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October 22, 1984  
EF2-70032

Mr. James G. Keppler  
Regional Administrator  
Region III  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reference: Fermi 2  
NRC Docket No. 50-341

Subject: Detroit Edison Response  
Inspection Report 50-341/83-31

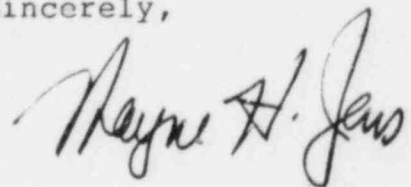
This letter responds to the items of noncompliance described in your Inspection Report No. 50-341/83-31. This inspection was conducted by Messrs. J. Kish, W. Kropp, R. Schulz, T. Vandell, J. Muffett, and K. Ward of NRC Region III on November 14-18, and November 28 - December 2, 1983.

The items of noncompliance are discussed in this reply as required by Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations.

The enclosed response is arranged to correspond to the sequence of items cited in the body of the inspection report. The appropriate criterion and the number identifying the item are referenced. The response includes a discussion of Detroit Edison's efforts to improve the aggressiveness and effectiveness of the Quality Assurance Program.

We trust this letter satisfactorily responds to the non-compliances cited in the inspection report. If you have questions regarding this matter, please contact Mr. Lewis Bregni, (313) 586-5083.

Sincerely,



cc: P. M. Byron  
R. C. Knop  
W. Kropp  
J. Muffett

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THE DETROIT EDISON COMPANY

FERMI 2

NUCLEAR OPERATIONS ORGANIZATION

RESPONSE TO NRC REPORT NO. 50-341/83-31

DOCKET NO. 50-341

LICENSE NO. CPPR-87

INSPECTION AT: FERMI 2, NEWPORT, MICHIGAN

INSPECTION CONDUCTED: NOVEMBER 14-18, 1983

NOVEMBER 28-DECEMBER 2, 1983

NRC Inspection Report No. 83-31 observed that the Quality Assurance "problems" identified "...did not result in the installation of components of inadequate quality." This observation supports the conclusions of other independent assessments of hardware and records quality at Fermi-2 during the first, second and third quarters of 1984. Furthermore, the investigation and evaluations of perceived program weaknesses and examples described in report 83-31 have also led to the conclusion that identified or associated installed systems, components and structures meet quality requirements and are therefore capable of performing their intended safety related functions. Nevertheless, in the ongoing pursuit of excellence at Fermi-2, Detroit Edison has initiated and, in most cases, has completed initiatives which are directed toward enhancing the quality assurance program at Fermi-2 as the project progresses from construction, through the pre-operational testing program, toward fuel load and into the operating phase. These initiatives are described in the text that follows.

#### Nuclear Quality Assurance Organization

The systematic transition from the Project Quality Assurance Organization to the Nuclear Quality Assurance (NQA) Organization which began in January of 1984, was completed in March of 1984. This transition established the Nuclear Quality Assurance Organization, assigned responsibility for all quality assurance activities at Fermi-2 to the Director, Nuclear Quality Assurance, and required that NQA report directly to the Vice President, Nuclear Operations. Nuclear Operations was assigned total responsibility for Fermi-2 in August, 1984.

#### Strengthening The Organization

Concurrent with the QA Organization's transition, several changes in key positions in the organization were initiated. Supervisory and lead positions in the Engineering Quality Assurance units at both Troy and the Fermi-2 site, in the Operational Assurance section, and in the Maintenance and Modification section were enhanced with the addition of individuals with demonstrated technical, quality assurance and quality control knowledge and experience. Where appropriate, managerial, preoperational testing, startup, and operations skills and experience were also made prerequisites. In addition, where needs were identified, e.g. the Procurement QA and Maintenance and Modifications QA sections, manpower was added to meet expanding NQA work scope.

### Strengthening The Organization (Cont'd)

The increasing work scope was and is the result of the transfer to Detroit Edison of management and QA/QC responsibility for site activities such as warehousing, procurement and material control, mechanical, electrical and instrumentation and control field work, etc.

### Operations Quality Assurance Program

In April of 1984, the Operations Quality Assurance Program began to emerge as the dominant QA program for Fermi-2. This move signaled the gradual replacement of the construction phase nonconformance reporting, corrective action, auditing and surveillance programs at Fermi-2. As these programs were phased out, they were systematically replaced with programs conforming to the Operations QA Program. These changes facilitate centralized planning, tracking and trending programs. This change provides added assurance of the timely identification, resolution and closure of deficiencies, and therefore, enhances the overall effectiveness of the QA program.

### Quality Assurance Awareness Training

In the third and fourth quarters of 1983, a unique QA Awareness training program was developed and implemented. The objective of the program was to indoctrinate Nuclear Operations and project personnel in Engineering and Construction who perform activities affecting the quality of safety related items with the applicable elements of the QA program. This program is in addition to the indoctrination all personnel receive in the Fermi-2 orientation program. In the fourth quarter of 1983, QA Awareness Training was presented to Nuclear Operations Management, and Detroit Edison Company Executive Management (including the Chief Executive and Operating Officers and other Corporate Officers). Since January of 1984, more than 600 management, QA, Operations, Administrative, Maintenance, Security, Training and Engineering personnel have participated. Edison plans to continue the Awareness Training sessions until identified target populations have participated. Participation in the Awareness Program is fully documented.

### Audit and Surveillance Programs

High visibility, vigorous, structured, audit and surveillance programs associated with ongoing and planned

Audit and Surveillance Programs (Cont'd)

activities at Fermi-2 are being implemented by professionals competent in quality assurance and other appropriate technical areas. The auditing function of NQA has been centralized in the QA Staff Section (successor to the Construction QA Section). This program is driven by an integrated Master Audit Plan and is implemented in accordance with quarterly (3 month) detailed schedules. In the period between January of 1984 and the present, the audit group has performed forty-two (42) audits. The scope of the audit activity includes verification of compliance with QA program requirements and implementing procedures by Detroit Edison and Contractor organizations involved in such diverse activities as: design, procurement, construction, maintenance, operations, preoperational testing, training, security, radiological environmental monitoring, health physics, etc. The forty-two audits conducted to date have identified 179 findings, of which 83 have been closed. The 5 audits currently in progress include Fire Protection, Procurement, Security, Punchlist Cards (PLC) and Field Engineering Memos (FEM). Twenty-seven audits are planned for the remainder of 1984.

The surveillance program, consisting of planned and unplanned real-time evaluation of the acceptability of the implementation of an activity in accordance with procedures, is also implemented by competent professionals. In the period between January of 1984 and the present, there have been 875 documented surveillances which resulted in 332 findings, 234 of which have been satisfactorily resolved and are closed.

Procedural Compliance

NQA has designed and initiated the implementation of an innovative surveillance program directed at ensuring compliance with Plant Operating Manual Procedures. The computer based program is structured to systematically and rigorously monitor real time compliance with implementing procedures. This program provides uniform review and surveillance, confidence in results, timely reporting of adverse findings to appropriate Nuclear Operations personnel, and is designed to interface with the NQA automated trend and corrective action programs.

NQA QC Responsibility

Since January of 1984, the Quality Control (QC) function within NQA has gradually assumed responsibility for all on-

NQA QC Responsibility (Cont'd)

site first line inspection/verification (QC) activities associated with safety related items except the work scope associated with the sealing contractor. This activity includes inspection and test planning, inspection, inspection reporting and QA verification of work packages for acceptance and closure. In addition, the responsibility for administering the contract with the nondestructive examination service involved in QC work was assumed by NQA in September of 1984.

Corrective Action Request Program

In addition to the initiatives described above, the QA Program at Fermi-2 features a Corrective Action Request Program which provides a method for systematic escalation of the level of response for significant conditions adverse to quality to Nuclear Operations Management.

The bases which would lead to escalation of response via the Corrective Action Request Program include:

- o The condition is repetitive indicating a negative trend in quality.
- o Review of various nonconformance reporting documents indicates an adverse trend.
- o Follow-up activities indicate that corrective actions have not been effective.
- o NQA follow-up review of conditions adverse to quality shows that the approved corrective action was not taken in a timely manner.
- o Failure to comply with a docketed (licensing) commitment.
- o Audit or surveillance response is overdue by more than 30 days.
- o Disagreements over findings or required responses which leads to inadequate or untimely resolutions of problems.

The QA Program elements which provide for input to the Corrective Action Program include: nonconformance reports, audits, surveillances, and the trend program. Since its

Corrective Action Request Program (Cont'd)

inception, 4 "Corrective Action Requests" have been initiated, 2 cases are being evaluated for escalation, and 2 have been closed.

Summary

Objective evidence of the effectiveness of the initiatives described above and the bases for closure of items described in the response text that follows are available at the Fermi-2 site for verification by NRC personnel.

Detroit Edison believes that the Quality Assurance Program in place at Fermi-2 is effective and sufficiently aggressive, and is capable of assuring and maintaining an acceptable level of quality which will allow Fermi-2 to be operated safely and reliably.

Statement of Noncompliance, 83-31-03, Criterion XVII

10 CFR 50, Appendix B, Criterion XVII, as implemented by the DECo Quality Assurance Manual, requires that sufficient records be maintained to furnish evidence of activities affecting quality and that the records include closely related data such as qualifications of personnel.

Contrary to the above, the licensee failed to include a written basis for QC Inspector Certification as a part of the certificate required by ANSI N45.2.6-1973, and to provide adequate backup data to substantiate that basis.

Corrective Action Taken and Results Achieved

Immediately after this item was identified, Detroit Edison Quality Assurance reviewed the qualification/certification files for all active Project Quality Assurance Quality Control Inspectors to determine if they met the qualification requirements of ANSI N45.2.6 - 1973. Although the specific basis for the certification was not written on the certificate, every Inspector's file contained information which demonstrated that the experience and education requirements of ANSI N45.2.6 - 1973 were met. Each Inspector's certification certificate was amended by an attachment which identifies the specific basis for that Inspector's certification.

Corrective Action Taken To Avoid Further Noncompliance

Project Quality Assurance Procedure (PQAP) 9.0202, "Qualification and Certification of Inspectors," was issued on October 24, 1983. This procedure was intended to replace the construction phase procedure under which the Inspectors were certified. PQAP 9.0202 required that the basis for certification be identified on the certification form itself. In March, 1984, Nuclear Quality Assurance Procedure (NQAP) 0202 superseded PQAP 9.0202 but maintained similar requirements for the identification of the basis for inspector certification. Certifications and recertifications are now performed under NQAP 0202.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.



Statement of Noncompliance, 83-31-04A&B, Criterion XVIII

10 CFR 50, Appendix B, Criterion XVIII, as implemented by the DECo Quality Assurance Manual, requires that a comprehensive system of planned and periodic audits be carried out to verify compliance with all aspects of the Quality Assurance Program and follow up actions, including reaudit of deficient areas, be taken where indicated.

Contrary to the above, the Region III inspector identified the following:

- a. No audits which addressed the quality assurance program implementing procedures (i.e., WB-As, WB-Cs, WB-Es, and WB-Qs) had been conducted by Wismer and Becker.
- b. The effectiveness of corrective action with regard to a DECo audit of Bechtel (Audit No. 83-07, Finding No. 83-07-01D) was not adequately assessed, in that (1) the acceptability of Bechtel's assessment relative to the finding's impact on hardware was not reviewed by DECo and (2) no objective evidence existed to substantiate that the training specified in the corrective action had been conducted.

Corrective Action Taken and Results Achieved

Immediately after these items were identified, Project Quality Assurance (PQA) initiated and ensured the completion of the following actions:

- a. The Wismer and Becker Corporate QA Manager was requested to review their program for conducting audits at Fermi 2. As a result of this review, a revised audit schedule for Fermi 2 was issued on February 10, 1984. This schedule provided audit coverage of Wismer and Becker activities for the applicable QA criteria. To assure that Wismer and Becker site procedures receive proper audit coverage, an audit scope was developed in matrix form to cross reference the QA criteria with the appropriate Wismer and Becker procedures. Audits using this planning matrix were initiated in February, 1984.

Corrective Action Taken and Results Achieved (Cont'd)

- b. PQA performed a surveillance (QSR No. 84007) of six available QA Level I Bechtel Work Packages in the records vault that had been identified in Audit 83-07 as having design documents that were not the latest revision. This surveillance was performed to verify Bechtel's assessment that the document discrepancies did not impact the installed hardware. The work Bechtel performed under these packages had been inspected by Detroit Edison PQA. Inspection records were checked in this surveillance to ensure that the work had been inspected to the correct revision of the design documents. No discrepancies were identified.

Audit finding 83-07-01D required that training be provided in the use of the procedure for processing work travelers. This procedure was identified in the audit finding as FGP-9.0, "Design Change Request Procedure." As a result of Audit 83-07, Bechtel issued a revision to procedure, FGP-13.0, "Bechtel Work Package Control," to control processing work travelers. Objective evidence of training in FGP-13.0 was attached to the closed audit finding.

Corrective Action Taken To Avoid Further Noncompliance

- a. Detroit Edison Audit A-QS-P-84-07 verified that Wismer and Becker has implemented the audit matrix discussed under the corrective action.
- b. Detroit Edison Project Quality Assurance (PQA) Department revised PQA Procedure 9.1801, "Audits" in January, 1984 to describe the actions required to verify that corrective actions have been satisfactorily completed.

Date When Full Compliance Will be Achieved

Full compliance has been achieved.

Statement of Noncompliance, 83-31-07, Criterion X

10 CFR 50, Appendix B, Criterion X, as implemented by the DECo Quality Assurance Manual, requires that a program for inspection of activities affecting quality be established and performed to verify conformance with requirements.

Contrary to the above, Wismer and Becker failed to establish a pipe bending inspection program or monitoring system to ensure that (1) a qualified bending procedure was being employed in the field, (2) a qualified bending machine was being used for production bends, and (3) that dimensions for ovality and wall thickness were in compliance with the ASME Code.

Corrective Action Taken and Results Achieved

During January 1984, Edison performed a statistically sampled walkdown, which was documented on Surveillance Report 5016, to verify compliance with specified bending criteria for safety-related instrumentation tubing and two inch and under safety-related piping. A total of 100 bends were measured for ovality at three locations on each bend when possible. The maximum ovality found was 6.63%, which is less than the 8% allowable per ASME code, section NB-4223.2. Statistical analysis indicated that 6.19% ovality would be exceeded less than 2.3% of the time with a 95% confidence level. This statistical verification of the acceptability of the ovality indicates that the bending process at Fermi was well controlled. Considering this verification that the process was well controlled, Edison Engineering's evaluation indicates there was no violation of the minimum wall thickness. Therefore, Detroit Edison has concluded that the ovality and wall thickness for pipe and tubing bends are acceptable.

Corrective Action Taken To Avoid Further Noncompliance

The W&B Quality Control Department established a surveillance requirement to assure qualified procedures were being used in the field, to assure that a qualified machine was being used for production bends, and to verify that bend quality was being maintained. This surveillance requirement was addressed in W&B procedure WB-Q-113, Revision 10, issued in January 1984.

Date when Full Compliance Will Be Achieved

Full compliance has been achieved.

Statement of Noncompliance, 83-31-11A&B, Criterion XII

10 CFR 50, Appendix B, Criterion XII, as implemented by the DECo Quality Assurance Manual, requires that measures be established to ensure that measuring and testing devices, used in activities affecting quality, be properly controlled, calibrated, and adjusted and specified periods to maintain accuracy.

Contrary to the above, the Region III Inspector identified the following:

- a. Wismer and Becker failed to procedurally establish adequate measures to ensure proper control and calibration of measuring and test equipment.
- b. Wismer and Becker failed to evaluate the validity of previous inspections or test results accomplished with lost calibrated items as required by ANSI N45.2, Section 13.

Corrective Action Taken and Results Achieved

- a. Wismer and Becker immediately recalled all of their calibrated Measurement and Test Equipment (M&TE) from the field, took inventory of all M&TE in their possession, removed all of this equipment from the satellite storage areas and set up one central storage area controlled by their Quality Control personnel.

The following actions were taken to address the specific discrepancies identified:

- o Calibration and adjustment intervals were procedurally established and were incorporated in WB-E-104 by a revision, dated January 17, 1984 and Interim Change Procedure 621, dated March 17, 1984.
- o Issuance of calibrated tools and measuring devices to the field are controlled by a recall system which was also incorporated in WB-E-104 by a revision, dated January 17, 1984.

Corrective Action Taken and Results Achieved (Cont'd)

- o A requirement for craft training in the control of calibrated items did not exist per se, but craft supervisors are given training as established in W&B Procedure QA-TM-1 "Training Manual for Construction and Inspection Personnel".
  - o Storage requirements for calibrated items were incorporated in WB-E-104 by a revision, dated January 17, 1984.
- b. The requirement to evaluate the validity of previous inspection and test results for lost, damaged and removed from service M&TE was added to Wismer and Becker's procedure WB-E-104 by a revision, effective January 20, 1984. This procedure required that a Deviation Disposition Request (DDR) be initiated by the W&B Project Quality Manager whenever an item of M&TE (used by quality personnel to verify and record data for acceptance of work) was lost, damaged, returned late to the central storage location, or an evaluation of the as found calibration data showed that previous test results were questionable.

Wismer and Becker performed a review of all of their calibrated M&TE. DDR M-12790, as dispositioned by Edison Engineering, required that W&B Engineering evaluate work that was performed using equipment that had been lost, scrapped, or taken out of service since its last calibration. This DDR resulted in a number of actual torque values being reverified. M&TE other than torque wrenches did not affect installed hardware and no reverifications were required. All reverifications were completed satisfactorily and the DDR was closed on June 9, 1984.

Additionally, Edison's Nuclear Quality Assurance Department completed Audit A-CQ-P-84-02 of all site contractors' M&TE Programs including Wismer and Becker's program in February, 1984. As a result of the audit, ten audit findings were issued, three of which were against W&B. All audit findings have been closed.

M&TE audits of Nuclear Production organizations conducted in 1983 were reviewed and no comparable issues were identified.

Corrective Action Taken To Avoid Further Noncompliance

The current QA program establishes adequate controls for M&TE for all site organizations in Quality Assurance Program Requirement, QAPR-12, "Measurement and Test Equipment." QAPR-12 provides for routine evaluation of the calibration and control of M&TE in conjunction with the audit and surveillance program.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Statement of Noncompliance, 83-31-12A&B, Criterion II

10 CFR 50, Appendix B, Criterion II, as implemented by the DECo Quality Assurance Manual, requires that the quality assurance program provide control over activities affecting the quality of the identified structures, systems, and components to an extent consistent with their importance to safety, and that the program provide for indoctrination and training of personnel performing activities affecting quality as necessary to ensure that suitable proficiency is achieved and maintained.

Contrary to the above, the Region III Inspector identified the following:

- a. An adequate training program had not been established and executed for Wismer and Becker supervisory personnel responsible for safety-related piping installation.
- b. Wismer and Becker did not have in place adequate controls to ensure that the FSAR Chapter 14 commitments for construction completion prior to jurisdictional transfer of systems, were being met.

Corrective Action Taken and Results Achieved

- a. Detroit Edison management took immediate action to ensure all site contractors provided appropriate training to craft and supervisory personnel. Adequate training of construction personnel for all active site contractors was confirmed by Audit A-CQ-P-84-04 which was conducted in February and March, 1984 and covered indoctrination and training activities. This audit evaluated seven site contractors and included Wismer and Becker (W&B) craft supervisors, purchasing, engineering and QA/QC personnel. The audit noted that W&B had defined indoctrination and training requirements in procedure QA-TM-1, and implementation was satisfactory except for 3 findings. The corrective actions resulting from the audit findings were completed and verified closed by NQA prior to July, 1984.
- b. An evaluation of W&B procedures by Edison revealed that the W&B procedures were adequate and in compliance with the ASME code. However, Chapter 14 of the FSAR did not adequately reflect Edison's current policies on system turnover and jurisdictional controls. Chapter 14 of the FSAR was appropriately revised in FSAR Amendment 55.

Corrective Action Taken to Avoid Further Noncompliance

- a. The current audit and surveillance programs contain provisions for the evaluation of the effectiveness of training for site organizations performing activities affecting the quality of safety related items.
- b. Approved procedures which assure adequate system completion and turnover were in effect. These procedures are consistent with the amended Chapter 14 of the FSAR.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.



Statement of Noncompliance, 83-31-14A&B, Criterion XV

10 CFR 50, Appendix B, Criterion XV, as implemented by the DECo Quality Assurance Manual, requires that measures be established to control materials which do not conform to requirements in order to prevent their inadvertent use or installation, that the measures include disposition of nonconforming items, and that nonconforming items be repaired or reworked in accordance with documented procedures.

Contrary to the above, the Region III Inspector identified the following:

- a. Nine instances in which Wismer and Becker documented nonconforming conditions in surveillance reports, thereby circumventing the established nonconformance control system.
- b. Wismer and Becker replaced a valve seat on a 24" dry-well purge piping valve without generating a Supplemental Operation Process Traveler as required by W&P (sic) Procedure No. WB-E-130, thereby circumventing established procedural requirements.

Corrective Action Taken and Results Achieved

- a. Wismer and Becker immediately initiated action to assure that all hardware deficiencies are documented on Deviation Disposition Requests (DDR's) versus Surveillance Reports (SR's). Procedure WB-Q-113 was revised to incorporate the immediate action prohibiting the use of SR's to document hardware deficiencies for safety related items. The revised procedure was formally issued for implementation in January 1984.
- b. Wismer and Becker conducted a review of the 916 SR's written since November, 1982, when a similar evaluation of SR's had been completed. The results of this review are as follows: Of the 916 SR's reviewed, 123 identified potentially nonconforming conditions. These deficiencies were documented on 24 DDR's. These 24 DDR's document 4 of the 9 potential nonconforming conditions identified by the NRC inspector. The other 5 items identified by the NRC inspector as potential nonconforming conditions were evaluated as not requiring DDR's by W&B. W&B requested and received concurrence from Detroit Edison on these decisions.

Corrective Action Taken and Results Achieved (Cont'd)

- b. Work on QA Level I and ASME valves requires the use of an Operation Process Transmittal. Work Assignment Traveler Sheets (WATS) are not normally used for work on QA Level I and ASME valves. Since a surveillance report instead of a DDR was used to document the original deficiency, a WATS was improperly used to perform work on this QA Level I valve.
  
- b. Wismer and Becker initiated DDR (MP) 13010 on January 24, 1984 to document this discrepancy. The DDR was dispositioned "Use-As-Is" because the acceptability of the work done on the valve was verified by a QC inspector and documented on Surveillance Report #2786 dated January 20, 1983.

In conjunction with this item, W&B reviewed all WATS issued since their inception (approximately 1850). This review identified only 19 that required but did not include Operational Process Travelers. These deficiencies were documented on DDR's which have been dispositioned and closed.

Corrective Action Taken to Avoid Further Noncompliance

The procedural changes described above that prohibit the use of Surveillance Reports for reporting nonconforming conditions in safety related hardware will prevent the recurrence of these items.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Statement of Noncompliance, 83-31-16A&B, Criterion V

10 CFR Part 50, Appendix B, Criterion V, as implemented by the DECo Quality Assurance Manual, requires that activities affecting quality be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances, and be accomplished in accordance with those instructions, procedures or drawings.

Contrary to the above, the Region III inspector identified the following:

- a. Two foundation anchor bolts for the standby liquid control storage tank were not installed in accordance with Wismer & Becker Procedure No. WIS-G-106 (sic) and DECo Drawing No. 6M721-3029.
- b. The standby liquid control storage tank manway cover was not secured in accordance with Startup Instruction No. 7.8.0.01.
- c. Thirteen systems were identified with equipment which had been turned over to DECo by Wismer and Becker without review of the documentation packages as required by the Test and Startup Administrative Procedure Manual, paragraph 7.4.2-2(b).

Corrective Action Taken and Results Achieved

- a. The foundation anchor bolts for the standby liquid control (SLC) storage tank were inspected and documented on Surveillance Report QSR #84010. Punch marks, as required by Procedure WB-E-106, were located for ten of the twelve anchor bolts. The other two were the same two bolts identified by the Region III inspector as unacceptable.

Of the two bolts identified by the NRC inspector, one is acceptable in that a punch mark was located at the point where the nut touches the bolt and full thread engagement was found. The other bolt was considered unacceptable in that the anchor was below the top of the nut approximately 1/4 of a thread and no punch mark was located. Nonconformance reports were issued to document and evaluate the lack of sufficient thread engagement and the lack of verification that the bolt was torqued. A PN-21 was issued to torque the suspect bolt and the lack of thread engagement was "accepted as is."

Corrective Action Taken and Results Achieved (Cont'd)

- b. The NRC inspector identified that the SLC tank manway cover was in place but it was not tightened and the appropriate cleanliness tag was not in place. During the SLC preoperational test, PRET.C4100.001, the manway is removed in order to conduct steps in the Preoperational test procedure. As required, the manway cover is removed when checking level or mixing chemicals. During this test, when not specifically required to be open, the cover is closed.

W&B issued process traveler #22446 on January 12, 1984 to clean the SLC tank interior and secure the manway bolts. NQA documented this work on January 19 and 20, 1984, in Quality Surveillance Report, QSR No. 84010.

- c. The 13 systems identified in the NRC inspection report were, in fact, under the control of the N Stamp holder (W&B) and all pressure boundary work was being performed by W&B in accordance with ASME code requirements. Documentation was compiled and reviewed and the systems were N Stamped and transferred to Edison in accordance with FSAR Chapter 14 (Ref. 14.1-1 and 2) and ASME code requirements.

Corrective Action Taken To Avoid Further Noncompliance

- a. Detroit Edison's evaluation of this item concluded that no further corrective action is warranted.
- b. At the completion of the preoperational test and prior to final closure, the tank will be reinspected by the Startup Flushing Coordinator and cleaned if required. This item is being tracked by PN21-991506.
- c. Procedures were reviewed to ensure that they clearly define FSAR requirements for the jurisdictional transfer (contractor to Edison System Completion Organization (SCO)) and the turnover process (SCO the operating authority, Nuclear Production).

Date When Full Compliance Will Be Achieved

- a. Full compliance has been achieved.
- b. Full compliance will be achieved with final closure of the SLC tank manway cover at the completion of the preoperation test.
- c. Full compliance has been achieved.

Statement of Noncompliance, 83-31-18A&B, Criterion XVI

10 CFR Part 50, Appendix B, Criterion XVI, as implemented by the DECo Quality Assurance Manual, requires that conditions adverse to quality be promptly corrected and the cause of those conditions be determined and corrective action taken to prevent repetition.

Contrary to the above, the Region III inspector identified the following:

- a. Adequate corrective action was not taken by DECo with regard to Deviation Disposition Request Nos. E-11430 and E-8632B and Nonconformance Report No. 83-1252.
- b. DECo failed to take prompt and effective corrective action with regard to NRC item of noncompliance No. 341/82-10-04.

Corrective Action Taken and Results Achieved

- a. This item addresses the adequacy of the corrective action and documentation of corrective action for nonconforming conditions that Detroit Edison discovered in the RHR 4160 volt switchgear installation. Specifically, this item addressed Deviation Disposition Request Nos. E-11430 and E-8632B and Nonconformance Report 83-1252.

Detroit Edison's overall corrective action was to ensure that the as built RHR 4160 volt switchgear and similar installations meet design requirements. The specific actions taken to make this verification are identified in Detroit Edison's Final Report of 10CFR50.55(e) Item 108. This report was made in a letter to Mr. James G. Keppler from Mr. Wayne H. Jens dated July 13, 1984.

Additionally, Detroit Edison investigated and resolved each of the specific concerns the NRC inspector identified in Inspection Report 83-31-18(A). The results of this investigation appear below:

DDR No. E-11430:

- (a) The disposition of DDR E-11430 required that the actual embedment of the sawed off anchor bolts be

Corrective Action Taken and Results Achieved (Cont'd)

determined by ultrasonic testing. The "use as is" disposition was technically justified by a comparison of the UT results and Specification 3071-142, Building Work for Residual Heat Removal Complex, which was in effect when the switchgear was installed.

As discussed below, the UT results were mistakenly evaluated against the more stringent anchor bolt embedment requirements of Specification 3071-226.

- (b) The UT results from the uncalibrated test equipment were verified as accurate using a calibrated instrument.
- (c) The RHR Switchgear was installed under Edison Specification 3071-142 which required that anchor bolts be installed in accordance with the manufacturer's recommendation, a 2-1/8" inch embedment for 1/2 inch anchors. After the switchgear was installed, this requirement was superseded by Specification 3071-226, "Purchase and Installation of Concrete Anchors", which requires a 3-1/2 inch embedment. The DDR, which addressed anchors that were sawed off to permit installation of the switchgear, evaluated the embedment against Specification 3071-226 and that concluded that the embedment was insufficient.
- (d) The results of the UT test demonstrated that the anchors had a 3 inch minimum embedment versus 2-1/8 inch embedment required at the time of installation by Specification 3071-142. However, the dispositioning engineer compared these results with the more stringent requirements of Specification 3071-226 and concluded that the installation was inadequate. To facilitate the construction and testing schedule, the exterior anchors were reinforced with an additional four anchors in the disposition of the DDR. Later, Design Calculation D.C. 2618, Rev. A confirmed that the original installation was sufficient to meet design criteria without modification.
- (e) Edison Engineering agrees that the assumptions of the initial analysis were not as conservative as

Corrective Action Taken and Results Achieved (Cont'd)

they could have been. However, the final analysis did demonstrate the integrity of the equipment and mounting during design basis seismic loading.

DDR No. E-8632B

Tension testing of wedge anchors was in the specifications only to assure that the torque values specified resulted in the correct axial tension in the wedge anchor. The requirement for tension testing was deleted from specification 3071-226. The specific concerns of the NRC inspector were addressed in NCR 83-1252, as discussed below.

NCR No. 83-1252

Documentation did exist which verified the installation of the wedge anchors, the embedded channel and switchgear. However, no torque or tension test records for the wedge anchors were discovered, since these records were not required at the time of installation.

Edison NQA has determined that torque or tension test records are available for other safety related electrical equipment which utilize wedge anchors in both the RHR complex and the Reactor and Auxiliary Buildings.

- b. Edison contracted Management Analysis Company (MAC) for an independent third party audit of Fermi 2's Construction Quality Assurance Program. This audit has been completed and the report was issued May 14, 1984.

Corrective Action Taken To Avoid Further Noncompliance

- a. Shortly after this deficiency was discovered, these nonconformances and their dispositions were reviewed with the personnel involved by the Director and Assistant Director of Field Engineering. The causes and results were discussed at length. As a result, all Resident Engineers were advised of the need to document the specific technical justification for the acceptance of nonconformance disposition decisions.

Corrective Action Taken to Avoid Further Noncompliance (Cont'd)

Procedures 12.000.52T, "Nonconformance Reports" and 12.000.32, "Deviation and corrective action reporting were revised to provide additional guidelines for the determination of the cause and corrective actions to prevent recurrence of nonconforming conditions.

Design calculations performed by Field Engineering are reviewed independently (third party) by Troy Engineering. Previously, this third party review consisted of a spot check. Field Engineering Work Procedure Section 3, paragraph 2.17 identifies the specific requirements for design calculations performed by Field Engineering.

Field Engineering recently attended training classes on the disposition of deviation documents such as DDR's and NCR's. One item specifically addressed was the investigation into causes of deficiencies. This training was completed on October 4, 1984.

- b. Operational Quality Assurance Policy 34, Rev. 0, and Quality Assurance Program Requirement, QAPR-34 Rev. 0, "Management Assessment" were issued in June, 1984. These establish the responsibility and methods for management to assess the status and adequacy of the Operational Quality Assurance Program.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.



Statement of Noncompliance, 83-31-19, Criterion VII

10 CFR 50, Appendix B, Criterion VII, as implemented by the DECo Quality Assurance Manual, requires that measures shall be established to ensure that purchased material, equipment, and services conform to the procurement documents.

Contrary to the above, DECo failed to provide appropriate source selection and evaluation for the following:

- a. P.O. No. ID-51500 (sic) (Bolting Material)
- b. P. O. Nos. NM-28306 and A-010276 (Printed Circuit Boards)
- c. P.O. No. A-117317 (Reactor Recirculation Valve Replacement Stem)
- d. P.O. No. 1A-85153 (Engineering Services)

Corrective Action Taken and Results Achieved

At the time of the NRC inspection, Edison's Procurement Program allowed replacement parts to be procured from the Original Equipment Manufacturer (OEM) even though that vendor was no longer on the Approved Suppliers List (ASL) because of procurement inactivity. This practice was immediately discontinued following the NRC inspection.

An investigation was undertaken to determine if this practice of purchasing spare and replacement parts from the OEM had resulted in procurements from vendors who were not implementing an acceptable QA program at the time of purchase. This investigation covered a cross section of the products procured and included 20% of the OEM vendors. All of the purchase orders from this sample of vendors were reviewed. This review identified 66 instances where purchase orders were placed during a period when the vendor was not on Edison's ASL. However, objective evidence in the form of nuclear industry audit activity was found that showed that these vendors did, in fact, have accepted QA programs implemented during the period they were not covered on the Detroit Edison ASL.

Although purchases were made under the OEM provision, the procurement documents required items to be supplied in accordance with Edison standards and specifications.

Corrective Action and Results Achieved (Cont'd)

Additionally, these items were subject to source or receipt inspections at the time these procurement activities were occurring to verify that quality requirements were being met. Based on the results of this investigation, Edison has concluded that material received using the OEM method met applicable quality requirements.

Specific Corrective Action:

a. PO No. ID-51550 (Bolting Material)

The bolts should have been classified as commercial grade as defined in 10CFR Part 21. Samples of the same type of materials purchased from the same manufacturer were selected from a subsequent Purchase Order 1A52694 for verification testing. The test was performed by an independent testing laboratory in October 1981 which resulted in acceptance of the bolts.

b. PO Nos. NM-28306 and A-010276 (Printed Circuit Boards)

Both PO's have been reclassified as CQ to designate commercial grade as defined in 10CFR21.

PO NM-283086 was addressed by CQ Engineering and inspection criteria was provided. Following inspection in which quality requirements were verified, the circuit board was accepted and released for installation.

PO A010276 purchased two Hi-low voltage alarm printed circuit boards for use in the battery chargers. One circuit board was rejected during receiving inspection due to damage. The accepted circuit board later received a post installation functional test to assure its performance characteristics.

c. PO No. A-117317 (Reactor Recirculation Valve Replacement Stem)

PO No. A-117317 required that the vendor have a QA program. Documentation received with the stem identifies the item as safety related, a CMTR shows that the material is correct, and a liquid penetrant inspection report shows that the surface was free of defects and a certificate of conformance shows that the nondestructive examination personnel were qualified.

Specific Corrective Action: (Cont'd)

d. PO No. 1A-85153 (Engineering Services)

Although PO No. 1A-85153 should have been reviewed by QA, change order #1 was issued on December 20, 1982, 2 months after the PO was issued, deleting the engineering services that were considered safety related. Therefore, no safety related services were provided under this PO. This change order was not in the PO file reviewed at the time of the NRC inspection.

Corrective Action Taken to Avoid Further Noncompliance

The procurement program was enhanced to assure that commercial quality items are procured under controls that include technical evaluation of the suitability of the item for its safety related application and inspection and/or testing to verify conformance with quality requirements.

The ASL portion of the procurement program was revised and reissued on February 22, 1984. Section 2 of the ASL, Special Case Items, now states that "Suppliers of special case items that are not identified in the ASL will be qualified by Procurement QA on a case basis".

The procurement program requires that safety related procurement packages be reviewed and approved by Nuclear Quality Assurance prior to placement.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.