

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/82-14(DETP)

Docket No. 50-341

License No. CPPR-87

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

Facility Name: Enrico Fermi Nuclear Power Plant, Unit 2

Inspection At: Enrico Fermi 2 Site, Monroe, MI

Inspection Conducted: September 8-10, 1982

Inspectors: K. R. Naidu

*Naidu*

10-25-82

*B. H. Little*  
B. H. Little

Resident Inspector

10-28-82

Approved By: *C. C. Williams*  
C. C. Williams, Chief  
for Plant Systems Section

10/25/82

Inspection Summary

Inspection on September 8-10, 1982 (Report No. 50-341/82-14(DETP))

Areas Inspected: Conduit installations and inspections, training and indoctrination of inspection personnel and review of deviation disposition requests. The inspection involved a total of 19 inspector-hours by one NRC regional inspector and 15 inspector-hours by the Senior Resident Inspector.

Results: Four items of noncompliance were identified: Failure to follow procedures, failure to establish procedures, failure to use DDRs to identify nonconforming items, failure to take corrective action.

## DETAILS

### Persons Contacted

#### Detroit Edison Company (DECo)

- \*W. J. Fahrner, Project Manager
- \*D. Ferencz, Supervisor, Construction QA
- \*G. Trahey, Assistant Director, Project Quality Assurance - Director
- \*S. H. Noetzel, Assistant Project Manager
- \*B. Kauppila, Lead Electrical QA
- \*D. Walker, Electrical QA

#### L. K. Comstock Company (LKC)

- \*L. Hack, Manager, Quality Control
- M. Boylan, QC Inspector
- H. Murphy, QC Inspector
- S. B. Dooley, QC Inspector
- J. Gretencord, QC Inspector
- B. Freimark, QC Supervisor
- D. Perkins, QC Inspector

\*Denotes those who attended the exit meeting on September 10, 1982.

### Functional or Program Areas Inspected

1. L. K. Comstock (LKC) QC Inspections of Electrical Installation: On September 8, 1982, the inspectors met with DECo Construction and Quality Assurance representatives at LKC QC Manager's office to, review LKC QC inspectors' qualification records, interview QC inspectors and QC supervisors, and review QC records and procedures relative to electrical installations. Subsequent inplant tours were also performed.
2. QC Inspectors' Qualification Records: The inspectors selected four LKC QC inspector qualification records for review. The qualification review was made with reference to LKC Procedure 4.1.4 (Indoctrination and Training of QC Personnel) and ANSI N45.2.6(1073). The inspectors found that the personnel qualification packages contained appropriate records of indoctrination, training, and certification and met the intent of ANSI N45.2.6 as endorsed by Regulatory Guide 1.58.
3. Personnel Interviews: The inspectors interviewed LKC's QC Manager, QC Supervisor, and five QC inspectors. The QC inspectors expressed having received good "on-the-job training" and that LKC's overall training program was adequate to good. With one exception, the persons interviewed believed they had received good QC support, although some procedures lacked specific inspection criteria. The inspectors noted there were differing opinions relative to the use of Deviation Disposition Request (DDR) and Field Surveillance Correction Report (FSCR). One QC inspector expressed having received

less than adequate supervisory and engineering support, that some procedures relating to electrical conduit and supports contained conflicting specifications, and that resolving the conflicts was frustrating and time consuming. (On September 27, 1982, these and related issues were transferred to the Office of Investigation for their follow-up.)

4. QA Records, Related Procedures, and Practices: Selected administrative and quality control procedures were reviewed to assess their adequacy with regard to scope, clarity, and consistency with QA program requirements. The following procedures were included in this review.

- LKC Work Instruction 000-03-008 Installation of Electrical Cable
- LKC QA Procedure 4.11.1 Control of Nonconforming Item
- LKC QA Procedure 4.1.1 Indoctrination and Training of QA Personnel
- LKC QA Procedure 4.3.6 Inspection of Electrical Conduit
- LKC QA Procedure 4.3.7 Inspection of Seismic Class I Supports
- Daniel Int. Corp. Procedure AP-VII-02 Deviation Disposition Request (DDR)
- DECO Specification 3071-33 Electrical Conduit Supports
- DECO Specification 3071-128 Fabrication and Erection Requirements

In addition, other quality-related documents were reviewed, including LKC Hold Tag Log, and selected DDRs and FSCRs. Based on this review, the inspectors performed an in-plant inspection of the electrical conduits and supports referred to in these documents.

5. LKC DDR No. 1757 dated May 19, 1982 identified the following deviation: "Cable No. 220060-2P was pulled through conduit No. AA002-2P while temporarily supported, contrary to Edison specification. Cable has been terminated and violation still exists. Ref. Edison Spec. 3071-128 ED 4.1, 4.2 and 6.2; Edison Spec. 3071-33 8.8, 8.81 Location S.W. Quad in TBO Elev. 540'."

This DDR was voided. The void form contained the following explanation: "Per LKC WI-000-03-008 Section 3.1.1, raceway must have adequate support prior to pulling cable. Reference LKC QC memo 5-82-6 which states conduit may lack permanent supports or be temporarily supported, therefore the pulling of cable through temporarily supported conduit is not a violation to Edison specifications as documented by DDR E-8565. The temporary support will be addressed on a FSCR."

LKC Review and processing of this item was deficient in that:

The deviation identified in DDR 1757 contains a correct and an incorrect statement:

- . The correct statement is "The cable has been terminated and the violation still exists" and references DECO Specifications.
- . The incorrect statement is "Cable No. 220060-2P was pulled through conduit AA002-2P while temporarily supported contrary to Edison Specification.

- a. The reviewer who acknowledged the incorrect information contained in the deviation, namely, "...pulling of cable...is not a violation of Edison Specification," failed to follow the Daniel Construction Procedure AP-VII-02 Section 3.10 which states, "At any time during the review and approval of a DDR that information is determined to be inadequate, incorrect, etc., the DDR shall be returned to the person who originally provided this information, for correction, and the DDR review/approval cycle shall then be repeated from the originator's Quality Manager forward."

Contrary to the above, after determination that DDR 1757 contained incorrect information, the DDR was not returned to the person who originally provided the information, for correction, and the DDR review/approval cycle was then not repeated from the originator's Quality Manager forward."

The inspectors informed the licensee that failure to accomplish activities in accordance with Daniel Procedure AP-VII-02 is an item of noncompliance contrary to Criterion V of 10 CFR 50, Appendix B (341/82-14-01A(DETP)).

Furthermore, even though the nonconforming condition stated in DDR 1757 existed on June 11, 1982 and continued to exist as of September 10, 1982 the DDR was marked void.

- b. Paragraph 3.11 of Daniel Procedure AP-VII-02 states in part, "The originator's Quality Manager shall mark the DDR void, sign and date, and attach the void form to the DDR and transmit to the Project Quality DDR Coordinator."

Contrary to the above, the LKC Assistant QC Manager, instead of the LKC QC Manager who was present on site, marked the DDR void, signed and dated the DDR. The inspectors informed the licensee that this is another example of an item of noncompliance contrary to Criterion V of 10 CFR 50, Appendix B (341-82-14-01B(DETP)).

- c. Paragraph 4.1.5 of Daniel Procedure AP-VII-02 states in part, "If it is determined that there is no nonconformance, notify the originator to remove the hold tag. When contractor number is used, annotate log."

Furthermore, Paragraph 3.4.3 of LKC Procedure 4.11.1 states in part, "upon closure of the nonconformance document the Hold Tags shall be removed and the Hold Tag Report shall be annotated with the removal date."

Contrary to the above, even though DDR 1757 was closed and marked void, the Hold Tag #1617 issued to DDR 1757 was still attached to the conduit and LKC QC Hold Tag Log indicated that Hold Tag No. 1617 remained open. The inspectors informed the licensee that the above instance of failure to follow established procedure was another example of the item of noncompliance contrary to Criterion V of 10 CFR 50, Appendix B identified in Paragraph 5a (341/82-14-01C(DETP)).

- d. DDR No. 1757 Void Form references LKC work instruction No. WI-000-03-008 Section 3.1.1 which states: "Raceway shall be checked for removal of sharp objects at the time of installing the cable per the cable pulling card, except for conduit, which will be checked for protective bushings, pull boxes as required, obvious damage, adequate support and proper separation criteria."

The term "adequate support" lacks quantitative and qualitative acceptance criteria relative to conduit installation to enable craftsmen or QC inspectors to determine whether it is safe to pull a cable and preserve the integrity of the cable. Paragraph 5.17.18.8 of DECo Specification 3071-22 states "Whenever a part of the support system is not adequate to withstand the tensions incurred during cable-pulling operation, the contractor shall install temporary bracing within the system." Discussions with LKC QC inspection personnel and DECo QA personnel confirmed that the term "adequate support" was never defined.

Paragraph 9.1.1 of DECo Procedure PQA No. 9 states in part, "Instructions, procedures, or drawings prescribing activities affecting quality shall delineate the method and sequence and activity is performed and include appropriate quantitative or qualitative acceptance criteria for determining the activity has been satisfactorily performed."

Contrary to the above, LKC failed to establish qualitative and quantitative acceptance/rejection criteria relative to adequate supports for conduits. The inspectors informed the licensee that failure to establish procedural requirements for performing safety related activities is an item of noncompliance contrary to Criterion V of 10 CFR 50, Appendix B (341/82-14-02(DETP)).

- e. The Detroit Edison Quality Assurance Manual, Section 16.1.5 states, "Reports of nonconforming items shall be made on Deviation Disposition Requests (DDR) forms to Project Engineering for dispositioning in accordance with Configuration Control Procedures."

Furthermore, Paragraph 3.1.1 of LKC QC Procedures No. 4.11.1 states, "Nonconforming Level I and II items shall be identified on a Deviation Disposition Request (DDR) (Attachment 1) in accordance with Daniel Procedure AP-VII-02. Furthermore, Section 3.2.1 of the same procedures states, "Field Surveillance Correction Reports (Attachment 2) shall be used as a means of obtaining information, requesting research on drawings or procedures, documenting inprocess discrepancies that do not warrant a DDR and on storage and warehouse inspections requiring corrective action. (i.e., electrical termination landed in an incorrect location, crimped side not visible on a lug, or loose screws on terminal connections)."

Contrary to the above, on September 9, 1982, during an in-plant inspection (RHR Building), the inspectors found that LKC QC inspectors were using Field Surveillance Correction Reports (FSCR) instead of DDRs to document nonconforming safety related electrical conduits and supports. Example: FSCR Nos. 1946, 2682, 2859, and 2851 identify inadequate spacing of conduit supports and anchor bolts, insufficient number of anchors, and damaged conduit, all of which were in nonconformance with DECo specification and drawings.

Resolutions to DDRs require DECo engineering review and approval; FSCRs do not. Additionally FSCRs bypass report trending and are not listed as quality records by the licensee as are DDRs. The inspectors informed the licensee that the failure to document nonconforming conditions in a DDR was an item of noncompliance contrary to Criterion XV of 10 CFR 50, Appendix B (341/82-14-03(PETP)).

6. The inspectors through discussions with LKC QC personnel determined that information relative to conduit installation instruction was provided in the form of an uncontrolled instruction. Specifically, a QC inspector in a QC memorandum (7-28-8) dated July 19, 1982 inquired as to the acceptability of pulling cable through temporarily supported conduit. The LKC Engineering response on August 13, 1982 stated "Class I conduit may not be supported temporarily for cable installation. Inspection of Class I conduit must be in accordance with Specification 3071-128 STD.ED." The inspectors determined that the above instruction prescribing an activity affecting quality was not controlled and conveyed to QC inspection personnel. The inspectors determined that measures were not established to control and convey the above instructions affecting quality to QC inspectors. The inspectors informed the licensee that the above is an item of noncompliance contrary to Criterion V of 10 CFR 50, Appendix B identified in Paragraph 5.d (341/82-14-2B(DETP)).
7. LKC DDR No. 1861 initiated August 12, 1982 identified that divisional separation of conduit Y0089-2 was not maintained. Specifically, the distance between this conduit and cable tray 1C-037 was measured to be 53" instead of specified 60" at elevation 677'6" location H 17. Review of the records indicates that the conduit Y-008902c has one three conductor/12AWG cable identified as 255239-2c connecting Electric Power Pack No. 1 and HVAC control panel No. 21-P2968. This cable was routed in Class 1E Division II cable trays 2c-091, 2c-097, 2c-096 and 2c-093 prior to entering conduit Y-0089-2. The cable was designated Class 1E due to routing in Class 1E trays. The safety class of the cable was reviewed due to the DDR, and it was determined that the cable was BOP and as such was downgraded to a Class 2 circuit. A "Hold" tag was issued but was not affixed. Procedural requirements of LKC 4.11.4 and Daniel AP-VII-02 were followed in this instance in that a DDR void/revision request form was initiated and signed by cognizant individuals.

No items of noncompliance were identified in the above area.

8. LKC DDR No. 1864, initiated on August 11, 1982 identifies that a completely severed cable was found in cable tray OK-307 at elevation 613'6" location G 20/17-4 also known as Nancy Area. Procedural requirements were followed to void the DDR after determining that it was a length of cable not terminated at either end. However, there was no documented indication that this cable was removed from the cable tray. The inspector informed the licensee that failure to take prompt corrective action to correct a nonconforming condition, in this case removal of an unidentified piece of cable is an item of noncompliance contrary to the requirements of Criterion XVI of 10 CFR 50, Appendix B (341/82-14-04(DETP)).

#### Exit Interview

The inspector and the Senior resident inspector met with the licensee representatives (denoted in the Persons Contacted) at the conclusion of the inspection on September 30, 1982. The inspectors summarized the purpose and findings of the inspection, which were acknowledged by the licensee. The licensee directed Daniel International, the constructor of Fermi II to issue a "Stop Work" to LKC to cease cable pulling in QA Level I raceways until corrective action is implemented.