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

REGION III

Report No. 50-341/78-18

Docket No. 50-341 License No. CPPR-87

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Facility Name: Enrico Fermi 2

Inspection At: Detroit Office, Monroe Michigan Site

Inspection Conducted: November 13; Site - November 14-17, 1978

Inspectors: C. M. Erb 1/3/79

K. R. Naidu 1/2/79

H. M. Wescott 1/8/79

H. S. Phillips 1/3/79

Approved By: D. W. Hayes, Chief 1/3/79
Projects Section

Inspection Summary

Inspection on November 13-17, 1978 (Report No. 50-341/78-18)
Areas Inspected: Followup on Bulletins/Circulars; previously identified items of noncompliance/unresolved items; 50.55e report on core spray pump vane cracks; reactor internals, procedures/work; safety related components, work/records; containment penetrations, work/records; structural steel and supports, work/records; structural welding, procedures/work/records; structural concrete, records; general housekeeping/storage/handling. The inspection involved 128 inspector-hours onsite by four NRC inspectors.

Results: Three items of noncompliance were identified in three of eleven areas inspected. (Infractions - failure to control special processes and document test results, Section I, paragraph 3.b and Section III, paragraph 5b; failure to properly store/protect equipment, Section I, paragraph 3.c; deficiency - failure to assure minimum inspector qualifications met and documented in QA records file, Section I, Paragraph 5.c(1).

DETAILS

Persons Contacted

Principal Licensee Employees

*E. Hines, Assistant Vice President and Manager, QA
*W. Everett, Project Superintendent
A. Alexiou, Assistant Project Superintendent
*W. Fahner, Project Manager
*J. D. Ryan, Site Project QA Engineer
*H. A. Walker, Project Site QA Engineer
*C. R. Bacon, Field Project Engineer
*C. J. Miller, Senior QA Engineer
*G. Carter, QA Engineer

Other Personnel

*M. Albertin, Construction Manager, Daniel International Corporation, DI
*J. G. Bolt, Project QA Manager, DI
*C. B. Gliesener, Project QC Manager, DI
*D. E. Seifert, Project Manager, DI
*R. R. Turner, Assistant Construction Manager, DI
*M. Goedecks, QA Welding Engineer, DI
R. Madden, QC Documentation Supervisor, DI
*R. O. Donnel, QA Engineer, DI
J. Gresham, Civil Inspector, DI
G. Warner, QAPE, Utley-James, (U-J)
*C. Keller, Field QA Manager, Wismer-Becker, (WB)
E. L. Young, Project Executive Manager, (WB)
*D. Rybarik, Site Manager, General Electric Company, GE (I&SE)
*T. Dykes, Inspector, Quality Control, GE (I&SE)
*H. Konkle, Site Manager, GE (NED)
*J. E. Norton, QA Engineer, Stone and Webster, (S&W)

The inspector also talked with and interviewed several other licensee and contractor employees, including members of the quality, technical and engineering staffs.

*Denotes those attending the exit interview.

Licensee Action on Previous Inspection Findings

(Closed) Item of Noncompliance (341/78-07-01) - Audit schedules not filed in QA records center, The inspector reviewed present schedules and found that audit schedules are retained with audit records.

(Open) Item of Noncompliance (341/78-09-02) - Program adequacy by higher management not assessed. The inspector reviewed two management reports from Project QA Director to the QA Director and to the Assistant Vice President Manager - Quality Assurance. It appears that this report gives greater visibility to the QA program. The remaining item is the independent audit of the QA organization.

(Open) Item of Noncompliance (341/78-09-03) - Inadequate followup on findings identified by Edison QA audits (EFZ-348-2/FFZ-39746). Final shielding calculations had been submitted to Edison engineering by Sargent & Lundy and QA will close out this item during the next audit.

Functional or Program Areas Inspected

Details of functional or program areas inspected are documented in Sections I, II, III and IV.

Section I

Prepared by H. S. Phillips

Reviewed by D. W. Hayes, Chief
Projects Section

1. Review of IE Bulletins at Detroit Offices

The RIII inspector reviewed the licensees system for handling bulletins and action taken on IE Bulletin Nos. 78-01 through 78-12 as follows:

a. Written responses were made within time stated in the bulletin.

b. Written responses included information required.

c. Written responses included corrective action to correct problem stated in bulletin.

d. Onsite management was advised of written response to bulletins.

e. Corrective action, where required, was adequate and compatible with written response.

f. Appropriate action was taken on information only bulletins.

No items of noncompliance were identified.

2. Review of Circulars (Detroit Offices)

The inspector reviewed Circular Nos. 78-01 through 78-16. All circulars, applicable to the Fermi 2 project, were on file. Assignment to and evaluation by appropriate engineers had been documented.

No items of noncompliance were identified.

3. Plant Tour

The inspector visually inspected all floors of the reactor building and the RHR service building. The areas inspected were satisfactory except as follows:

a. Reactor Pressure Vessel Area

Jet pumps Nos. 4, 8, 10 and 12 welds had different surface conditions. That is, some welds were almost flush with the surface while others were reinforced. The weld processes which made the welds appeared to be different. The workmanship on one weld on jet pump No. 8 joining the ram head to throat, appeared to be of lesser quality than similar welds on other jet pumps. Excessive weld spatter was found on jet pumps 6, 11, 15, 18 and 19. There appeared to be a small amount of spatter on almost every jet pump. GE I&SE stated that the weld spatter would be removed. This matter is unresolved pending removal of the spatter and review of welding requirements and records which were not available on site. (341/78-18-01)

b. Nondestructive Examination of Vessel Internals

The inspector found dye penetrant and developer solution which had not been cleaned off test surfaces after testing. The time ranged from days to more than a week. The following items of noncompliance were identified in Item 1 of Appendix "A" (341/78-18-02):

(1) Feedwater Nozzle at 90° Az

The inside of the subject nozzle had penetrant and developer which had been applied to the inside diameter of the nozzle several days earlier. In addition to the penetrant left for an extended period, no test report had been completed although unacceptable indications were found. No tag or nonconformance report was noted.

(2) Feedwater Nozzle at 30° Az

Just below the feedwater nozzle at approximately 30°, penetrant stain extended down the wall of the vessel for approximately 18".

(3) Bottom of Vessel (approximately 350° -260° Az)

An area near the bottom of the vessel located near the bottom of the vessel located near the 350° Az was found to have a residual of penetrant solution after the area was cleaned. Cleaning was inadequate.

(4) Jet Pumps (approximately 180° Az)

Two jet pumps located at approximately 180° were visually examined where the inside of the diffuser was welded to the support. Penetrant/developer was not adequately cleaned after testing.

These items represent noncompliances to 10 CFR 50, Appendix "B", Criterion IX which states in part, maeasure shall be established to assure that special processess and nondestructive testing are controlled and accomplished by qualified personnel using qualified procedures," and to Edison QAP No. 10; GE I&SE procedure No. NDE-PT-1002, Revision 3, post examination cleaning (paragraph 13.0) and examination records (paragraoh 14.0).

c. Storage/Protection of QA Level I Valves

The inspector observed the following storage/protection conditions as described in Item 2 of Appendix "A". (341/78-18-03)

(1) RHR swing check valve (P4500) 18" gate, E11-50, was observed to have the end cap burst. This same valve was observed in a similar condition during previous inspections. The equipment was not in an area to afford proper protection.

(2) Two check valves C11-52 (V8208) were improperly stored/protected inside the reactor building. One valve had the end cap missing as well as laying in steel debris. The valves were not in an area to afford proper protection.

The above conditions are in noncompliance with 10 CFR, Appendix B, Criterion XIII which states in part, "Measures shall be established to control handling, storage.... and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration and Edison QAP No. 14 requires the same.

No items of noncompliance were identified except as noted in paragraph 3.b and 3.c.

4. Observation of Structural Concrete Work Activity

The inspector found that containment structural concrete work on the RHR service building is complete. The contractor was in the process of turning over records to the documented center and will leave the site soon.

5. Review of Structural Concrete Records

a. The inspector selected Utley-James Report No. 195 for review. This work on RHR complex wall WP-39 (pour release No. 2104A, 2142 and slab SS9B between 5 and 6 column and column lines A and D; 6 and 7) was observed during a previous NRC inspection. The following actions were recorded and in file:

(1) Preplacement preparation/inspection completed per QCP IV checklist, Revision 0.

(2) Design mix No. 96 of 4000 psig specified, delivered and batches recorded on concrete field test report.

(3) Required tests made, i.e., ASTM C127 and 125, ASTM C-150 -76A, Type I.

(4) Inspections of placement made.

(5) Curing done as required.

(6) No rebar placement was required.

(7) Materials were tested and certified as required. Medusa cement order dated December 2-7, 1977 for Type 50 cement per CSA STD A5 gave chemical analysis but there was no statement to certify that testing met specification.

Since the cement met chemical requirements the inspector had no further questions, but commented that such documents should state requirements met.

(8) The batch plant operation was reviewed by the National Ready Mix Association June 7, 1977 and the certificate issued was valid through June 7, 1978.

(9) Batch plant calibration records were reviewed. The inspector found the following:

Batch plant scales for weighing cement and aggregate had been calibrated, however, the records did not contain the calculated percentage error and did not contain a statement that error was within the range allowed by ASTM C94, paragraph 8.3 (0.4% of total capacity).

Batch plant admixture measuring devices had been checked, however, again no percentage error was calculated from the difference found between required and actual volume. No comparison was made to show in the records that the volume met the requirements of ASTM C94, paragraph 7.4 (± 3%). Further the records indicated that the measuring device for pozzolon exceeded the 3% allowed but was never identified and corrected.

The inspector reviewed compressive strength log for cylinders 15147-15178 (June 24, 1977-June 13, 1978) and found all breaks above the 4000 psi required. Based on this information the compressive strength of concrete materials did not appear to be adversely affected. Since all concrete work has been completed, this matter is closed; however, the inspector requested a review of other areas and received a commitment that other activities on site would be reviewed and audited to assure that similar calibrations are in accordance with ASTM or other requirements. Likewise, certifications should state the requirements met. The condition described in 5.a(9) above is unresolved and will be reviewed during subsequent inspections to assure other areas of calibration have been reviewed. (341/78-18-04)

b. The inspector reviewed records contained in report 154, RHR complex wall WP 17, wall section between 9 and 7 along "A" line at elevation (EL) 590-613'; WP 22A, C and E along 9 line EL 590-613'; WP 9, 4 and 2 along "E" line, EL 590-613' where design mix 91 was placed. The RIII inspector reviewed records of actions as described in the previous paragraph.

c. Qualification of Personnel

(1) Daniel International QC personnel records for Messrs. Herman, Gresham, Kinne and Hargrave were reviewed. The file contained resumes and onsite/offsite training records which showed qualifications. Visual acuity tests were also in the file as required except for Mr. Kinne who started to work February 1977 and was tested June 9, 1978. This is described in Appendix A, Item 3. (341/78-18-05)

This item is in noncompliance with 10 CFR 50, Appendix B, Criterion XVII which states in part, "The records shall also include closely related data such as qualification of personnel" and Edison QA manual QAP-1, paragraph 1.9.1, which states, "Minimum qualifications shall be established for personnel who perform quality assurance functions."

(2) Rebar crew qualification at Utley-James Company records indicated that five workmen had received training regarding placing reinforcement material per Utley-James procedure No. 4. Mr. Dennis Sarpen's file showed QA/QC qualifications and training in WPC No. 4, 5 and 12 (curing, reinforcement placement, formwork).

d. QA Audits

Daniel audit of Kuhlman Corporation dated July 14, 1978, findings 78-07-07 through 78-07-28 was reviewed to determine that such audits assured conformance to procedures and test requirements. The audit appeared to be comprehensive and adequate.

e. Contractor Deficiency or Deviation Reports

The following report numbers were reviewed for problem identification/resolution and were adequate:

(1) Period/February-November 1978

2254, 2248, 2247, 2177, 2161, 2152, 2126, 2069, 2068, 1899, 1653 and 1411.

(2) July 27, 1978-September 25, 1978

2125, 2124, 2107, 2106, 2065, 2051, 2015, 1995, 1987, 1984, 1955 and 1918. (2125 and 1995 replaced 1987 and 1984 respectively).

(3) DDR 1054 (June 3, 1977) petrographic examination did not clearly address the stated deficiency, however, the inspector's questions regarding ASTM-C-295 (soft particle) content was answered by reviewing compression test results. The inspector has no further questions on this matter.

No items of noncompliance were identified except as noted in paragraph 5.c(1).

6. Review of Penetration Records

Interior bulkhead assembly 4'-0 x 6'6 Personnel Lock Records were reviewed for engineering part No. 156-12 on purchase specification 69-5562. Difficulty was experienced in retrieving the information when requested by subject i.e. material certifications, receiving inspection etc.

a. File 5.2

(1) U.S. Steel Company material certification, Heat No. 68A553, 166117, ASME SA-516-67 Gr 70.

(2) CBI receiving report dated January 6, 1971.

b. File 6.4

CBI letter dated August 3, 1971 contained CNQA audit release pertaining to material records, fabrication/examination records, welder qualifications, NDT personnel qualifications, x-ray reports and repair records. The overload pressure test (1.5 x 56 psig) was witnessed August 2, 1971, however, no records were readily retrievable concerning the minus 2 psig test. This matter is unresolved pending retrieval of the subject records. (341/78-18-06)

No items of noncompliance were identified.

7. Standby Liquid Control (SLC) Installation and Records

The inspector observed the SLC tank and SLC pumps (C41-03-C001B).

a. Maintenance records for the subject pumps were reviewed to assure that storage, handling, and protection was adequate prior to and after setting in place as follows:

(1) Crankcase and gear packing checked.

(2) Machine surfaces coated with Shell Ennis 210.

(3) Covered with Herculite No. 6.

(4) Packing removed from plunger boxes.

(5) Internal heaters hooked up.

(6) Motor bearings lubricated.

(7) Annual samples Shell US1-32 oil analyzed.

(8) Maintenance/inspection documented.

(9) Inspection stops 1, 3, 4, 5, 6, 7 and 8 completed.

(10) Megger test performed July 6, 1978.

b. Dravo boss welds on piping between twin valves, IE 86734, were visually examined. The weld surface roughness was excessive. These welds require dye penetrant examination, however, the RIII inspector questioned the ability to perform meaningful examination because of "hill and valley" effect. These welds were made at vendor shops. Records were not readily available. After identifying this questionable welding/NDE practice, the inspector was informed that the problem is more extensive. This matter will be reviewed during subsequent inspections. (341/78-18-07)

No items of noncompliance were identified.

Section II

Prepared by K. R. Naidu

Reviewed by R. L. Spessard, Chief
Engineering Support
Section 1

1. Observation of Safety Related Structures Installation Work Activities

The inspector observed work performance and partially completed work on the Steam Tunnel Lower Pipewhip Restraints (STLPR) and determined that applicable requirements and inspection procedures are being met in the following areas:

a. Beams and plates specified in drawing 6C-721-2538 were being used.

b. Beam B 3113 was being welded to a 1 1/2" x 1 1/2" x 1'-0 5/8" plate as specified in isometric drawing 6C-721-2543, detail 6.

c. Inspections were being performed as necessary.

d. Record keeping appeared to be commensurate with the work in progress.

e. Nondestructive Testing has not commenced.

f. At the inspector's request, the shopwelds on beams identified as A-3109 and A-3107 were reinspected for size and conformance. One of the welds on beam A-3109 had a 3/64" undercut at one location. Two fillet welds on beam A-3107 were measured to be less than the specified 1 1/2" at two locations. These nonconformities are considered isolated instances since other beams were not accessible for inspection. During the exit interview, the DI Project Manager agreed to reinspect all of the beams furnished by the manufacturer to confirm that these were indeed isolated instances and to recommend suitable corrective action. This is considered an unresolved item. (341/78-18-08)

g. The Operation Process Traveller (OPT) No. 15140A for the installation of the whip restraint structure beam B-3113 in

accordance with drawing 6C-721-2538 indicates the following attributes which are to be completed:

(1) Grout to procedure WB-C-104
(2) Tension bolts to procedure WB-E-106
(3) Final installation signoff.

No items of noncompliance or deviations were identified in the above areas.

2. Observation of Safety Related Structures Welding Activities

The inspector observed the various stages of weld completion of Field Weld (FW) No. 13 attaching a plate to beam B 3113 in the STLPR structure. The inspector determined that the welding activities met the applicable specifications and inspection procedures in the followirg areas:

a. Weld Procedure Control Sheet (WPCS) traveller No. 21303 references detail 6 on isometric drawing 6C-721-2544 and identifies the weld No. FW 12 as a full penetration groove weld with 1/8" reinforcement.

b. Weld procedure WPS 7002 was specified.

c. Weld rod type E 7018 was specified and being used.

d. The WPCS identifies the following steps and the inspection points are identified with asterisks.

(1) *Prefit up cleanliness

(2) *Fitup inspection

(3) *Preheat temperature 200°F.

(4) Interpass temperature 350°F maximum.

(5) *Visual inspection of the root pass.

(6) *Magnetic Particle (MT) examine the backgouged root pass.

(7) *Final visual inspection

(8) *Final MT examine the weld.

e. The QC inspector made one check during the completion of the weld to determine whether the welding variables were within the parameters specified in the WPS; record indicates that the current and voltage were within the specified range.

f. Weldrod was being stored at the work location in portable weldrod ovens. Depleted weldrod was being discarded appropriately.

No items of noncompliance or deviations were identified in the above areas.

3. Observation of Containment Penetrations Work Activities

The inspector observed activities relative to the installation of containment penetrations - Mainsteam identified as X7C and Residual Heat Removal system (RHR) identified as X13B. The inspector determined that the requirements specified in the respective Operation Process Traveller (OPT) were being met in the following areas:

a. Penetration X7C

(1) The OPT No. 10032, Revision F for the installation of penetration X7C references the General Electric (GE) drawing as 731E756 and the applicable WPCS's as 00544, 13663, 13664, 13666, 13667, 13668, 13669 and 13821. Verification of the following is required:

(a) Receiving Inspection Report.

(b) Measure and record the as built dimensions of the penetration assembly and penetration nozzle.

(c) Mark and identify plumb lines from elevation 607 radial steel.

(d) Alignment method per GE procedure 731-E-756 including erection and leveling of alignment scope and verification of the fitup of the backing ring in the penetration assembly to the nozzle joint.

(e) The centering flange is firmly seated on the end preparations.

(f) Weld penetration X7C to the internal isolation valve utilizing WPS-106.

(2) WPCS No. 13669 indicated the following:

(a) The weld is identified as C7; 26" diameter 1.2" thick type A-216-WCB material to SA-155-KCF-70.

(b) WPS-106 is specified.

(c) Weldrod types used are: Root pass with Gas Tungsten Arc Welding (GTAW) 1/8" diameter type E 70S-2 and consumable insert E 70S; for Shielded Metal Arc Welding (SMAW), 3/32" diameter type E 7018 weldrod for the initial three passes and 1/8" diameter type E 7018 weldrod for the remaining passes.

(3) The inspector selectively observed the welding in progress of the first, second and third passes. Interpass temperatures were selectively checked by the contractor QC inspector and determined acceptable.

(4) The weldrod withdrawal requisition numbers, identified on the WPCS, provide a means to retrieve the quality records. The inspector reviewed the quality records on weldrod 3/32" diameter type E 7018 weldrod with heat No. 21660. A Certified Material Test Report from Chemtron indicates that the weldrod met the requirements of ASME Section III Code, Section II, Part C including 1977 Winter Addenda.

(5) The WPCS indicates that the fitup and preliminary radiograph examination of the root pass were inspected and accepted by the Authorized Inspector.

b. Penetration X13B

(1) WPCS No. 20171 identifies the following:

(a) The weld joining penetration X13B to 34" diameter nozzle with wall thickness .500" is identified as E-11-2298-1VW2.

(b) WPS 103 is specified.

(c) The fitup inspection was signed off as acceptable by representatives of the contractor, AI and Daniel.

(d) Interpass temperature is specified as 350°F maximum; the contractor QC inspector indicated the verification by his signature.

(e) Weld Filler Material Issue slips indicate that 3/32" and 1/8" diameters type E-70S-2 and 3/32" diameter type E-7018 weldrods were used in the initial and subsequent passes.

(f) The inspector observed the welding in progress at various intervals and had no adverse comments.

No items of noncompliance or deviations were identified in the above areas.

4. Review of Safety Related Structures Quality Records

The inspector reviewed the quality records relative to the components of the STLPR structure and determined that the records meet established requirements and reflect work accomplishment in the following areas:

a. Beams identified on drawings 5S 721-3106, Revision C and 5S 721-3109 , Revision D and 5S 721-3110, Revision C were receipt inspected. Receiving Inspection Report (RIR) No. 6.2.78-1 indicates no adverse findings on these beams. In addition, the following material was received without any visible shipping damage.

(1)	Support plate	B 3106
(2)	Support plate	B 3109
(3)	Angle bracket	A 3109
(4)	Post	C 3110
(5)	Beam	B 3110
(6)	Beam	D 3110
(7)	Plate	A 3110

b. Vendor Surveillance was performed during fabrication. Review of Detroit Edison Inspection Report No. 2 dated June 1, 1978, indicates that the beams mentioned above were inspected for final fabrication quality and dimensional tolerances; also Ultrasonic and Magnetic Particle examinations performed by Utex, an independent testing agency were witnessed.

c. Material Test Reports for the following were included.

(1) Certification on 5/32" diameter weldrod type LH-718SR used by the manufacturer.

(2) Certification on the beams.

(3) Nondestructive examinations.

No items of noncompliance or deviations were identified in the above areas.

Section III

Prepared by C. M. Erb

Reviewed by D. H. Danielson, Chief
Engineering Support
Section 2

1. Safe End Replacement Program

a. All six of the 12" feedwater safe ends are being replaced with a newer design which will accept a redesigned thermal sleeve with piston ring seals. No. N4A weld at azimuth 30° and No. N4E weld at 270° were inspected as were the radiographs and Penetrant Test records. A qualified welder No. GE-100 made the weld which used a Grinell insert and two additional tungsten inert gas layers for the root. The weld was completed using the shielded metal arc process. Repairs were properly noted and rechecked by the applicable NDT method.

b. Both 10" core spray safe ends are being replaced. This weld is an inconel (P43) to inconel (P43) weld. Specification, WPS 4.3.9.4.1, Revision 1, is applicable and the weld is made by GTAW process for the root followed by the SMAW process.

Interpass temperature is kept below 400° F and a minimum 3/16 inch root is deposited before removing the purge gas inside the nozzle.

FDDR-KHI-104 was issued to repair one of the welds on Unit 1. Upon completion of the weld, a weld suckback condition was noticed in the radiograph and a grindout for weld repair made. Procedure NDE-RT-3001 was used for the radiography.

The core spray nozzles in the two spargers were removed and are to be replaced.

No items of noncompliance or deviations were found.

2. Reactor Pressure Vessel Lifting and Setting

Several procedures for lifting and setting the vessel were examined as shown below:

Reliance Truck - Tests on lifting materials including impact tests on clevis ass'y, tie rods, side plate, pin, studs, bracket ass'y.

RT-111 - Transport and Hoisting Procedure.

RT-115 - Hoist Prelift Checkout.

IT-2000, Revision 2 - Alignment Level-grout Ring Girder.

IP-2003, Revision 2 - Check Azimuth Vessel, Concentricity to Ring Girder.

IP-2004 - Bolt Load and Sequence.

GE 22A2286, Revision - - Skirt Attachment.

No items of noncompliance or deviations were found.

3. Cable Tray Inspection and Resolution (Report No. 050-341/78-05)

DECo Engineering and S&L investigated 800 samples of coated welds from all their suppliers by stripping and evaluating for cracks, porosity, undercut or other defects. One cracked weld was found. Applying MIL-STD-105 and a statistical approach, they have concluded that the coated welds marked "indeterminate" are acceptable. Any welds marked as "rejected" will be repaired. Mechanical type repair will be used on trays where cables have been pulled. For the past several months, welded items were inspected at the source prior to the galvanize operation and evaluation of the weld is readily made. DCN 984, Revision D, is an engineering supplement to AWS D1.1-1975 which better defines visual acceptance standards for manual metal arc welds.

The inspection of existing welds is complete and when repair operations are completed, DECo Quality Assurance will issue a final report on this matter.

No items of noncompliance or deviations were found in this area.

4. Torus Reinforcement (341/78-XX-05)

A serious welding problem exists inside the torus, where the ring girders to shell fillet welds are being enlarged. Cracks are occurring at the toe of the weld on the thinner member side which is the shell side. The materials are P-1 to P-1 and the manual metal arc process is used with D-7018 or E-70T-1 electrode. The

welds are being given an MT inspection with PT also being used. Presently the preheat requirement is 50° minimum with no post heat. A revised weld procedure No. WPS 112 for repair requires a 300° preheat before, during and after completion of the weld repair. A meeting was to be held the week of November 20, 1978, for further modification of the weld procedure. This torus is part of containment; bears an N stamp Class B, Manufacturer's No. C-4512 and was built in 1971 by CBI.

5. Core Spray Nozzles and Steam Separator

a. The core spray spargers have been removed from the shroud. The nozzles have been removed from the spargers and replacement nozzles will have changed orificing.

b. Rework of the welds at the bottom of the standpipes on the steam separator has been performed. Some weld was added where needed and 100% PT examination made. Developer for PT had not been removed from 11 standpipe welds in the steam separator. NDE-PI-1002, Revision 3 requires that developer be removed after PT. This is part of and item of noncompliance in Appendix "A". (341/78-18-09)

c. NDT Records Jet Pumps

Radiographs for welds G-JP-01 and G-JP-02 in Jet Pumps No. 1 and 2 were examined. The pipe was 22 x .375 wall and the weld was made with an insert. Radiography procedure RT-3001, Revision 2, was used and five films were necessary. The PT was done to PT-1002, Revision 1, and results were acceptable.

No items of noncompliance or deviations were found except as noted in 5.b.

6. Core Spray Pumps (341/78-XX-04)

The inspector was shown a report from Byron Jackson on the cracked impeller vanes. This report held that cracks in the center rib next to the acute angle rib to vane intersection should be of no concern because the area being on the low pressure side of the vane is in compression. They further stated that the licensee could grind out these cracks if they so desired.

The licensee has turned this investigation report over to the supplier, GE Company, and are awaiting word from them as to whether the item is reportable per the requirements of 10 CFR 50.55(e).

Section IV

Prepared by H. M. Wescott

Reviewed by D. W. Hayes, Chief
Projects Section

1. Observation of Welding, Record Review and Review of Weld Rod Controls

   a. Observation of approximately twelve (12) weld rod hold ovens established that three (3) of the ovens did not have calibration stickers affixed to the temperature indicators. Further review established that one of these ovens was overdue calibration by approximately one (1) month. This item was corrected prior to the termination of this inspection and is considered closed.

   b. The inspector reviewed two (2) welder qualification records and established that they were qualified to the welding procedure specification, and also ascertained that their qualification had not expired.

   c. Observation of weld preparation for structural steel in the drywell area for WPS 7002 weld ID No. B3113 FVI 12.

   d. Review of welding records established that in several instances the welding voltages and amperages were not being recorded nor verified. Discussions with the Daniel Construction welding engineer established that this was a problem area that was being monitored and that the welding power supplies were being calibrated, also, the system for grounding, to complete the welding circuit is being changed.

      This is an unresolved item pending further review by the NRC inspector. (341/78-18-10)

2. Review of Audit Training Records, Audit Reports and Procedures

   a. Reviewed three (3) Detroit Edison and two (2) Stone and Webster personnel Auditor Training Records (Detroit Edison contracted two auditors from Stone and Webster). Detroit Edison is currently updating the training records to reflect the current training status of each auditor. This is to be completed in December 1978.

b. Reviewed the "Edison Field Quality Assurance Audit Schedule" for September through December 1978, dated September 21, 1978.

c. Reviewed the Edison Site QA Quality Auditing Status Log.

d. Reviewed the Field SR's Quality Findings for April through July 1978.

e. Reviewed Quality Assurance procedures as follows:

(1) QAP No. 19, Revision 4, dated May 2, 1977, "Audits."

(2) AP-111-02, Revision 1, dated May 15, 1978, "Quality Assurance Audit Planning and Scheduling."

(3) AP-111-03, Revision 2, dated June 13, 1978, "Quality Assurance Surveillance and Audit."

(4) FQAP No. 200, Revision 0, dated September 1, 1978, "Audits of the Construction Site."

No items of noncompliance or deviations were noted in the above areas.

3. Identification and Control of Material

a. Review of QAP No. 8, Revision No. 4 dated May 2, 1977, "Identification and Control of Material Parts, and Components."

b. Observation made of materials and parts used for onsite fabrication of Level I pipe hangers and supports.

The inspector was unable to verify that materials and parts used for onsite fabrication of Level I pipe hangers and supports were traceable to material test reports.

This is an unresolved item pending further review by the NRC inspector. (341/78-18-11)

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection

are discussed in Section I, paragraphs 3.a, 5.a, 6.b, 7.b; Section II, paragraph 1f and Section IV, paragraphs 1.d and 3.b.

Exit Interview

The inspectors met with site staff representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on November 13-17, 1978. The inspectors summarized the scope and findings of the inspection, including the apparent items of noncompliance identified in the Details Section of this report. The licensee acknowledged the findings.

Since an NRC inspector recently experienced access difficulties, NRC site access to perform off-shift inspections was discussed to establish ground rules for NRC inspectors entering after hours. The licensee stated their intent to photograph inspectors and make special badges to expedite entry. The licensee also stated that after proper identification, NRC inspectors would be allowed to enter without excessive delays. The project inspector added that NRC inspectors should have the same access rights as licensee QA/QC personnel after proper identification.