engineering practices, regulatory requirements and licensee commitments had been met.

RCI is a subcontractor to Stone and Webster Engineering Corporation (SWEC), the Architect/Engineer for the facility. RCI activities were assessed in pipe support installations for the following systems:

-- Reactor Recirculation System (RCS) - ASME Class 1

-- Control Rod Drive Hydraulic System (CRDHS) - ASME Class 2

To achieve the above-stated objective, the following areas were examined:

-- Field inspection of completed support installations

-- Observation of work activities in progress

-- Review of Procedures and Instructions

-- Review of QC Inspection Records

5.1 Field Inspection and Observation of Work Activities

Observation and inspection of field activities were performed in the reactor building for the RCS pipe supports in loop (B), and the CRD system pipe supports for the Scram Discharge Volume (SDV) header and Insert/Withdraw (I/W) piping. The CRD system was inspected inside the primary containment (Enterprise Area) and outside the containment where it is supported from the Multi-Function supports.

The design of the RCS system piping and supports is performed by GE, whereas the installation and quality control are the responsibility of RCI. The CRD system piping and supports are designed, procured, installed, and inspected by RCI. All completed installations in the CRD system are being reinspected by QC as a result of construction deficiency findings by the licensee (Corrective Action Reports #84.0042 and 84.0043). The hardware reinspection of the Enterprise Area is 75% complete. The reinspection of the CRD Multi-Function Supports will start in April 1985.

Engineering audits of RCI activities as well as Quality Assurance audits in document control and personnel training are performed by SWEC and Niagara Mohawk Power Company.

Welding related activities for installations are controlled by the Process Requirement Sheets (PRS) which designate the required drawings, welding and NDE procedures. Overall installation activities by RCI are performed in accordance with NMP2-P301V, Specification for Fabrication and Erections. Piping installations in the CRD system were performed utilizing the PRS's which are typically assembled by engineering and reviewed by construction personnel before implementation. As a result of the current revamping and upgrading of the RCI work control program, installation activities are controlled through Work Planner Packages which supersede the PRS's and provide a checklist of all required documents, specifications, drawings, implemerting procedures, etc. Implementation of Work Planners will impact approximately 10% of the remaining installation work to be performed by RCI.

Walkdown inspections of the Recirculation Piping Supports included installations HB1A, HB1B, HB-7, HB-8 and HB-9.

The following GE drawings were used in the inspection:

-- VPF 6018-366

-- VPF 6018-342

-- VPF 6018-358

-- 767E722, Sheet 1

-- 767E722, Sheet 2

-- 767E722, Sheet 3

Walkdown inspection of the CRD system pipe supports included the following Multi-Function and Enterprise Area installations:

-- 011 I/W 5A : 90° Azimuth in Secondary Containment

-- 011 I/W 6A : 90° Azimuth in Secondary Containment

-- 011 I/W 15A : 90° Azimuth in Secondary Containment

-- SH-14A : 8" Scram Header Support (at 90°)

-- SH-16A : 8" Scram Header Support (at 90°)

-- SH-31B : 8" Scram Header Support (at 90°)

-- SP-27 : Scram Supply Line Support (at 90°)

The following RCI drawings were used in the inspection:

-- NMP-008 Sheet 1 : CRD Multi-Function Support Plan EL. 280'-7½"

-- NMP-008 Sheet 3 : CRD Multi-Function Support Plan EL. 274'-1"

-- NMP-011 IW 5A : Insert and Withdraw Hanger Detail 5A

-- NMP-011 IW 6A : Insert and Withdraw Hanger Detail 6A

-- NMP-011 IW 15A : Insert and Withdraw Hanger Detail 15A

-- NMP-027 Sheet 2 : Scram Header Lines Hanger Locations

-- NMP-027-SH-14A : Scram Header Hanger Detail #14A

-- NMP-027-SH-16A : Scram Header Hanger Detail #16A

-- NMP-027-SH-31B : Scram Header Hanger Detail #31B

-- NMP-019 Sheet 2 : CRD Scram Vent and Supply Line Hanger Locations

-- NMP-019SL-27 : Supply Line Hanger Detail #SL-27

Verification of the Reactor Recirculation and CRD system piping support installations included the following attributes:

- Checking actual configurations against support drawings, including dimensions;
- Checking directions in which hangers restrain piping and the clearances between piping and hangers;
- Checking connection to the proper structure;
- Checking sizes of welds on hangers, including welded attachments to pipe;
- Checking that the restraint bleed holes are open and free from foreign material;
- Checking that spring hangers are located prior to performance of hydrostatic testing; and
- Checking that movement of piping due to vibration, thermal expansion, etc., would not likely cause contact with other pipes, supports, equipment or components.

5.2 Review of Procedures and Instructions

Applicable sections of the following documents were reviewed, in part, to verify that applicable regulatory requirements, design basis and FSAR commitments for system component supports were correctly translated into specifications, procedures, and instructions. The documents reviewed were:

-- Specification No. NMP2-P301V for Design, Fabrication, and Erection of the CRD Hydraulic System, Erection of the Recirculation System and Installation of the Reactor Pressure Vessel Internals - ASME Code, Section III, Division 1

-- RCI Quality Assurance Manual, Second Edition, Revision 9 and addendum NM-1 for NMP Nuclear Station, Unit #2

-- Quality Assurance Instruction - Project Specific Document No. QAI-F

-- General Welding Specification GSW-1-01

The specification covers the welding program to be used at NMP #2 (qualification, filler metal, base material, prewelding considerations, welding, post-welding considerations, repair to weld metal, weld inspection, etc.)

The Specification also covers all required welding documents such as WPS, PQR, PRS, WDS, WQR, FSC and MS.

-- Supplement to General Welding Specification GWS-1-01-S1

5.3 Review of QA/QC Records

Review of quality records related to the installation of the Recirculation Piping was performed as part of this inspection to determine whether the licensee's contractor is adequately preparing and maintaining a system of quality records; whether there is reasonable assurance that the records reflect work accomplishment consistent with NRC requirements and FSAR commitments; and whether the records indicate any potentially generic problems, management control inadequacies, or other weaknesses that could have safety significance.

The following records were reviewed in part:

-- Procedure RECIRC-1 for installation of Recirculation Piping

The document invokes the use of GE documents 22A6792, 22A6793 and 22A6794 titled "Installation Instructions for GE Piping System." The procedure calls for the implementation of RCI QA program and identifies all the procedures required to be provided by RCI for welding, NDE examination, etc., to support GE specifications.

The procedure also calls for the use of the following documents for hanger installations:

-- Pacific Scientific (PS-228) instructions manual for installation and maintenance of mechanical shock suppressors.

(RCI Controlled Document #VPE-6267-3-4)

-- Instruction PO-205-YA286 for recirculation loop pipe hanger and support installations

The document provides instructions related to bolts, nuts, locknut torque values, in-service inspection, etc. It also includes copies of Bergen Paterson Instructions applicable to installation of recirculation piping supports.

-- Process Requirement Data Sheets (PRS) W-6 for installation of Recirculation Piping Hangers, Snubbers and Whip Restraints. The PRS identifies the required drawings by number, weld position and quantity, applicable documents, welding procedure specification, NDE procedures for visual and final inspection. The PRS also invokes the use of the following procedures:

  -- VE-10: Visual Inspection Procedure for Structural Steel Welds - Component Supports

  -- ME-1: Magnetic Particle Examination Procedure

  -- Welding Procedure Specification (WPS) W-1/1-5 and Procedure Qualification Record (PQR)

-- Customer supplied material receiving and inspection reports #C-059 and C-045 for RCI inspection of components for recirculation piping hanger Nos. HB1A, HB1B, HB7, HB8 and HB9 upon retrieval from the warehouse

-- Material Receiving Reports (MRR) #82-9350 and 82-5483 for SWECs QA inspection of recirculation piping hanger components identified above

-- QC sign-off for fit-up inspection attributes outlined in QAI-10-1, Section 4.5, for fit-up inspection and Data Sheets for the recirculation hangers identified above

-- Certificate Holder Partial Data Report for parts of component supports HB8 & HB9

5.4 Findings

5.4.1 CRDHS, Process Requirement Sheets PRS-W7 invokes RCI's General Welding Procedure GWS-1-01. Limits for off-set in fit-up alignment of welded members are established in Section 7.1 of the procedure. The maximum off-set of the finished joints is 1/8" or 1/4T (whichever is smaller)and T is the thickness of the thinner of the two base metals.

A welding note on CRDHS Multi-Function Support Drawings NMP-008 requires that parts to be fillet welded are to be as close as practical, but not separated by more than 3/16". It also requires that fillet weld sizes be increased by the amount of separation when it exceeds 1/16". The conflicting requirements between the welding procedure and the installation drawings would lead to uncertainty regarding inspection of completed welds, particularly those specified as "all-around" between connected members. An RCI QC inspector identified this conflicting requirements as he could not determine which criteria to use for acceptance or rejection of welded joints.

The disparity in the requirements for acceptance criteria of fit-up alignment of fillet welded members as outlined in the above cited project documents is an unresolved item pending licensee response and NRC review (410/85-06-03).

5.4.2 General notes of RCI Drawing No. NMP-027-SH-A for Scram Discharge Header Support hangers at 90° and 270° specifies a standard clearance of 1/16" ± 0" to 1/16" between piping and support unless otherwise noted. Scram header support #SH-16A (bilateral restraint) was installed with zero clearance on all sides as indicated on the installation drawing.

According to GE Design Specification #22A7690, the design temperature for the CRD volume piping is established as being from 70°F to 450°F in design condition II. Installation of supports with zero clearance would in effect provide a restraint to the radial and longitudinal expansion of the piping which will then result in an overstress of the piping and/or the support in excess of design limits. This item is unresolved pending licensee response and NRC review. (410/85-06-04)

No violations were identified.

6. Minimum Size of Fillet Welds for Linear Type Supports

SWEC requested invoking ASME Code Case N-413 which provides a more liberal criteria for minimum size of fillet welds for linear type supports installed to ASME Section III, Division 1, Subsection NF as indicated in Table NF-3324.5(d)(1) and Appendix XVII, Table XVII-2452.1-1. The implementation of this code case and its addition to the FSAR Table 5.2-1 requires NRC approval since it is not included in Regulatory Guides 1.84 or 1.85.

7. Control of Measuring and Test Equipment (M&TE)

The M&TE issue/storage area was toured and discussions were held with responsible supervisors to determine whether such instruments were adequately controlled and personnel were knowledgeable of requirements as described in SAP-115, Control of Measuring and Test Equipment, Revision 2.

The calibration of instruments is done primarily by the onsite Stone and Webster Engineering Corporation (SWEC) Calibration Laboratory. Instrument recall is accomplished by a tickler file and a computerized listing. The calibration interval, issue/return and user are noted on a History Log. Another log card is attached to items and each use is entered including the numerical range utilized. An access list of persons authorized to receive/use instruments is maintained and proper environmental storage is required should the item remain in use beyond the shift during which it was issued.

Should the instrument be found out of tolerance during calibration, an Out of Calibration Report is issued that includes a retrace log of use, an evaluation of past history and a decision on action with regard to the particular instrument. A Deficiency Report is generated when it is determined that retesting/recalibration of lesser tier items is required.

Access to the issue/storage area is controlled as is temperature. New purchases and items with expired calibration are segregated and kept in locked cabinets. The instruments are also segregated and labelled as to the physical conditions under which they are used such as acid, clean air or oil. Items are stored on shelving in sealed containers or cases and in a neat fashion. The area is also clean although on the verge of being overcrowded.

Licensee representatives indicated that NMPC anticipates acquiring the SWEC Calibration Laboratory for its own use. The laboratory is discussed in IE Inspection Report 410/84-18.

It was concluded that NMPC adequately controls, protects and stores instruments under their jurisdiction.

No violations were identified.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable, deviations, or violations. Unresolved items identified during this inspection are detailed in Paragraphs 3 and 5.

9. Management Meetings

Licensee management was informed of the scope and purpose of the inspection at an entrance interview conducted March 4, 1985. The findings of the inspection were discussed with licensee representatives during the course of the inspection. An exit interview was conducted March 8, 1985 at the conclusion of the inspection (see Paragraph 1 for attendees) at which time the findings were presented to licensee management. The licensee's management acknowledged the inspection findings.

At no time during this inspection was written material other than the turnover flow/decision tree diagram provided to the licensee by the inspectors.