

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/85035(DRS)

Docket No. 50-341

License No. NPF-33

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48224

Facility Name: Enrico Fermi Nuclear Power Plant, Unit 2

Inspection At: Enrico Fermi 2 Site, Monroe, MI

Inspection Conducted: June 17-21, 1985

Inspectors: *Z. Falevits*
Z. Falevits

7/12/85
Date

R. Mandez
R. Mandez

7/12/85
Date

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

7/12/85
Date

Inspection Summary

Inspection on June 17-21, 1985 (Report No. 341/85035(DRS))

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings, review of licensee as-built program ("B" software items), and independent inspection. The inspection involved a total of 89 inspector-hours onsite by two NRC inspectors including 27 inspector-hours onsite during off shifts.

Results: Of the areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

W. H. Jens, Vice President, Nuclear Operations
F. Agosti, Manager, Nuclear Operations
R. S. Lenart, Superintendent Nuclear Operations
W. F. Colbert, Director Nuclear Engineering
G. M. Trahey, Director N.Q.A.
K. Earle, Supervisor Licensing
B. E. Wickman, Supervisor M&M.Q.A.
L. Bregni, Engineer Licensing
S. P. Zoma, Principal Resident Engineer
C. J. Morrison, I&C Engineer
G. W. Richards, I&C Engineer
L. B. Collins, System Engineer
L. F. Wooden, System Engineer

Those identified above attended the exit meeting on June 21, 1985. In addition to the above persons other licensee and contractor personnel were contacted during this inspection.

2. Licensee Action On Previous Inspection Items

- a. (Closed) Unresolved Item (341/85028-01(DRS)); During a recent inspection the inspector noted that 1E cables utilized in the control circuits for the primary containment isolation valves E11-F079A&B and E11-F080A&B, located in the RHR sample lines, were downgraded to non-1E. General Electric Master Parts List (MPL) classified these valves as "A" (Active) whose active performance is important to safety. Subsequently, the licensee in letter NE-85-0901 dated June 24, 1985, noted operational considerations, as well as the design basis characteristics of the valves control circuits as the basis for downgrading the control cables to non-1E status. The system is designed to deenergize-to-operate. The two normally closed primary containment isolation valves are connected in series for each sample line, and are fail-safe to close on loss of air or electrical power, (ASME class II). The control cables are routed in separate division cable tray systems, minimizing the possibility of single failure causing inadvertent opening of a sample line. Based on the above, this item is resolved.
- b. (Closed) Unresolved Item (341/85028-02(DRS)); This item addressed an electrical separation requirement violation in the internal wiring to the redundant divisional trip coils of the Anticipated Transient Without Scram (ATWS) mitigation system of the Recirculation Pump Trip (RPT) circuitry. One of the internal wiring divisions was required to be installed in flexible conduit all the way to the final element; e.g., the field breaker tripping coil, since it is

the final device whose failure can compromise the trip function. In subsequent discussions between Region III, NRR, and members of the licensee's staff, the licensee has committed to install the required flexible conduit and will submit a scheduled date for installation in October 1985. The NRC plans to conduct inspections on this issue in the future when the corrective action is complete.

- c. (Open) Unresolved Item (341/85009-01(DRS)); This item relates to the various cases identified where Balance Of Plant (BOP) cables are electrically interfaced with divisional cables in safety and non-safety related circuits. The licensee has subsequently performed a comprehensive review and analysis (Reference DECO letter VP-85-0132, dated June 10, 1985) of approximately 550 schematic diagrams where 1E and non-1E circuits interface without the intrinsic separation provided by isolation devices. As a result of this review, a total of 656 cases where 1E and non-1E circuits interfacing electrically were identified. These cases were categorized into 13 representative samples. The analysis addressed the impact of electrical faults in the non 1E circuits on the function of the 1E circuits for each of the 13 samples. This analysis was transmitted by the licensee to NRR for review. Subsequently on June 20, 1985, during a telecommunication between Region III, NRR and the licensee's staff, it was concluded that the licensee will be required to take appropriate corrective action to resolve NRR comments regarding representative samples numbers 2, 3, 6, 7, 8, 11, 12 and 13. Representative samples numbers 1, 4, 5, 9 and 10 were found to be acceptable as analyzed by the licensee (Reference DECO letter NE-85-0900). Licensee corrective action will be reviewed in future inspections, this item remains open.

3. Review of Licensee As-Built Program

- a. During this inspection the inspectors expanded the review of the "B" software items which are defined as items which require revisions to the design drawings to make them conform to the actual field hardware configuration. The following as-built walkdown packages were reviewed:
- (1) Diesel Generator No. 11 panels R30-P311 and R30-S008.
 - (2) RHR Mechanical Draft Cooling Tower Fan "B" E1156C001D.
 - (3) Reactor Protection panels H11-P609 and H11-P611.
 - (4) 480V switchgear 72ED (RHR complex R14S039).
 - (5) Process Radiation Panel D11-P297.
 - (6) Reactor Core Isolation Cooling Panel E51-C002.
 - (7) Diesel Generator Panel R30-P321.

(8) Standby Gas Treatment Panels T46-P401A and H21-P295A.

(9) Process Radiation Panel D11-P290.

(10) Primary Containment Monitoring System Panel H11-P914.

The review consisted of examining the following related documents: Deviation Event Reports (DER), As Built Notices (ABN), Engineering Design Packages (EDP), CR7 termination cards, walkdown prints, and test reports. In addition, the inspectors conducted field inspections of selected installed components and panels to ascertain the effectiveness of the as-built program in identifying and correcting nonconforming conditions.

The inspectors reviewed the following "B" software items including their associated corrective action documents:

Device No.	DER No.	Item No.	Corrective Action Document
R30-P311	85-190A	6	ABN-2410-1
R30-P311	85-190A	7	ABN-2410-1
R30-P311	85-190A	8	ABN-2410-1
R30-P311	85-190A	9	ABN-2410-1
R30-P311	85-190A	12	ABN-2410-1
R30-P311	85-190A	13	ABN-2410-1
R30-S008	85-190A	5	ABN-2742-1
R30-S008	85-190A	13	ABN-2739-1
R30-S008	85-190A	18	ABN-2739-1
R30-S008	85-190A	30	ABN-2741-1
R30-S008	85-190A	31	ABN-2741-1
R30-S008	85-190A	36	ABN-2741-1
E1156C001D	85-402	1	ABN-2395-1
H11-P609	85-130	17	ABN-2551-1
H11-P609	85-130	20	ABN-2551-1
H11-P611	85-119	3A,3	ABN-2747-1
H11-P611	85-119	3C	ABN-2747-1
R14-S039	85-032B	1	ABE-1446A
R14-S039	85-032B	8	ABE-1446A
R14-S039	85-032B	10	ABE-1446A
D11-P297	85-349	2	ABN-2453-1
D11-P297	85-349	3	ABN-2453-1
D11-P297	85-349	7	ABN-2453-1
D11-P290	85-336	1	ABN-2470-1
D11-P290	85-336	1	ABN-2453-1
D11-P290	85-336	2	ABN-2453-1
D11-P290	85-336	3	ABN-2453-1
D11-P290	85-336	7	ABN-2453-1
E51-C002	85-322	1	ABN-2610-1
E51-C002	85-322	3	ABN-2610-1
E51-C002	85-322	5A	ABN-2510-1

Device No.	DER No.	Item No.	Corrective Action Document
E51-C002	85-322	5B	ABN-2510-1
H11-P014	85-378A	1	ABN-2528-1
H11-P014	85-378A	12	ABN-2528-1
H11-P014	85-378A	18	ABN-2528-1
H11-P014	85-378A	25	ABN-2528-1
H11-P014	85-378A	30	ABN-2528-1
H11-P014	85-378A	31	ABN-2528-1
H11-P014	85-378A	33	ABN-2528-1
H21-P295A	85-249	7A	ABN-2757-1
H21-P295A	85-249	7B	ABN-2757-1
H21-P295A	85-249	7C	ABN-2757-1
H21-P295A	85-249	11.1	ABN-2756-1
H21-P295A	85-249	11.2	ABN-2756-1
H21-P295A	85-249	11.4	ABN-2756-1
H21-P295A	85-249	11.5	ABN-2756-1
H21-P295A	85-249	11.6	ABN-2756-1
T46-P401A	85-163	2	ABN-2618-1
T46-P401A	85-163	3	ABN-2618-1
R30-P321	85-181A	5	ABN-2414-1
R30-P321	85-181A	7	ABN-2414-1
R30-P321	85-181A	8	ABN-2414-1
R30-P321	85-181A	10	ABN-2414-1
R30-P321	85-181A	12	ABN-2414-1
R30-P321	85-181A	15	ABN-2414-1
R30-P321	85-181A	16	ABN-2414-1
R30-P321	85-181A	18	ABN-2414-1
R30-P321	85-181A	19	ABN-2414-1
R30-P321	85-181A	20	ABN-2414-1

The inspectors also examined various design drawings for ABN posting requirements and their incorporation in the drawings.

No violations or deviations were identified in the "B" software items program.

- b. During the field inspection of installed components the following deficiencies were noted by the inspector:

(1) Diesel Generator panel R30-P311

- (a) Licensee walkdown print 6I721N-2712-40 had not been completely yellow lined which indicated that not all devices on panel requiring inspection have been inspected by the licensee.
- (b) Licensee walkdown print 6I721N-2712-40 identified two incorrect wire designations on termination points B29-3 and B29-4. This was erroneously omitted from DER-85-190.

- (c) Two loose strands of wire, in very close proximity to the adjacent termination points, were identified on TB-B28-03 and TB-B16-7.
- (d) The cable designated as 228807-1C on drawing 6I721N-2712-40 was observed in field as 228807X-1C.

The inspector informed the licensee that an additional, more comprehensive walkdown will be required on panel R30-P311 since it has not been completed during the walkdown.

- (2) Reactor Protection panels H11-P609 and H11-P611. Note: Scram contactors K14A thru H, and K15A thru D were not in the licensee's as built scope of inspection due to the fact that they are enclosed inside metal covered boxes within panels. The inspector examined above contactors and noted the following concerns:

- (a) Compression type terminals T1, T2 and T3 contained three conductors on each compression lug.
- (b) Even though all 14 scram contractors are identical in their construction, connections to termination points T1, T2 and T3 were observed to be nonuniform.
- (c) Contactor K15D point T3 did not contain the plate placed against the terminated lugs as required.
- (d) Point 10 of contactor K14F contained two conductors while design drawing indicated one conductor. Point 10 of contactor K14H contained one conductor while design drawing indicated two conductors. Further review disclosed that C&IO test No. CCTH11P609-004 which was performed in September 1982, implemented FMR-2538 revision A. During this test the engineer modified the configuration of the installed wiring causing the design drawings to be in conflict with the installed wiring. This modification was documented on the test report, a design change however, was not initiated to revise the design drawings. C&IO test form TR.000063.01 revision 1, dated October 1981, requires that: "Wiring, connection and schematic diagrams agree." Signature of test engineer indicated this was accomplished, although, as installed field connections were found to be in conflict with the applicable design drawing.
- (e) Three control switches on RPS panel H11-P609 were observed in the field to contain more stages than the design drawing indicated.

Items b.(1) and b.(2) are considered open pending further review and evaluation of licensee corrective action and NRC review. (341/85035-01(DRS)).

c. The inspectors also discussed other "as-built" issues with the licensee who indicated that they would followup or resolve the following issues:

- (1) Field conductors terminated at a pressure type connection (Weidmuller type block) were observed to be either not fully inserted or the insulation of the conductors were stripped too far back. Four field conductors were observed with bare conductors extending a 1/4-1/2 inch beyond the Weidmuller termination block inside a junction box associated with system No. T46-P401A (Standby Gas Treatment System). Licensee specifications and instructions require that the insulation be stripped back so that approximately a 1/16 of an inch is beyond the terminal block. The licensee is continuing to review this issue.
- (2) A connection point inside a control panel associated with system H21-P295N was observed to be connected with three termination lugs. The PN21 disposition for this item required that the termination point be reworked to comply with the licensee's specification, 2 lugs per termination. The licensee agreed to investigate this matter further.
- (3) Discrepancies were noted in the designation of normally open/closed air operated limit switch contacts between schematics and their associated wiring diagrams. Several instances were noted where a schematic diagram would show a contact in the normally closed position while the contact development in the wiring diagram show this contact in the normally open position or vice-versa. The inspector discussed this issue and the licensee stated that in the future, the air operated valve limit switch contacts should be shown on the schemes based on the valve closed status. The licensee stated it would take about a year to consolidate the question of the limit switch representation on their drawings.

The inspection disclosed that these actions are part of the licensee's ongoing "As-Built" consolidation program and actions taken and those planned to be taken were found acceptable to the NRC.

4. Review of Licensee Commitment to Verify Tagging of Instrument Lines

During a previous inspection followup on Unresolved Item 84068-01, sensing lines appeared to violate the separation requirements for redundant sensing lines. The licensee determined based on their review, no evidence of a separation or routing problem existed. The licensee did determine that the observed deficiencies involved incorrect tagging of the instrument lines rather than a divisional or routing problem. Surveillances were performed to ascertain the extent of the problem. Twenty-six sensing lines were walked down from their originating point in the drywell to the instrument transmitter connections by the site

QA group. The results of the walkdown identified six instrument sensing lines that had the incorrect divisional designations in addition to incorrect information. On March 15, 1985, the licensee issued memo No. EF2-102, 520 that committed to verify correct tagging of the 118 instrument sensing lines in the drywell. Documented information was available regarding the results of the walkdown initiated by the licensee's letter of March 15, 1985. The identification (tagging) on instrument sensing lines, that originate in the drywell, were changed as a result of a walkdown initiated by the licensee's letter of March 15, 1985. Documentation regarding the walkdown results was not available during this inspection. On May 10, 1985, the licensee issued Engineering Change Notice ECR-3234-1 which developed appropriate tagging criteria to correct inconsistencies on the instrument tags. During this inspection period, the inspectors accompanied licensee personnel to verify the information on the sensing line. The tagging of ten instrument lines which penetrate the drywell and connect to instruments outside the drywell were checked against the applicable drawing, no problems or deficiencies were identified.

No violations or deviations were identified.

5. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in Paragraph 3.b.

6. Exit Interview

The inspectors met with the licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on June 21, 1985. The inspectors summarized the scope and findings of the inspection, which were acknowledged by the licensee. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary.