

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

REGION III

Report No. 50-341/79-24

Docket No. 50-341

License No. CPPR-87

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

Facility Name: Enrico Fermi Nuclear Station, Unit 2

Inspection At: Fermi Site, Monroe, MI

Inspection Conducted: November 27-29, 1979

Inspectors: *RC Knop for*  
F. J. Jablonski

12/18/79

*EJ Gallagher for*  
J. Hughes

12/18/79

Approved By: *RC Knop*  
R. C. Knop, Chief  
Project Section 1

12/18/79

Inspection Summary

Inspection on November 27-29, 1979 (Report No. 50-341/79-24)

Areas Inspected: Follow-up of previously identified noncompliances/unresolved items; 50.55(e) reports; independent inspection; electrical work activities; electrical records. The inspection involved 40 inspector-hours onsite by two NRC inspectors.

Results: Of the five areas inspected, one item of noncompliance was identified. (Infraction - failure to review the design of components, limit switches, to accomodate accident environments. Program areas - Paragraph 5).

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## DETAILS

### Persons Contacted

#### Detroit Edison Company

- \*T. Alessi, QA Director
- \*G. Carter, QA Engineer
- W. Fahrner, Project Manager
- \*E. Hines, Assistant Vice President QA
- \*H. Tauber, Vice President Engineering and Construction
- \*A. Walker, Site Project QA Engineer

#### Daniel International Corporation

- \*M. Albertin, Assistant Program Manager
- \*J. Blixt, QC Manager
- \*J. Bolt, QA Manager
- \*D. Siefert, Project Manager

\*Denotes those attending the exit interview.

### Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (341/79-14-03): Walbridge Aldinger QA program evaluation. Corrective action was examined during a previous inspection, 341/79-22, and determined to be in accordance with DECo's letter to NRC, dated August 24, 1979.

(Closed) Noncompliance (341/79-14-05): Identification of vertical cable trays. The RIII inspector examined the following cable trays for proper identification markers; 2P039, 2P074, 2C070, and 2C071. Corrective action was in accordance with DECo's letter to NRC dated August 24, 1979.

(Open) Unresolved Item (341/79-14-02): Items 1.b, motor operated valves, and 1.c, containment cooling for motors, remain open. Item 1.a, limit switches is being upgraded to a noncompliance as described in paragraph 5 of Program Areas inspected.

Note: Motor operated valves suitable for use inside containment should have class RH motor insulation; all geared limit and torque switch materials should be made of gray or brown melamine. Outside containment, motors have class B insulation and red/black insulator material. All must be qualified for seismic events.

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Licensee Action on Bulletins and Circulars

1. Bulletin 79-15

Deep draft pump deficiencies. The licensee's response to this Bulletin dated August 16, 1979 required further clarification and was so notified by telephone on October 1, 1979. The subsequent response dated October 25, 1979 was deemed adequate. During this inspection, the following points were verified.

- . The core spray and residual heat removed pumps are single stage, not deep draft.
- . Deep draft pumps manufactured by Goulds are installed and provide service water for residual heat removal, emergency equipment and the diesel generator.
- . The pumps were manufactured under a QA program meeting the requirements of ASME Section III; the pump name plate carried the appropriate N stamp.
- . Drawings, sectional assemblies and parts lists were available.
- . Only shop tests have been performed.
- . No preop tests have been performed.\*
- . No maintenance data has been accumulated.\*
- . Pump alignment is controlled within  $\pm 0.003$  inches; process travellers provide a permanent record of shaft alignment.
- \* Results of tests performed during preoperational testing and operations shall be reviewed when applicable. Detailed history of pump maintenance will be reviewed when applicable. The above activities are typically performed by the operations section of IE-RIII.

The inspector has no further questions.

2. Bulletin 79-23

Potential failure of emergency diesel generator (EDG) field exciter transformer. The licensee's response to this bulletin dated October 23, 1979 stated that wye connected exciter power supply transformers were installed thus susceptibility to third harmonic induced circulating currents was not present. Based on interviews with site personnel and the drawings provided to the inspector, the type of transformer and connection installed could not be substantiated. Based on telecon with DECo engineering on December 7, 1979, it was determined that the transformer is ungrounded. This matter is unresolved. (341/79-24-01).

3. Circulars 79-04, 79-05, 79-11, 79-12, 79-13

Motor operated lock nuts, moisture leakage in cable, design/construction interface, diesel generator turbocharger, diesel fire pump contactor. Memoranda on file were reviewed. The circulars had been received, reviewed and corrective action, where necessary, was included. At this time, the inspector has no further questions.

No items of noncompliance were identified.

Other Inspection Areas

10 CFR 50 Section 50.55(e) Reportable Deficiencies

(Closed) 78-XX-07 Defective Kulka terminal blocks supplied by Conax Corporation for drywell electrical penetrations. The RIII inspector reviewed Conax test report IPS-465 Revision A titled, "Design Qualification Report of Terminal Blocks" dated November 8, 1979. The test was conducted to IEEE Standard 317-1972 and Regulatory Guide 1.63, October, 1973. Tests included temperature, pressure, humidity, radiation, and electrical tests. The inspector has no further questions regarding this item.

Note: IEEE Standard 317-72 does not include aging.

10 CFR Part 21 Reportable Items

(Closed) Defective Kulka terminal blocks supplied by Conax Corporation. See the preceding paragraph.

Program Areas Inspected

1. Observation of Electrical Work Activities

- a. The inspector observed completed or partially completed installation of the following motor operated valves located outside the drywell.

MOV-V8-2100

MOV-V8-2153

MOV-V8-2136

MOV-V8-2156

MOV-V8-2154

- b. The inspector observed the following cable terminations for the above motor operated valves:

cable #214402-2C to end

cable #214432-2C to end

cable #214390-1C to end

cable 214262-2C to end

cable #214224-2C to end

The following termination characteristics were in accordance with the current cable pull cards and procedures. Cable supports, color/numeric code, crimped lugs, conductors identified, separation criteria maintained, properly dressed conductors, and tight connections.

- c. The inspector observed the following cable terminations for the emergency diesel generator control panels, located in the RHR building:

cable #25606-1C  
cable #356505-1C  
cable 256576-1C  
cable #256579-1C  
cable #256578-1C  
cable #256582-1C  
cable #220577-1C  
cable #220578-1C  
cable #220584-1C

Characteristics included color/numeric code, crimped lugs, conductors identified, separation criteria maintained, properly dressed conductors, and tight connections. The cable terminations had not been QC inspected.

- d. The inspector observed high potential testing of power cable #2000081P. The testing was done in accordance with procedure CA10.000.016 revision 2 dated April 24, 1979. The test identified no problems with the cable.

No items of noncompliance were identified.

## 2. Observation of Instrumentation Work Activities

- a. The inspector observed partially installed sensing lines (tubing) in accordance with installation drawing 6WI-G11-70301-1. The tubing lines had not been QC inspected. During review of design specifications 3071-31 and 3071-525 for Instrumentation and Control Piping and Tubing, the inspector could not determine the exact acceptance criteria for the installation of safety-related tubing. This matter is unresolved. (341/79-24-02)
- b. The inspector observed installed instrument air system lines, located in the reactor building. Smallbore piping was installed in accordance with the most current drawings and design change notices.

No items of noncompliance were identified.

3. Electrical-Review of Quality Records

- a. The inspector reviewed the following records concerning the cable terminations address in paragraph 1:
- (1) Cable Pull Cards and Cable Pull Checklists (L. K. Comstock Form #37)
  - (2) Ele-ctrical Termination Inspection Checklist (L. K. Comstock Form #36)
- b. The records identified the inspector, the type of observation, the governing documents, the results, the acceptability, and action taken with noted deficiencies. The records were identifiable and retrievable.

No items of noncompliance were identified.

4. Instrumentation - Review of Quality Records

- a. The inspector reviewed calibration and relay setting records to confirm that proper calibration and relay settings were made as specified, including use of procedures and test equipment. Records were identifiable and retrievable.
- b. The inspector reviewed control and power metering cables EF2 C&IE continuity and insulation resistance test form TF.000.017.01 revision 1. The test form included the following: test procedure no., cable no., location, reference drawings, test equipment number and recalibration date, signatures for verification sign off during testing, and signature of test engineer's review for acceptance. Records were identifiable and retrievable.

No items of noncompliance were identified.

5. Other Areas

Namco type SL-CB2W limit switches for the Main Steam Isolation Valves (MSIV) were not environmentally qualified for service inside the containment. The inspector was informed by the licensee that the limit switches were for position indication only. FSAR Section 2.2.1.1.3. states in part, "Position switches mounted on the eight MSIV's signal closure to the RPS logics." This item is considered to be in noncompliance with the requirements of 10 CFR 50, Appendix B, Criterion II as described in Appendix A of this report. (341/79-24-03)

6. Pump process Traveler

Travellers for the RHR and CS pumps were reviewed. Several potential problems exist as follows:

- . Who by title has responsibility for checking the technical content.
- . Why isn't the instruction book number included.
- . Why aren't precautions included.
- . Why isn't the torque wrench control number included.
- . Why is seismic marked N/A.
- . Why isn't criteria listed for installation of the hydrostatic bearing chamber gasket.
- . Why aren't criteria and precautions listed for dimensional checks for the thrust disc.
- . Why isn't the instruction book and/or criteria listed for installation of the mechanical seal.
- . Why isn't a procedure or criteria listed for final acceptance inspection.
- . Why aren't changes such as DCR's, DCN's, FMR's, FDDR;s, FDI's, etc. verified to be completed, incorporated, etc.

Note: The pumps have not been installed. This matter is unresolved.  
(341/79-24-04)

#### 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 under Bulletins, Paragraph 2, and Program Areas, Paragraphs 2.a, and 6.

#### Exit Interview

The inspectors met with site staff representatives (denoted in the Persons Contacted paragraph) at the conclusion of the inspection. The inspectors summarized the scope and findings of the inspection. The licensee acknowledged the findings.