U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report Nos. 50-440/79-10; 50-441/79-10

Docket Nos. 50-440; 50-41 License Nos. CPPR-148; CPPR-149

Licensee: The Cleveland Electric Illuminating Company
P. O. Box 5000
Cleveland, OH 44101

Facility Name: Perry Nuclear Power Plant, Units 1 and 2

Inspection At: Perry Site, Perry, OH

Inspection Conducted: October 16-18, 1979

Inspectors: C E Jones for J. E. Konklin 11-19-79

G. F. Maxwell NOV. 19, 1979

K. R. Naidu NOV 19, 1979

G. F. Maxwell for J. F. Suermann NOV 19, 1979

Accompanying Personnel: C. C. Williams (October 17-18, 1979)

C. E. Jones (October 17-18, 1979)

Approved By: C E Jones for C. C. Williams, Chief 11-19-79
Projects Section No. 2

Inspection Summary

Inspection on October 16-18, 1979 (Report No. 50-440/79-10 and 50-441/79-10)
Areas Inspected: Licensee actions relative to previously identified items of noncompliance and unresolved items; licensee's compliance with ASME

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Code certification requirements; licensee's maintenance program for NSSS equipment; status of tagging of electrical equipment; procedures, work activities and quality records related to placement of safety-related concrete, implementation of the requirement of T/I No.2512/4. This inspection involved a total of 88 onsite inspector-hours by four NRC inspectors.

Results: Of the five areas inspected, three items of noncompliance were identified in three of the areas (infraction - inadequate procedures and failure to follow procedures for qualification of inspection and testing personnel, two examples, Section IV; infraction - inadequate identification of nonconforming equipment, Section II; infraction - lack of prompt corrective action to assure that ASME Code requirements are met, Section I.)

DETAILS

Persons Contacted

Principal Licensee Employees

*M. Edelman, Manager, Nuclear QA Department
*G. Groscup, Manager, Nuclear Engineering Department
*D. Fitzpatrick, Site Construction Manager
*W. Kacer, CQS General Supervising Engineer
*A. Kaplan, General Supervising Engineer, Construction
*B. Barkley, General Supervising Engineer, Design
*P. Martin, General Supervising Engineer, PQS
*D. Cooper, CQSS Supervisor

Other Personnel

*P. Gibson, CQS QC Supervisor (KEI)
*R. Vondrasek, CQS QE Supervisor (GAI)
*T. Arney, QA Program Manager (GAI)
R. Crofton, CQS Lead Piping Quality Engineer (GAI)
J. Connelly, CQS Lead Civil Quality Engineer (GAI)
J. Mehaffey, CQS Lead Mechanical Quality Engineer (GAI)
W. Ware, CQS Civil Quality Engineer (GAI)
S. Tulk, CQS Electrical Quality Engineer (GAI)
G. Parker, CQS Mechanical Quality Engineer (GAI)
M. Combs, CQS Engineering Aide (GAI)
K. Pech, Assistant Project Manager (GAI)
T. Hesmond, QC Manager (National Engineering)
T. Gage, QC Inspector (National Engineering)
R. Thornton, QC Supervisor (National Mobile)
D. Burnbaum, Project Engineer, Hoboken Office (UST)
P. Wang, Laboratory Chief (UST)
L. Medley, QC Inspector (UST)

The inspectors also contacted and interviewed other licensee and contractor personnel.

*Denotes those attending the exit interview on October 18, 1979.

Licensee Action on Previous Inspection Findings

(Closed) Open Item (440/78-12-03; 441/78-11-03): Failure to distribute procedure on Field Questions. The inspector reviewed CEI Memorandum dated October 3, 1979 which was transmitted to the site contractors and which contained twenty-one project procedures (including the procedure on Field Questions). This item is considered closed.

(Closed) Open Item (440/78-03-07; 441/78-02-07): Possible trend in relaxation of civil code requirements. The inspector reviewed the construction Quality Assurance Nonconformance Trend Analysis transmitted by CEI Memorandum dated March 22, 1978. The licensee took corrective action between March and July 1978 to correct deficiencies noted in the trend analysis. Corrective action included, but was not limited to: specific evaluation of the relaxed code requirement; formation of an Ad Hoc Committee to review the use of Field Variance Authcrizations and Nonconformances; training classes; and revised policy guidance on the use of FVA's, NR's and ECN's. This item is considered closed.

(Closed) Unresolved Item (440/76-06-01; 441/76-06-01) The review of Gilbert Associates Incorporated (GAI) Specifications SP-17 and SP-96, Newport News Industrial Corporation (NNIC) Procedures 465-NC-W001, 946-N-W001 and 948-N-W001 and NNIC QA Manual by the NRC inspector was incomplete. The procedures and specifications were reviewed. The test requirement was verified for the 5/64" diameter E-70TG type electrode. This type electrode was used on the 1-2A/B weld and is identified with a unique number, 77N1547. Records indicate that Lincoln Electric Company manufactured and supplied this electrode; Certified Material Test Report (SMTR) dated July 21, 1977 certified that the electrode complies with requirements of paragraph NB-2400 of the ASME Code Section III (1974) with the summer and winter addenda. Charpy V-notch impact test results exceeded the 20 ft.-lbs. at -20° F requirement specified in paragraph 5:09.2.7.a.(3)(b) of Specification SP-17.

(Closed) Unresolved Item (440/78-09-02; 441/78-08-02) Additional information was provided on the following items:

1. The PBI QA Manual was revised and revision 1 dated January 18, 1979 specified the use of a model DA-200 contour probe for MT examination. The yoke method was not used.

2. An eye examination was administered to the level III inspector; his visual acuity was acceptable and is documented in a record dated August 1978.

3. A letter from Lincoln Electric Company dated July 3, 1979 to CEI quotes Table 8 on pages 18-19 of the AWS 5.1-69 as not requiring any mechanical tests on 3/32" and 1/8" electrode.

(Closed) Noncompliance (440/78-12-04) The internal cleanliness of the Unit 1 Reactor Pressure Vessel was contrary to the requirements of GE Procedure 22A2537. NICC generated Nonconformance Report (NCR) 38-6, collected samples of the foreign material and subjected it to visual spectrographic analyses. The analyses indicated that the material was typical manufacturing debris. CEI QA personnel determined that there

were no documents to indicate that the RPV was cleaned after the feedwater nozzle modifications were made in the shop. The Unit 1 RPV was scheduled to be scrubbed utilizing GE Procedure 22A2537, titled "Final Cleaning Procedure", with approved solvents under GE supervision. However, due to modifications on the recirculation inlet nozzles this operation will be done after completion of work. To prevent recurrence, CEI personnel performed first line inspections on Unit 2 up to its' shipment. The licensee informed the inspector that the cleanliness of Unit 2 RPV was acceptable on arrival at site.

(Closed) Unresolved Item (440/78-12-05) The Unit 1 RPV alignment was offset an average .048' in the x-plane which exceeded the maximum permissible value .025'. The offset was attributed to adverse accumulation of tolerances during machining of the vessel support flange. GE safety/reliability review dispositioned the Field Deviation Disposition Request #KL1-0012 to "use as is". The alignment on Unit 2 RPV was initially performed on December 18, 1978 and subsequently verified on April 21, 1979; the check indicates that the middle target shifted from .023NE in the first quadrant to .013NW in the fourth quadrant measured at the target at the Shroud Support Ring. CEI is continuing to follow up on this matter. The inspector has no further questions at this time.

(Closed) Unresolved Item (440/78-12-05) Inadequate information on GE's three Product Quality Certificates (PQC) #N975, N993 and HH768 dated December 16, 1976, April 4, 1977 and June 9, 1978. CEI QA personnel determined that the above PQCs were not final records and obtained the following clarifications:

1. PQC N975-MPL-B13-D003, PO #205-H8953. This PQC is for Unit 2 O-rings only.

2. PQC #N993-MPLB13-D003, GEPO #205-AE208. This PQC is for RPV Unit 1.

3. PQC #HH768-MPL #B13-D002; GE PO #205-AH431. This PQC is to cover the completed RPV Unit 1 with the intervals installed and its O-ring seals.

(Closed) Noncompliance (440/78-12-07) Failure to follow procedures relative to "Hold Point" sign offs and approve procedures prior to use. CEI conducted an independent investigation and confirmed that the contractor and construction quality control personnel failed to adhere to the program requirements even though they observed the referenced hold points. CEI in a letter dated August 28, 1979 to all CQC and CQE personnel requested adherence to programmatic requirements relative to "Hold" and "Witness" points. Relative to approval of procedures, NNIC initiated Engineering Change Notice (ECN) 1190-38-31 to revise the review and approval requirements for Manufacturing Installation Instructions (MII). NNIC requires MII's to be submitted to the site organization for review, recording and approval at least four weeks prior to commencement of work unless otherwise noted. An item of noncompliance (441/79-07-02) was identified related to the signoffs on MIIs.

(Closed) Noncompliance (440/78-12-08) Visual inspection of eight welds were unacceptable; inspection records documented these welds as acceptable. NCR 96-191 was generated by NNIC to identify the eight nonconforming welds. An Action Request (AR) was written by Quality Engineering requesting NNIC to identify quality program concerns raised in NCR 96-191. A three-fold corrective action was recommended: (a) evaluate the adequacy of the visual inspection in NNICO Instruction 948-N-N002, (b) reinspect similar welds (c) retrain NNICO inspectors in visual inspection and examine their proficiency by reviewing their inspections. CEI rejected NNIC's initial reply on the basis that the reinspection was restricted to the Bioshield walls and requested NNIC to broaden the range of inspection. NNIC Document #701-2708 dated May 1, 1979, indicates that reinspection of welds in Units 1 and 2 bioshield was performed and several unacceptable welds were identified and repaired. NNIC conducted a two hour training session on September 20, 1978 on visual inspection of welds and discussed NRC findings. Additionally, National Inspection And Consultants (NIC) conducted a training session for NNIC inspection personnel on visual inspection requirements and awarded a certificate dated January 19, 1979. The NNIC statistical interpretation of the unacceptable welds identified during the reinspection concluded that the visual inspections were acceptable. The findings are documented in NCRs 17-88, 17-89 and 96-269. To date NCR 96-269 is closed and the repair, reinspection and acceptance of welds completed are documented in NCR 96-269. CEI QA through their audit and inspection program subsequently identified several additional problems related to inadequate inspections which resulted in CEI issuing a Stop Work Order No. 79-06 dated September 6, 1979.

(Closed) Noncompliance (440/78-15-02; 441/78-14-02) Failure to assure that purchased materials (embedments and structural steel) conformed to the specification requirements.

1. Nelson Stud attachments to the stainless steel Spent Fuel Liner Plates were reinspected and the unacceptable welds were repaired reinspected and accepted. Weld history record for Welds 53-32-1, -2, -3, dated April 13, 1979 reflects the work performed.

2. The stitch welds on Unit 2 wier wall were reinspected. NNIC document 701-2624 dated February 27, 1979 indicates that a sample size of 216 welds were reinspected out of which nine welds did not meet the requirements; the welds were accepted based on paragraph 8.15.1.6 of AWS D1.1-76 code which permits an underrun of the nominal fillet size by 1/16" without correction provided that the undersize does not exceed 10% of the length of the weld.

(Closed) Noncompliance (440/78-15-03; 441/78-14-03) Inadequate control of welding process.

1. Training sessions were conducted on May 1 and 2, 1979 by NNIC to emphasize the preheat requirements and is so documented; a list of

attendees who were present is attached to the record. Discussions with the NNIC QA manager indicate that several training sessions were conducted subsequently.

2. NNIC developed a procedure, 701-F-W003, which was approved by CEI on April 20, 1979, titled "Monitoring Welding Parameters other than NDE". This procedure adequately addresses the parameters to be monitored during welding to verify that welding procedures are being followed. The inspector reviewed surveillance reports and determined that the welding parameters were being adequately monitored to determine compliance with the respective welding procedures.

(Closed) Noncompliance (440/78-15-04; 441/78-14-04) Deficiency in pressure test documentation. NNIC document No. 701-2683 dated April 10, 1979 indicates that all the pressure test records from November 23, 1977 through May 11, 1978 were reviewed with the inspectors who performed the tests. It was determined that the inspectors were qualified to SNT-TC-1A Level II and that only the documentation was discrepant in some areas. The Level II inspectors were given proper instructions. The leak test procedure, H65-N-T005, was revised on March 14, 1979 and the revised format of the Leak Test Report appears to eliminate discrepant entries.

(Closed) Unresolved Item (440/79-09-01; 441/79-09-01) - All MCCs which have been installed for Units 1 and 2 have not been identified as "conditionally released". This item is closed as an unresolved item and is being upgraded to an item of noncompliance in this inspection report; details Section II. This condition was upgraded to an item of noncompliance, because it appears to be a condition requiring more attention than has been paid to it by CEI since June 27, 1979.

Section 1

Prepared by: J. E. Konklin

Reviewed by: C. C. Williams, Chief
Projects Section No. 2

1. Review of Licensee Actions on Previous Inspection Findings

The RIII inspectors reviewed the licensee's actions relative to the resolution of specific inspection findings which were identified in previous RIII inspection reports and which were still in an open status prior to this inspection. The items reviewed, and the licensee actions relative to the resolution of the items are discussed in the foregoing section of this report.

2. Review of Licensee's Compliance with ASME Code Requirements

The RIII inspector reviewed the licensee's implementation of the ASME Code certification system requirements on the Perry Project. The review indicated that safety-related components and systems at Perry are being designed, fabricated and installed under various editions and addenda of the ASME Code and that specific questions exist as to whether appropriate and timely actions have been taken by the licensee to assure full compliance with all ASME Code requirements.

Work on safety-related components or systems which require ASME Code certification has been performed by three major Perry site contractors, Newport News Industrial Corporation (NNIC), Pullman Power Products (Pullman) and Johnson Controls, although the licensee has recently removed the work on the NSSS systems from NNIC and has contracted with General Electric for this work.

Five basic contract specifications, SP-38, SP-39, SP-44, SP-47 and SP-90, are involved in the ASME Code work at Perry. The applicable installation code for the work which has been done by NNIC under Specifications SP-38 and SP-39, and which has recently been awarded to General Electric, is the 1977 Edition, Winter 1977 Addenda. For the work being done by Pullman under Specifications SP-44 and SP-47, the applicable installation code is the 1974 Edition, Winter 1975 Addenda and for the work being done by Johnson Controls under Specification SP-90, the applicable installation code is the 1977 Edition, Winter 1977 Addenda.

With regard to certification of the site contractors, the inspector verified that NNIC, Pullman and Johnson Controls possess current "NA" and "NPT" authorizations and that the General Electric I & SE Group, which will assume the work under Specifications SP-38 and SP-39, will be required to have the appropriate code authorizations prior to start of work.

The rules of the Summer 1976 and earlier editions and addenda require that installations shall be affixed with an "NA" Code stamp, but do not require the affixing of an "N" stamp. The rules of the Winter 1976 and later editions and addenda require that an "N" Certificate holder having overall responsibility for the system shall affix an "N" Code stamp to the completed system. "Overall responsibility" includes materials, design, fabrication, examination, testing, inspection and certification for manufacture and installation of the entire system.

During discussions with the licensee and review of licensee documents relating to code certification, the inspector determined that the licensee has been aware of the need for further actions with regard to the code certification requirements and has taken the initial steps to obtain an Owner's Certificate of Authorization for the Perry Project. However, the inspector also noted that Code interpretation III-1-78-186, issued on June 1, 1978, states that the Owner's Certificate of Authorization does not authorize the owner to act as the "N" Certificate holder. The document reviewed by the inspector included the following:

a. The Inspection Service Contract, dated September 19, 1977, between CEI and Hartford Insurance Company, for inspection services (as the Authorized Inspection Agency) and a Quality Assurance Program audit.

b. A letter from CEI to the ASME, dated November 30, 1978, documenting CEI's agreement to file the required N-3 Data Report Form with the Jurisdictional Authority (the State of Ohio).

c. A letter from ASME to the State of Ohio, dated January 8, 1979, notifying the Jurisdictional Authority that an application has been received from CEI for an Owner's Certificate of Authorization.

d. Report of an evaluation performed by Gilbert Associates for the licensee, dated February 13, 1979, and titled, "Requirements for 'N' stamping ASME Section III Piping for the Perry Nuclear Power Plant."

The discussions with the licensee and review of the above documents, elicited the following significant concerns regarding the licensee's compliance with ASME Code certification requirements:

a. The installation codes currently in effect for Specifications SP-38, SP-39 and SP-90 require final overall responsibility signoff by an "N" certificate holder. At present, there is no "N" Certificate holder on the Perry Project. Although no significant instrumentation installation work has been done by Johnson Controls under Specification SP-90, the work covered by Specifications SP-38 and SP-39 is approximately 20% complete.

Technically, the "N" stamp authorization is not required until final system acceptance; however, the documentation and traceability requirements to assure full code compliance make an early "N" authorization essential.

b. Substantial amounts of hardware under Specifications SP-38, SP-39, SP-44, SP-47 and SP-90 will be installed to code editions which are earlier than the code editions and addenda in effect for the design and fabrication of the components. There are special cases where this may be acceptable under the code, such as when a total system is designed and procured under one order at one time to one edition of the code; however, most of the design and procurement under the above specifications was not done on a systems basis.

c. Although the licensee has been aware since late 1977 of the potential need for an "N" Certificate authorization for the Perry Project, CEI has taken no significant actions since the February 1979 study noted above either to obtain the "N" Certificate authorization or to obtain an exemption with regard to the need for such a certificate. During this inspection the licensee stated that a decision has not yet been reached as to whether CEI will apply for the "N" Certificate authorization, whether another onsite organization will be requested to obtain the authorization, or whether a request for exemption from the "N" certification requirements will be made.

The inspector informed the licensee during the onsite exit meeting on October 18, 1979, that the failure of CEI to take timely action to obtain, or to have another onsite organization obtain, an "N" Certificate authorization for the Perry ASME Code work, or to take steps to seek relief from the requirement, was a potential item of noncompliance with Criterion XVI of 10 CFR 50, Appendix B. Following evaluation at the Region III office, the inspector notified the licensee by telephone, on October 31, 1979, that this lack of timely corrective action will be cited as an item of noncompliance with Criterion XVI (50-440/79-10-01; 50-441/79-10-01).

During the above mentioned telephone conversation, the licensee stated that CEI is preparing a letter to NRC which will:

a. State that the installation work by GE on Specifications SP-38 and SP-39 will be done under an earlier edition of the ASME Code than that presently specified for the work; an edition which does not require final acceptance by an "N" Certificate holder, and

b. Request an exemption from the "N" Certificate requirements for the portions of the work under Specification SP-90 which now require such an authorization.

3. Corrective Action on Unit 1 Zero Degree Pipe Whip Restraint, Reported Per 10 CFR 50.55(e)

The inspector reviewed the corrective actions taken by the licensee with regard to welding deficiencies found in the Unit 1 zero degree pipe whip restraint structure. The deficiencies were initially reported to Region III as a potential 10 CFR 50.55(e) item on June 27, 1979. The final report on the subject was transmitted by the licensee to Region III on July 23, 1979.

The reported deficiencies were discovered during receipt inspection and sampling UT of the structure at the Perry Site. The restraint was fabricated by Ranor Incorporated of Westminster, Massachusetts. Based on the results of the sampling UT on site, the structure was shipped to Greenville Metals Manufacturing in Greenville, Tennessee, a Newport News Facility, for re-UT and repair. At the Greenville facility, approximately 99% of the welds were re-UT'd, and all identified defects were repaired. The structure underwent final inspection at the Greenville facility on July 17, 1979 and was accepted. The restraint was received onsite on July 19, 1979 and passed receipt inspection.

To prevent the same type of problem on the Unit II pipe whip restraint, that structure was removed from Ranor, Incorporated and taken to the Greenville facility. The licensee stated that all welding done on the Unit II restraint will be 100% visually inspected and all welds requiring UT will be re-UT'd at Greenville.

Based on the above, the inspector concluded that appropriate corrective actions have been taken by the licensee relative to the zero degree pipe whip restraints. The above 10 CFR 50.55(e) reportable deficiency is considered to be resolved.

4. Interviews With Site Construction Craftsmen

During this inspection, implementation of temporary instruction number 2512/4 (Interviews With Craftsmen at Construction Sites) was initiated by the two accompanying Region III personnel. The purpose of this effort is to solicit any substantive concerns and opinions with respect to construction quality and/or deficiencies in safety related work. Five (5) craftsmen were interviewed under controlled circumstances. These craftsmen were involved in containment suppression pool, piping, and cable tray hanger fabrication activities. In general, the craftsmen were collectively impressed with the quality efforts involved in their site fabrication activities. Subsequent NRC inspections shall include increased emphasis on the identified area of construction activity. Approximately 25 more craftsmen will be interviewed during subsequent NRC inspections.

Section II

Prepared by: G. F. Maxwell

Reviewed by: D. W. Hayes, Chief
Engineering Support Section No. 1

1. Interim Maintenance of NSSS Equipment - Units 1 and 2

a. The inspector observed that, since the cancellation of the Newport News contract relative to installation and inspection of NSSS equipment identified in Contract Specifications SP-38 and SP-39, the following events have occurred:

(1) CEI Engineering department has been assigned interim responsibilitity for the storage and maintenance of the NSSS equipment located at PNPP Units 1 and 2.

(2) Newport News has been directed, since the issuance of the "Stop Work" order by CEI (dated September 6, 1979), to accumulate all applicable quality related documentation and turn it over to CEI.

(3) CEI Engineering Department has assigned three staff members the responsibilities of assuring that, during the interim period prior to re-assigning to a contractor the responsibilities of NSSS equipment, site NSSS equipment is properly handled and stored.

(4) To assist in carrying out the physical inspections, which are required during routine maintenance inspections, CEI has assigned a QC inspector to overview the activities of the interim maintenance group.

(5) Open noncomformance reports which were generated by Newport News prior to their receipt of the "Stop Work" order dated September 6, 1979, are being converted by CEI into "new" nonconformance reports. The "new" reports will re-direct those responsible for corrective action(s) to be taken relative to resolving the unsatisfactory conditions identified in the open nonconformance reports.

b. The inspector observed that the assigned CEI Engineering department personnel and CEI QC inspector(s) have been utilizing draft

copies of the CEI procedures which were written for use during the interim maintenance period. However, the inspector noted that the procedures were finalized and approved on October 16, 1979 to become effective on October 23, 1979. The final versions of the procedures were compared with the draft copies of the procedures currently being used; no significant differences were observed. The inspector has no further questions about these two procedures (numbered 2-1301 and 3-1302), at this time.

c. The inspector interviewed the CEI Engineering personnel who have been assigned responsibilities for the interim maintenance. These personnel were found to be cognizant of their responsibilities and duties, as they relate to the maintenance program and the implementation of the CEI procedure titled, "Field Storage Maintenance of Equipment" (3-130-2). As a result of the interviews; the inspector observed that the individual responsible for the "visual" inspection of NSSS equipment storage did not have certifications showing that he was certified to the inspection levels as prescribed in ASNI N45.2.6 Section 2.2. Prior to the completion of the inspection, the RIII inspector was given a copy of the aforementioned individuals certification, indicating that the individual was qualified as a "Mechanical (limited) Level II" inspector. The inspector has no further questions about this matter, at this time.

d. The inspector selected two pieces of NSSS Associated equipment to determine if their storage conditions were satisfactory. Both were found to be protected and covered, with space heaters energized (RCIC pump motor IE-51-C001 and Fuel Pool Circulation pump motors 0641-C003 A and B). The inspector observed that the assigned CEI QC inspector has not, in either case, conducted the independent physical inspections as required by CEI. QA personnel had already identified this unsatisfactory condition in a nonconformance report numbered CQC NR #1415. Further, the inspector was informed that this condition is limited to approximately twelve pieces of safety-related mechanical equipment and that the inspection points, which were missed, will be inspected during the upcoming scheduled monthly inspections. The inspector has no further questions about this matter at this time.

2. Inspection Status of Safety-Related Materials - Units 1 and 2

a. The inspector observed that on June 27, 1979 a nonconformance report was generated by CEI to identify that almost all of the electrical equipment and motor operated valves, which were still under control of the receiving warehouse, had "inadequate documentation". The inadequate documentation was related to

the environmental testing of Class 1E equipment, as required by purchase specifications to assure compliance with IEEEE 323 and/or IEEE344. The inspector was informed by the CEI representative responsible for the receipt inspection and control of CEI/Gilbert purchased materials that:

(1) Ninety-nine percent of the affected Class 1E equipment and motor operated valves, which are still being controlled by CEI warehouse personnel - not released to site contractor personnel for installation, have been clearly identified as nonconforming.

(2) The CEI representative does not know the identification status of the affected motor operated valves and Class 1E equipment which had been released to site contractor personnel prior to June 27, 1979.

b. On October 17 and 18, 1979, the inspector, accompanied by CEI QA personnel, toured the Pullman Power Products (PPP) piping installation work areas in the Auxiliary and Intermediate buildings. The inspector selected five safety-related motor-operated valves which had been released to PPP prior to June 27, 1979. One of the valves was in the process of being installed, one was not being installed and had not yet been installed and the other three had been installed. None of the valves had any identification showing that they were nonconforming or had been "conditionally released. The inspector and the accompanying CEI QA representative requested that the selected valve numbers be cross-checked by Gilbert Site Engineering to determine if these valves were also nonconforming due to "inadequate documentation". The provided "Perry Valve Bill of Material Status Report" indicated that each of the selected valves were listed as being among those motor-operated valves not having adequate documentation to assure compliance with the afore IEEE Standard(s). The inspector informed the licensee that this failure to clearly identify and track nonconforming materials is contrary to 10 CFR 50, Appendix B, Criterion XIV; PNPP PSAR, Chapter 17, Section 17.1.14.1; CEI Corporate Nuclear Quality Assurance Program, Section 1400, paragraph 1.1, and CEI PNPP Construction Quality Section Procedure 1502 (dated May 1, 1978), paragraphs 5.2.2 and 5.2.3 (440/79-10-02; 441/79-10-02).

Section III

Prepared by: K. R. Naidu

Reviewed by: D. W. Hayes, Chief
Engineering Support Section 1

Observation of Work Activities - Welding of Unit 1 Reactor Building Columns

The inspector observed welding activities associated with the installation of the columns in the Unit 1 Reactor Building and determined the following:

A. All the 17 columns have been installed in place. Pittsburgh Bridge and Iron (PBI) subcontracted the installation work to Kelley Steel Company (KSC) who perform work under the PBI QA Manual. Procedure Exhibit AQ titled, "Procedure for Installation of 17 Botton Tier Columns", was used to install the columns. Prior to welding the botton stub (which is embedded in concrete) to the column, an ultrasonic test was performed on the base metals utilizing NDE Procedure #U.T.NIC-059, Revision 4.

A. Welding on two columns identified as 4 and 6 was in progress.

C. Weld Procedure Specification prequalified to the AWS D1.1-72 code for joint BU5a was being utilized.

D. E7018 type electrode was being used.

E. Records indicate that weldors performing the weld were qualified.

F. The root pass and subsequent layers of the weld were subjected to Magnetic Particle (MT) examination by the prod method utilizing MT-NIC-052 Revision 2, dated May 9, 1979. Records indicate that the Level II NDE inspector was qualified to perform MT.

G. On column 10, an MT after the root pass revealed an indication. PBI-105, dated September 13, 1979, was generated to identify this unacceptable condition. The indication was explored to a depth of 5/16".

The inspector reviewed NCR PBI-118, dated October 3, 1979 which was generated to identify a 2" x 8" area of porosity in the welds attaching the bent plate to the upper flange located on the east side of beam 305B4. The beam is located at elevation 679'-6" in the control room complex. This unacceptable indication was apparently overlooked during fabrication. Corrective action recommended was as follows:

A. Grind out areas of excessive porosity to sound base metal.

B. Repair weld ground areas in accordance with Weld Repair Procedure 15.6 (PBI QA Manual).

C. Grind repaired areas to base metal.

D. Visually inspect repaired areas.

CEI approved the corrective action and included MT examination of each layer of weld.

The inspector has no further questions on this matter.

Section IV

Prepared by: J. F. Suermann

Reviewed by: D. W. Hayes, Chief
Engineering Support Section 1

1. Containment Structural Concrete - Procedures

As part of observing a containment pour, the inspector reviewed the training and qualification procedures of U. S. Testing Company prior to reviewing the records of four QC inspectors who performed inspections on the pour. The inspector had no comments on U. S. Testing Company Procedure QCP-6, "Training of Inspection and Test Personnel", Revision 1, dated May 3, 1978. Review of Procedure UST-TQ-1, Revision 9, "Training and Qualification of Inspection, Test and Audit Personnel", dated March 23, 1979 revealed that the procedure specified experience factors for use as a basis of qualification that were less stringent than the minimum capabilities stated in ANSI N45.2.6-1973. Although the requirements of Paragraph 3.1.2 of Procedure UST-TQ-1 are recognized in that other relevant factors may be considered in qualifying inspection and test personnel, the paragraph is not sufficient authority for exercising less stringent criteria than that contained in Regulatory Guide 1.58 and ANSI N45.2.6, to which the licensee is committed. Discussions with U.S. Testing Company personnel and a records review (see paragraph 3 below) indicated that Paragraph 3.1.2 was apparently being used as a "loophole" to hire personnel with little or no prior experience, relying on site conducted indoctrination as a basis for certification. The liberal interpretation on the part of the procedure requiring certain prior experience levels does not meet the intent of ANSI N45.2.6 and as such is in noncompliance with 10 CFR 50, Appendix B, Criterion V (50-440/79-10-03; 50-441/79-10-03).

2. Containment Structural Concrete - Observation of Work

The inspector was notified that a pour was in progress in Containment 1. National Engineering and Contracting Company, a site concrete contractor, was placing pour No. RB1-W03-645; the pour was a drywell wall of approximately 600 CY of 5000 psi concrete placed from elevation 630'-9" to elevation 646'. At the time the inspector arrived, the grout construction joint layer had already been placed and approximately two feet of concrete had been placed. The Pre-placement Checkout Record was reviewed and it appeared the required checkoffs were made and the final QC clearance was obtained prior to the pour.

The Concrete Pour Card and Placing Record were in order and indicated that the six man vibration crew was briefed on proper technique prior to the pour. The Inspection Report for Concrete Placement, dated October 16, 1979, indicated that the required hold points for concrete pre-placement, reinforcing steel placement and concrete placement were met. It further indicated that the six vibrators used on the pour were checked for calibration as required. All six vibrators met or exceeded the minimum 8000 cpm calibration requirements.

The inspector observed the placing and vibrating crews in progress. Placement operations appeared under control; concrete was confined to a maximum free fall distance of five feet; concrete was not moved excessively in a lateral direction; the placing sequence appeared to prevent the formation of cold joints; vibrator crews appeared to be achieving the proper consolidation and were following procedures regarding mode and time of vibrator insertion. QC personnel carefully followed both the placing and vibrating operations. U. S. Testing Company QC inspectors performed the required slump, temperature, air entrainment and unit weight tests per procedures.

Concrete compression cylinders were made according to ASTM requirements and the sampling frequency was followed according to procedures. Field curing boxes were used to retain the cylinders for a maximum of twenty-four hours. The inspector noted that one of the three curing boxes indicated the temperature range exceeded the maximum permissible 60-80^{o} F limits during the initial curing cycle. The licensee correctly identified this as a nonconforming situation and took prompt corrective action to remedy the problem and also prevent its recurrence. The inspector noted water was added at the truck discharge point prior to emptying the drum contents. Procedures permitted this practice and the amount of water added was controlled. Water sight gauges on the trucks were operative and checked by the QC inspector. QC inspectors were aware of the requirement to mix added water with 30 revolutions of the drum.

No items of noncompliance were identified in this area.

3. Containment Structural Concrete - Quality Records

a. Concrete data and related equipment -

The IE inspector reviewed the calibration records for the testing apparatus used on pour RBI-W03-645, and found the following equipment had current calibration stickers: air meter #14, slump cones #7 and 14, unit weight bucket #8, field scale #24, and thermometer #124. Calibration records for trucks 66, and 83 and 84 indicated all water sight gauges were operating within tolerance and the trucks uniformity test

results met ASTM C-94-73A requirements. NRMCA certifications for the main and back-up batch plants were current. The main batch plant automatic console gauges, admixture meters, and scales were currently calibrated. The concrete and placement Identification Sheet for the pour indicated that the specification requirements were met with regard to slump, air entrainment, temperature and unit weight. Compression test specimen cylinders were made as required by the specification.

b. Personnel qualification records -

The records of the four U.S. Testing Company personnel assigned to pour RBI-W03-645 were checked against the requirements of procedure UST-TQ1 and against ANSI N45.2.6. Three of the four record files inspected revealed the following:

(1) The documented experience and education factors did not meet the procedural and/or ANSI requirements committed to with regard to type or duration.

(2) Site conducted proficiency testing appeared to be the main basis for certifying individuals and was the only relevant factor in the personnel backgrounds.

(3) Supportive requirements such as eye/physical exams, pertinent training and indoctrination were being administered after the date of qualification of the individual.

(4) The Document of Qualification did not specify the period of qualification. These practices are contrary to Regulatory Guide 1.58 and ANSI N45.2.6 and as such are in noncompliance with 10 CFR 50 (Appendix B), Criterion V. This is a second example of the previously cited item of noncompliance (50-440/79-10-03; 50-441/79-10-03).

Exit Interview

The inspectors met with site representatives (denoted under Persons Contacted) at the conclusion of the inspection on October 18, 1979. The inspectors summarized the scope and findings of the inspection. The licensee acknowledged the findings reported herein.