

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-410/85-29

Docket No. 50-410

License No. CPPR-112

Licensee: Niagara Mohawk Power Corporation

Facility Name: Nine Mile Power Station Unit 2

Inspection At: Scriba, New York

Inspection Conducted: September 30 - October 4, 1985

Inspector: A. J. Lodevick for E.H.G. 10/21/85
E. H. Gray, Lead Reactor Engineer date

Approved by: A. G. Vardak for 10/22/85
J. T. Wiggins, Chief, Materials and Processes Section, EB, DRS date

Inspection Summary: Inspection on September 30-October 4, 1985 (Report No. 50-410/85-29)

Areas Inspected: Routine unannounced inspection by one region based inspector of licensee activities on previously identified unresolved items and violations. The areas inspected included impact test data for Class 1 pipe weld procedures, the resolution of bioshield wall ultrasonic welding indications, documentation of preheat and postweld heat treatment on pipe restraint structures, RCI welder qualification documentation and RCI planner signoff practice by QC inspectors. The inspection involved 36 inspector hours on site and five hours of in-office inspection.

Results: No violations were identified.

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1. Persons Contacted

Niagara Mohawk Power (NMP)

- *C. Beckham, QA Manager
- W. Friedrich, QA Projects
- *W. Hansen, Nuclear Operations QA Manager
- *T. Kolceski, Special Projects
- *T. Lee, Special Projects
- *C. Millian, Lead Sr. NC&V Engineer
- *B. Morrison, Manager, Quality Engineering
- *M. Ray, Manager, Special Projects
- C. Spooore, QA Projects, Inspector
- B. Weakley, Special Projects
- *J. White, Special Projects

Stone and Webster Engineering Company (SWEC)

- *T. Baumgartner, QA Supervisor
- *J. Gallagher, Licensing Engineer
- R. Hyslop, Licensing Engineer
- G. Philippi, Principal Mechanical Engineer
- G. Rodgers, Principal Materials Engineer
- *A. Rovetti, Supervisor Engineer
- *C. Terry, Project QA Manager

ITT Grinnell

P. Moore, Lead QC Inspector

Reactor Controls Incorporated (RCI)

R. Hall, Project QA Manager
R. Triebwasser, QA, Welding

*Attendees at exit meeting.

2. Followup on Previously Identified Unresolved Items and Violations.

- 2.1 (Closed) Unresolved Item (410/82-03-02) and (Closed) Violation (410/82-08-01): Class 1 piping, weld procedures requiring impact testing per NB-2300. As documented in Inspection Report 410/82-03, the ITT Grinnell review of ASME III, Subsection NB Class 1 components identified 102 piping weld planners that did not show the required impact qualified weld procedures. Seven of these welds were completed at the time of the finding. The violation (410/82-08-01) resulted from upgrading of the 410/82-03-02 unresolved item.



This issue, including corrective actions is discussed in the August 31, 1982 letter (Manno to Starostecki) as the final report for a potential deficiency under 10 CFR 50.55(e). The Niagara Mohawk response to the Notice of Violation including corrective actions and preventive measures to preclude recurrence was presented by letter dated October 4, 1982 (Mangan to Starostecki).

The inspector reviewed the above unresolved item, resulting violation and documentation of corrective actions taken.

The seven welds made with non-impact tested weld procedures were cut out and rewelded per WP 5-4 (E70S-2) and WP 1-3 (E7018) procedures that were properly impact tested per the ASME Code Section NB 2300. The process planners for the other 95 welds were revised to require welding with the above impact tested weld procedures.

The inspector reviewed the applicable Class 1 pipe weld procedures and sampled planners and weld records for the following welds involved in the original problem.

Main Steam-ISO 1-15 Weld 008
Main Steam-ISO 1-14 Weld 008 (Rewelded)
HPCS-ISO 25-9 Weld 009

Corrective actions and steps to preclude recurrence were found to have been taken as stated in the licensee's letters.

2.2 (Closed) 50.55(e) Report (79-00-02): Linear indications in shop welding of Bioshield Wall (BSW) components.

The Biological Shield Wall is a concrete filled structural steel ring surrounding the reactor vessel. It is approximately 32' OD x 28' ID x 48' high. The inner and outer steel shells and vertical and horizontal stiffeners are 1½" thick type A537 Class 1 (GR 50) material. During field installation of BSW components Magnetic Particle (MT) and Ultrasonic Examination (UT) located defects in shop welds that exceeded allowable defect sizes permissible by the American Welding Society D1.1 code. The defects were generally in the vicinity of the root area of single bevel backing bar welds. The problem was initially reported as a potential reportable deficiency under 10 CFR 50.55(e) on May 30, 1979. Subsequent non-destructive examinations, analyses, review of safety implications and determination of required corrective actions resulted in an Interim Report (April 15, 1980, Terry to Carlson), the Biological Shield Wall meeting with NRR on June 10, 1980, and the final report (August 1, 1980, Dise to Carlson). In conclusion, after extensive engineering evaluation it was determined that the condition of the Bioshield Wall welds would not have an adverse affect on the safety of operations if the condition remained undiscovered.



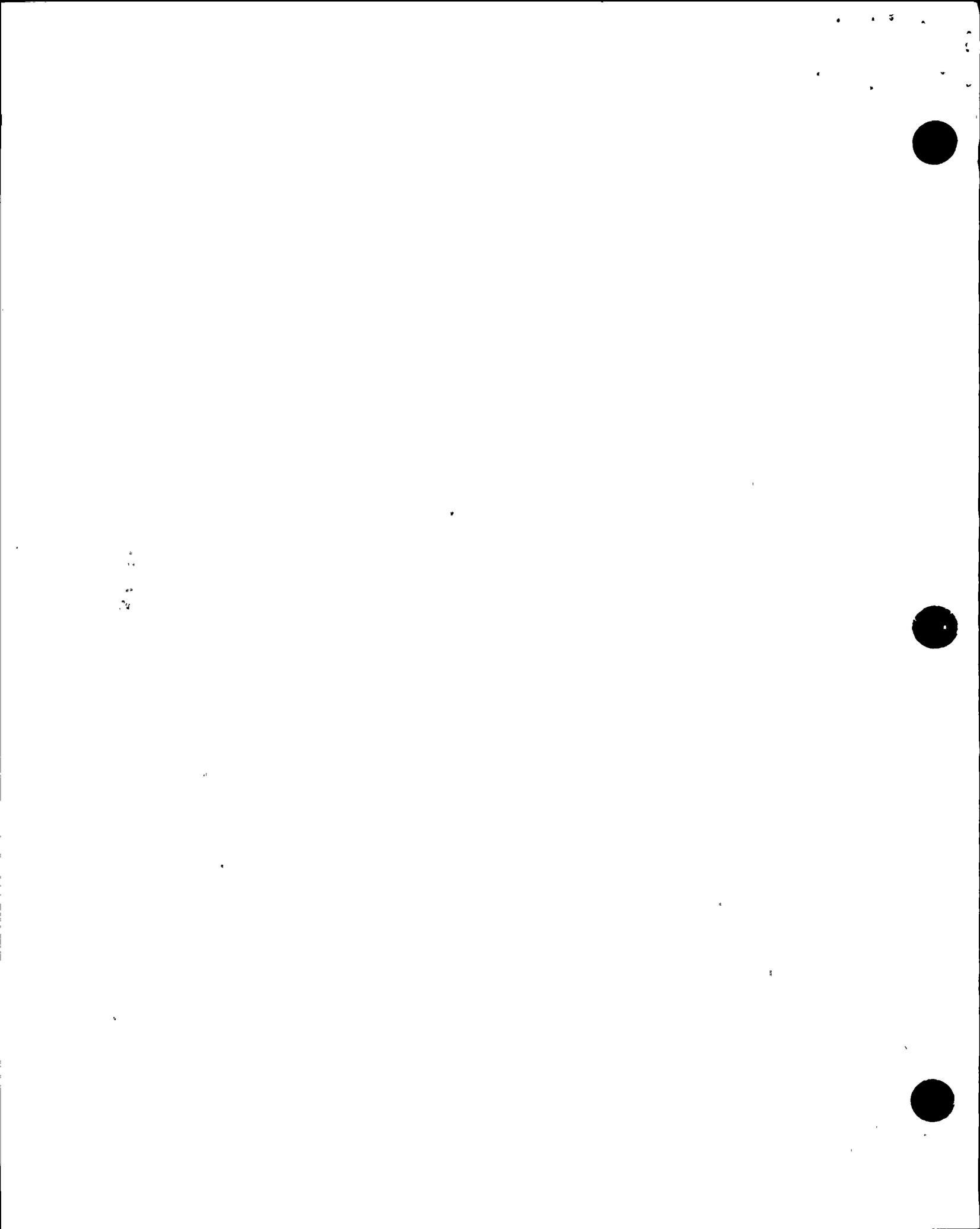
The inspector reviewed the above reports and portions of documentation including N&D 1840 concerning UT and subsequent weld repairs or fracture mechanics evaluation. Portions of the Bioshield Welds were visually examined by the inspector. The conclusion reached is that the shop welding had been suitably examined, where accessible, and defects repaired or evaluated and found acceptable for intended service.

2.3 (Closed) Unresolved Item (410/82-11-06): Preheat and Postheat Documentation of Pipe Restraint Structures.

ITT Grinnell reviewed the documentation of pipe restraint structures to determine if quality control records with the addition of field records would verify proper preheat and postheat maintenance. The review determined 112 of 1133 welds lacked documentation of either preheat, postheat or both. Deviation report DR-3615 presented the specific details where preheat documentation was missing including the affected restraints and welds. Each weld was tracked by a deficiency report, nonconformance and disposition report (N&D) or inspection report, as applicable, to establish that the resulting weld was acceptable to ASME Code Section NF (unstamped) and specification NMP-2, P301X.

During review of this open item the inspector concluded from review of documentation and discussion with welders and a QC inspector that welding without preheat was not the issue. The preheat practice was to maintain preheat (usually electric pads) until welding was complete. Where preheat was lost, the weld was magnetic particle (MT) inspected prior to continuation of welding. The problem as identified in DR 3615 was one of missing preheat and postheat documentation.

The inspector reviewed DR 3615 and subsequent DR, N&D and inspection reports (F10.1b) including DR4264, N&D IG-477, IG-920, IG-1691, IG-1958, IG-2176, IG-2205, IG-2239, IG-4057, IG-4063 and IG-7445; F10.1b, 154F, 169F, X304, X500, and X573. MT reports, including MT of completed weldments and overlays to the Bioshield Wall (BSW), showed an acceptable as welded condition on the 112 welds identified in DR-3615. The typical technical justification as summarized from IG-1958 and IG-1691 is that preheat and postheat are intended to minimize the occurrence of weld related defects. The lack of certain preheat or postheat related documentation is offset by inprocess and final weld magnetic particle examination including that MT performed at least 72 hours after welding.



Work in progress during inspection 85-29 on the following pipe restraint structures was observed:

2MSS-PRS-102, PA, B, C, D, E, NA, B, C, D, E
 2MSS-PRR-104, RM
 2MSS-PRS-102, FE, C, A
 2MRS-PRS-102, ZC

Documentation of preheat and postheat was found to be in place.

Sections of completed restraints were examined as an independent visual check of portions of completed welding of ten pipe restraints in the Bioshield Wall area. No weld related defects were identified.

The inspector concluded that licensee review and disposition of the documentation of preheat and postheat on pipe restraint structures was completed and acceptably performed.

2.4 (Closed) Violation (83-18-94) and (Closed) Unresolved Item (83-18-45)
 Reactor Controls, Inc. and (RCI) Welder Qualification

The above open items are the unresolved item and subsequent violation in regard to documentation and conformance to the ASME Code Section IX rules for Qualification of Welders by RCI identified during the NRC CAT inspection. Five welder qualification records were identified at that time which did not meet requirements of the ASME Code with respect to the type bend test used or the thickness range qualified.

The inspector reviewed the RCI surveillance report SR#W-84-615 dated 4/29/84 that describes the findings and corrections resulting from a review of the active pipe fitter and ironworker welding qualifications up to 1/6/84. The Niagara Mohawk Unit 2 QA Surveillance Report Number W-84-615 dated 6/4/84 performed to verify the RCI corrective actions to the CAT inspection finding (CAT-26-83) was also reviewed. The inspector examined welder qualification records of welders PF 105, PF 106, PF 123, PF 127, PF 129 and PF 130 as a sample to determine if the typical documentation problems identified by the CAT inspection were found and corrected. Corrections, as identified by the RCI review, were made on the qualification forms and verified by NMP #2 QA. The above violation and related unresolved item are closed.

However, during review of the above items, the recent (August 1985) revision of test coupon thickness from 0.875 inch to 0.375 inch was noted on welder qualifications for WP 1/1-4. This change was made as a result of a licensee contractor review and subsequent disposition to NCR NMP-350, dated 8/5/85.



NRC measurement of test coupons for welders PF-105, 111 and 108 showed the actual pipe wall to be 0.875 inch with a counterbore at the weld resulting in a welded material thickness of approximately 0.687 inch. The NRC measurement of a sample of welder test coupons identified a problem with the nonconformity description and disposition of NCR NMP-350. The measured thickness of test coupons for the sampled welders was 0.687 inch when the NCR disposition caused the revised welder qualification documentation to indicate a thickness of 0.375 inch. This item is unresolved pending RCI review of the RCI NCR NMP-350, and correlation of the actual test coupons to the corresponding welder qualification documentation. (410/85-29-01)

- 2.5 (Closed) Unresolved Item (410/84-14-03) RCI-QC Signoff for Completed Inspections for work in progress to avoid craft bypassing of hold points..

During inspection 84-14, RCI QC inspectors were noted to be recording inspection observations in their log books and later transferring the hold point signoff to the record copy later that shift. The possibility of this practice leading to work being done for steps past the hold point resulted in review of the practice and controlling procedures.

During inspection 85-29 the inspector noted that the procedures NMQAI-10-1 and NMQAI-6-4 were revised on March 9, 1985 and March 18, 1985, respectively, for specific use at the NMP#2 site to address this issue. Procedure 10-1 now requires that QC verification or inspection steps be considered as hold points with completion of the step necessary prior to the work proceeding. Procedure 6-4 now requires that work packages be at the work area during work periods to support construction activities and inspection sign-offs in a timely manner.

3.0 QA/QC Activities

The evaluation and resolution of NRC identified items and related issues such as the 50.55(e) concern is coordinated by the NMP #2 Special Projects Group. Relevant documentation is assembled in a data package including the finding, related documents and verifications. Prior to turnover of the issue to the NRC for review, the NMP QA organization reviews the issue, actions taken and verifies completion.

No violations were identified.

4.0 Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. An unresolved item disclosed during this inspection is discussed in Paragraph 2.4.



5.0 Exit Interview

An exit interview was held on October 4, 1985 with members of the licensee's staff and contractors as denoted in Paragraph 1. The inspector discussed the scope and findings of the inspection. At no time during this inspection was written material provided to the licensee by the inspectors.

