

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/88018(DRS)

Docket No. 50-341

License No. NPF-43

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

Facility Name: Fermi 2

Inspection At: Fermi Site, Monroe, Michigan

Inspection Conducted: May 16-20 and June 6-10, 1988

Inspector: *D. S. Butler*  
D. S. Butler

*6/24/88*  
Date

Approved By: *R. N. Gardner*  
R. N. Gardner, Chief  
Plant Systems Section

*6/24/88*  
Date

Inspection Summary

Inspection on May 16-20 and June 6-10, 1988 (Report No. 50-341/88018(DRS))

Areas Inspected: Special, unannounced safety inspection of licensee actions on previously identified items, MSIV open/close manual relay logic, surveillance program review, Appendix R - high impedance fault, DER review, use - history records, and engineering. The inspection was performed in accordance with IE Procedures 92702, 92701, and 41400.

Results: Of the areas inspected, two violations were identified (failure to control the review and approval of maintenance instructions as required by TS 5.8.1 - Paragraph 2.q, and failure to control use - history documents - Paragraph 7).

## DETAILS

### 1. Persons Contacted

#### Detroit Edison Company

S. G. Catola, Vice President, Nuclear Engineering and Services  
W. S. Orser, Vice President, Nuclear Operations  
D. R. Gipson, Plant Manager  
R. S. Lenart, General Director, Nuclear Engineering  
R. B. Stafford, Director, Nuclear Quality Assurance and Plant Safety  
R. L. Matthews, General Supervisor, I&C  
L. S. Goodman, Licensing Supervisor  
P. Anthony, Compliance Engineer

#### USNRC

W. G. Rodgers, Senior Resident Inspector

### 2. Licensee Action on Previous Inspection Findings

- a. (Closed) Violation (341/87044-01): Failure of the licensee to adequately logic test portions of the RCIC system isolation, HPCI system isolation, and RCIC system actuation logics. The inspector determined that the licensee had adequately modified the applicable procedures and tested the logics in accordance with Technical Specification (TS) 4.3.2.2, TS 4.3.5.2, and TS Definition 1.13.
- b. (Closed) Violation (341/87044-03): Failure of the licensee to adequately response time test the HPCI drywell slave actuation relays E41-K4 and K5. The inspector determined that the licensee had adequately modified the applicable procedures and had response time tested the relays in accordance with TS 4.3.3.3 and TS Definition 1.11.
- c. (Closed) Violation (341/87044-07): Failure of the licensee to adequately verify the remote shutdown panel RCIC transfer switch contacts for Valves E51-F045 and F059. The inspector determined that the licensee had adequately modified the applicable procedures and tested the transfer switch contacts in accordance with TS 4.3.7.4.2. In addition, the inspector had specified that in response to this item that the licensee review all overlapping surveillance procedures performed by different plant departments to ensure proper test overlap was maintained. The licensee has just completed a major rewrite of their surveillance test procedures. Among the specific items to be reviewed was the maintenance of proper test overlap. The inspector determined the licensee was adequately addressing this item.

- d. (Closed) Violation (341/86028-02A): Failure to follow the instructions provided in Procedure 12.000.025, "Temporary Modification Procedure," when filling out a temporary modification tag. Procedure 12.000.25 contains adequate instructions on how to properly fill out and install the tags. The licensee has retrained its employees in the proper use of Procedure 12.000.025.

The inspector verified that the following temporary modification packages were being maintained in the Nuclear Shift Supervisor (NSS) office, had received a 50.59 review (if applicable), had received temporary modification renewal reviews, and were properly filled out:

- ° 88-007 Hookup Strip Chart Recorder to Monitor SRFPT and NRFPT Suction Pressure
- ° 88-009 Replace D/P Transmitter N62-N530
- ° 88-039 EDG 11 Water Jacket Relief Valve Replacement
- ° 88-012 Remove Seal-In Open Feature to Extraction Steam Valve 5SFWHTR
- ° 87-013 Remove Seal-In Open Feature to Extraction Steam Valve 5NFWHTR
- ° 86-0164 Replace Lambda 5 Volt Power Supplies

In all of the above, the temporary modifications were being adequately implemented and controlled by Procedure 12.000.025.

The inspector noted that there were 17 temporary modifications that were still in use since installation in 1985. The inspector recommended that the licensee review these not so temporary modifications for removal or for permanent plant installation and develop length-of-installation criteria to ensure the timely disposition of temporary modifications.

- e. (Closed) Violation (341/87026-07): Failure to perform the MSIVLCS pressure control instrumentation channel check as required by TS 4.6.1.4.d.1. The licensee removed the MSIVLCS pressure indicator for repair. A digital voltmeter (DVM) was temporarily installed to provide the necessary instrument readings. Surveillance Procedure 24.000.02, "Shiftly, Daily, and Weekly Channel," was not changed to reflect the addition of the DVM and no conversion information was provided to convert the electrical signal to pressure. As a result, the surveillance was not performed.

The licensee has adequately changed Procedure 12.000.025 by adding requirements for the responsible individual to revise critical documents and to ensure TS compliance when implementing a temporary modification. The licensee's corrective actions were considered acceptable.

- f. (Closed) Open Item (341/87044-02): Change the 'required limit' value for Trip Units N691 A, B, C, and D (Rx Water Level 1) in Surveillance Procedures 44.030.251, 252, 253, and 254. The licensee has corrected these procedures and the new 'required limit' value was acceptable.
- g. (Closed) Open Item (341/87044-04): Change the test resistor connection point in Surveillance Procedure 44.030.309. Procedure 44.030.309 has been rewritten and no longer uses the test resistor. The new method for response time testing of the ECCS - Drywell Pressure - RHR, CSS, and HPCI activation channels was acceptable.
- h. (Closed) Open Item (341/87044-05): Develop acceptance criteria and trend leaky control rod drive (CRD) accumulator check valves. The licensee added the following criteria to Surveillance Procedure 44.010.201: Initiate a Work Request for all accumulators that alarmed in the first two minutes. The trending of leaky accumulator valves was being performed in conjunction with the Nuclear Plant Reliability Data System. The licensee's corrective actions were considered acceptable.
- i. (Closed) Open Item (341/87044-06): Place CRD pressure gauge PI 131 in a calibration program. The licensee added the calibration of PI 131 to Surveillance Procedure 44.010.201. The licensee's corrective action was considered acceptable.
- j. (Closed) Open Item (341/87044-10): Nuclear Engineering (NE) to develop a written policy that would stipulate that I&C design calculations employ a conservative rounding of numbers when determining TS acceptance criteria, correct RPS Design Calculation 4522, and revise any surveillance procedure affected by Calculation 4522. The licensee revised Calculation 4522 and Surveillance Procedures 44.010.001, .002, .005, .006, .007, and .008. Nuclear Engineering committed to revise NE Procedure 2.5.2, "Design Calculations," by July 31, 1988 with instructions on when conservative rounding of numbers is applicable. The licensee's corrective actions were considered acceptable.
- k. (Closed) Open Item (341/87044-11): Should the RCIC test line throttling valve (E51-F022) be closed by a dedicated seal-in-to-close contact. The RCIC system can be actuated from the remote shutdown panel. This is accomplished by momentarily depressing the RCIC initiation switch which simulates a reactor low level signal. The E51-F022 valve (if E51-F013 was closed) will start to close and stop unless the initiation switch was held. The valve will start closing from other contacts after a five-second delay.

The licensee determined the five-second delay would not affect the design basis for the RCIC system. This was based on the following:

- If the initiating signal was removed, there was no need for vessel injection.

- Five-second delay is a small part of the valves nominal one minute closure time.
- Initiation of RCIC while in the Remote Shutdown Panel mode of operation was outside the normal design basis for RCIC.
- Once an automatic initiation was received, the RCIC system would continue to realign.

The inspector discussed this item with DECo Nuclear Engineering and concurs with their determination that the five-second delay has no safety significance.

- l. (Closed) Open Item (341/87044-12): What is the failure mechanism of HPCI auxiliary oil pump pressure switch (PS-E41-NA01). The pressure switch starts the HPCI auxiliary oil pump on low system bearing and hydraulic pressure. The auxiliary pump must operate for the HPCI system to start. The inspector was concerned that the single failure of this pressure switch could prevent HPCI initiation. The licensee concurred that this may in fact happen. However, the licensee informed the inspector that the plant was designed for a single failure of the HPCI system in that the ADS was the redundant system for HPCI. The inspector has no further concerns in this area.
- m. (Closed) Open Item (341/87044-13): Track miscellaneous drawing corrections. The licensee has issued ABN 9175-1 to correct these drawings. The licensee's corrective actions were considered acceptable.
- n. (Closed) Open Item (341/86035-03): Revise Surveillance Procedure 44.030.251 and 253 to provide consistent steps for calibrating Rosemount trip units. These procedures were completely rewritten during the surveillance rewrite program. The inspector determined the revised procedure steps for calibrating the trip units were written in the proper sequence, selected the correct trip unit for calibration, and contained consistent steps.
- o. (Closed) Open Item (341/85026-05): Develop a leakage reduction program to meet the requirements of TS 6.8.5.a. The inspector reviewed Procedure 41.000.19, "Leakage Reduction Program," in accordance with NUREG-0578 and TS 6.8.5.a. The licensee has established, implemented, and was maintaining an adequate program to reduce leakage from primary coolant sources located outside of containment.
- p. (Closed) Open Item (341/85039-05): Lack of formal EQ training for maintenance personnel. The licensee has established formal EQ training in the Maintenance Training Program. The inspector reviewed Training Lesson Guides 01-40-00-00, 01-53-00-00, and 01-53-05-01. The guides were providing adequate detail on EQ requirements; the EQ program; and on how to identify EQ components. Approximately 90% of the I&C, electricians, and mechanics have completed this training to date. The licensee's corrective actions were considered acceptable.

q. (Closed) Unresolved Item (341/87028-07): Several procedures (Maintenance Instructions) for the calibration of individual pieces of measuring and test equipment (MTE) had not been periodically reviewed as required by the licensee's procedures. The inspector reviewed the licensee's review, approval, and control of instrument and control, electrical, mechanical, and MTE Maintenance Instructions (MI) since the issuance of the Fermi 2 Operating License No. NPF-43 on July 15, 1985. Documents used in the review were the following:

- TS 6.8.1.a      The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1977.
- TS 6.8.3      Each plant procedure required by Specification 6.8.1, other than administrative procedures, and changes thereto, shall be reviewed in accordance with 6.5.3, and approved by the Plant Manager prior to implementation and shall be reviewed periodically thereafter as set forth in administrative procedures. The Plant Manager may delegate approval authority in writing for specific types of procedures to the Superintendent-Operations, the Superintendent-Maintenance and Modification, the Superintendent-Services, or the Radiation Protection-Chemical Engineer.
- N18.7 - 1976      Section 5.2.15 (Review, Approval, and Administrative Controls and Control of Procedures) Quality Assurance      Section 5.3 (Preparation of Instructions for the Operational and Procedures) Phase of Nuclear      Section 5.3.5 (Maintenance Procedures) Power Plants      Section 5.3.7 (Calibration and Test Procedures)

The licensee had maintained a large number of MIs. They were used to calibrate safety-related equipment, non safety-related equipment and MTE. The inspector reviewed these instructions to ensure they were of a type appropriate to fulfill TS 6.8.1 and meet applicable sections of N18.7 - 1976. The licensee has taken compensatory action with the approval (3/30/87) of Procedure POM 12.000.115T, "Maintenance Instructions," in that Procedure POM 12.000.007, "Nuclear Production Procedures and Order," shall be used to process revisions to maintenance instructions. POM 12.000.007 (Revision 26) committed to the following: "Existing instructions containing requirements shall be converted into procedures by January 1, 1989. All other instructions shall be cancelled by that date."

Maintenance instructions are discussed in N18.7, Section 5.3.5. This section states, in part, that in some cases, these instructions constitute an adequate procedure and as such shall receive the same level of review and approval as operating procedures. Further, in Section 5.3.7, N18.7 states, in part, that procedures shall be provided for periodic calibration and testing of safety-related instrumentation and control systems and shall be provided for periodic calibration of measuring and test equipment used in activities affecting the quality of these systems. Therefore, MIs used to perform any of the above activities fall under the controls described in N18.7, Section 5.2.15, and are to be a procedure of the appropriate type as described in RG 1.33, Appendix A, Section 8. The approval authority for procedures described in TS 6.8.1.a is provided in TS 6.8.3. The inspector was not able to determine the actual MI approval authority for each maintenance discipline to ascertain whether it was according to TS 6.8.3. There were several revisions and superseding of procedures that controlled MIs prior to 3/30/87. Under Section 4 of MI-M049, Revision 4, "Maintenance Instructions and Designated POM Procedures," the Maintenance Engineer or his designee, was tasked with ensuring procedures/instructions covered by MI-M049 received proper approval. The use of the Maintenance Engineer or his designee does not appear to meet TS 6.8.3, including the period prior to TS Amendment 11 to TS 6.8.3. The lead technical writer was responsible for assigning reviews of MIs as they came due. The inspector determined that there were procedures in all the maintenance disciplines that could be used for activities affecting quality that had not been reviewed within the two year period required by Section 5.2.15 of N18.7.

The licensee is committed in TS 6.8.1 to Appendix A of RG 1.33 (February 1978, Revision 2) which endorses N18.7 - 1976. Failure of the licensee to delineate MI approval authority (prior to 3/30/87) in accordance with TS 6.8.3 and to keep current the two year review requirement for approved maintenance instructions that prescribe activities affecting quality and activities affecting safety-related structures, systems, or components is considered a violation (341/88018-01).

The licensee has approved (6/3/88) Revision 1 of Procedure FMD PR 1, "Procedures, Manuals, and Orders." Section 4.9.3 of this procedure clearly states that the approval authority for nuclear production procedures, manuals, and orders, and revisions thereto, shall be approved by the Plant Manager or delegated as allowed by the Technical Specifications. The new revision of Section 4.9.3 is in full compliance with TS 6.8.3.

- r. (Closed) Unresolved Item (341/86011-13): Generic calibration procedures were too vague in detailing instructions on how to remove and return equipment to service. The inspector reviewed Procedure 46.000.02, "Flow and Level Sensing Instrument," and MI-IC-0201, "Rosemount Alphaline Pressure Transmitter Models 1151AP, 1151GP, 1152 (All Models) and 1153 (All Models)." These procedures

referenced Procedure 41.000.09 "Process Instrument Removal from and Return to Service." Procedure 41.000.09 did contain adequate steps on how to remove and restore pressure, flow, and level sensing instruments from service. The licensee has completely rewritten their surveillance procedures and is in the process of rewriting and converting generic/specific plant procedures into nuclear production procedures. The inspector determined that the licensee's actions were adequate.

No other violations or deviations were identified and one recommendation was discussed in Paragraph 2.d.

### 3. MSIV Inadvertent Closure and Opening

#### a. Background

The licensee was required by TS 4.8.4.4.a to perform a six month functional test of the RPS breakers (Electrical Protection Assemblies). A transfer from the normal motor-generator RPS power supply to its alternate supply was required for testing the breakers.

On August 4, 1987, with the reactor in cold shutdown, a closure of the four inboard MSIVs occurred during a manual transfer of the Division II RPS to its alternate power supply. The Division I RPS had previously been transferred to its alternate power supply, and the affected system logics had been reset per system operating Procedure POM 23.316, "RPS 120V AC AND RPS MG SETS." The inboard MSIVs subsequently reopened when procedure steps in FOM 23.316 instructed the Reactor Operator (RO) to reset the MSIV isolation logic following the transfer of the Division II RPS. The four outboard MSIVs remained open during the above mentioned power supply transfers.

The licensee has modified Procedure POM 23.316 to instruct the operator to press the individual MSIV "open" push buttons (if the MSIVs are open) following the reset of the MSIV logic. The outboard MSIVs would have responded in the same manner as the inboards, if the power supply transfer was reversed (Division II RPS transferred first).

#### b. MSIV Logic Hardware Changes

The licensee has issued Engineering Design Package (EDP) 7838 to replace the existing manual open/close relays with latching, electric reset relays. The inspector reviewed the design changes that were to be implemented by Field Deviation Disposition Request (FDDR) KH1-1215. The design will prevent inadvertent closure and opening of either set of MSIVs during power supply transfers. This reinforces the procedure changes previously made by the licensee. The addition of the latching relays will not affect the design basis for the MSIVs. The valves will close, stay closed, and require operator action to reopen following an isolation signal.

This meets the requirements of NUREG-0737 II.E.4.2 ("The design of control systems for automatic valves is such that resetting the isolation signal will not result in the automatic reopening of containment isolation valves.")

The licensee committed to implement EDP 7838 during their first refueling outage. The inspector considers the licensee's actions to be adequate and has no further concerns on this item. The licensee's commitment should also be satisfactory to address the inspectors concerns that were identified in the Operational Safety Team Inspection (OSTI 50-31/87030).

No violations or deviations were identified.

A. Surveillance Program Review

a. Introduction

The licensee was in the process of improving their surveillance program. They have completed the rewriting and reformatting of over 400 surveillance procedures.

Technical Specifications were being reviewed (as the result of DER-87-286 and corrective actions as stated in LER 87-019) to ensure the following: each requirement was covered by an approved procedure; the performance interval was correctly stated in the procedures and in the Surveillance Scheduling and Tracking (SST) program; plant operating conditions, as described in Technical Specifications were correctly identified in the procedures and in the SST program; and the procedures contained steps which implemented the required Technical Specification.

Surveillance procedures were being rewritten by personnel who had plant experience (i.e., senior Instrument and Control technicians). Human factor elements were being included in the review to remove elements that were common knowledge and to use standard notation (e.g., light "ON"). Parallel efforts were also taking place in the Nuclear Engineering Department to control and provide setpoint bases.

The procedures were also including a section or attachment to perform independent verifications, planning and preparation prior to performing the procedure, and an impact statement to alert the operator to expected alarms and control actions.

b. Surveillance Procedures

The inspector reviewed the surveillance procedures to ensure they contained applicable information as described in N18.7 - 1976, Section 5.3 (Preparation of Instructions and Procedures). The licensee developed a writing guide to assist in procedure preparation.

The procedures were well written and the procedure steps were to be performed in a logical sequence. Appropriate quantitative or qualitative acceptance criteria was clearly defined. Independent verification of jumpers/lifted leads was provided within the body of the procedure or by a separate verification section. Instrument valve positions were independently verified following a calibration in a separate section. The procedures also contained enclosures which detailed instrument valve location and included an instrument loop diagram. The instrument loop diagram included instrument numbers, panel and terminal numbers, wiring detail, relay logic, relay contact actuation descriptions, and applicable drawings. Each procedure contained a Planning and Preparation, and Impact Statement. The inspector determined that the surveillance procedures contained sufficient detail for a qualified individual to perform the required function without direct supervision.

The past surveillance program relied on separate channel functional and channel calibration procedures. It was up to the surveillance scheduler to ensure a channel functional procedure was scheduled with a calibration procedure. The inspector had recommended to the licensee in Inspection Report No. 341/87044, Section 2.e.(1) that the licensee should strengthen the surveillance scheduling program to assure surveillances were not missed. The new surveillance calibration procedure now include a separate section, "Functional Test and Return to Normal." This has eliminated the possibility of not performing a functional test following a channel calibration.

The inspector reviewed the procedure for TS compliance. In all instances, the procedures reflected the correct "trip value"; and the "required limit value" was set conservative to the TS Allowable Value. The "As Found" and "As Left" data was clearly defined in the procedures. Data found outside the "As Found" tolerance was reset within the tighter "As Left" tolerance and a deviation report was initiated.

The licensee has revised their testing methodology regarding the way they perform logic functional tests. In the past, certain logic combinations were set up by lifting leads. The licensee has designed test boxes that are connected to trip units that provide input to protection logics. Test switches are used to develop the required logic conditions. This methodology has decreased the number of jumpers/lifted leads by approximately 90% and will assure adequate overlap in testing.

c. Surveillance Scheduling

The inspector reviewed the scheduling for ECCS low water Level 2 and high drywell pressure HPCI actuation channel response time test (RTT), and the HPCI system actuation RTT from Level 2 and ECCS high drywell trip functions. The licensee RTT procedures provided for adequate overlap in testing such that the entire ECCS system response time was determined.

The scheduling periodicity of ECCS RTTs is defined by TS 4.3.3.3; which states, "The ECCS RESPONSE TIME of each ECCS trip function shown in Table 3.3.3-3 shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per trip system such that all channels are tested at least once every N \*times 18 months where N is the total number of redundant channels in a specific ECCS trip system."

HPCI actuation was provided by two trip systems. The above two trip functions each contain two channels per trip system, such that, N = 2. The licensee uses 72 weeks as the basis for refueling periodicity (18 months). The scheduling periodicity becomes 144 weeks for each channel and 72 weeks for the system actuation RTT. The following is the HPCI RTT schedule for ECCS reactor water level channels, drywell channels, and level and drywell system actuation:

<u>Event</u>	<u>Previous Completion</u>	<u>Devised Completion</u>	<u>Channel/System</u>
0675	4/18/88	10/30/90	Channel A Lvl 2
0676	4/17/88	10/30/90	Channel B Lvl 2
0677	5/17/86	5/13/89	Channel C Lvl 2
0678	5/19/86	5/15/89	Channel D Lvl 2
0785	11/22/86	11/12/89	Channel A drywell
0786	11/24/86	11/11/89	Channel B drywell
0787	4/19/88	2/13/91	Channel C drywell
0788	4/22/88	2/13/91	Channel D drywell
0253	5/09/88	9/25/89	System Lvl 2
1095	4/29/88	9/15/89	System drywell

As can be seen from the above schedule, a channel from each trip system is tested at the same time, such that, each channel is retested every 144 weeks and the system actuation for each trip function is performed every 72 weeks. Thus, the scheduling of the above ECCS response time testing is being performed according to TS 4.3.3.3.

d. Surveillance Observation

The following surveillance tests were observed by the inspector:

- 44.010.002 RPS - Reactor Steam Dome Pressure, Division II, Channel B1, Functional Test; B21-N678B
- 44.010.013 RPS and NSSSS - Reactor Vessel Low Water Level (Level 3), Division I, Channel A1/A, Functional Test; B21-N680A
- 44.020.004 NSSSS - Reactor Vessel Low Water Level (Levels 1 and 2), Division II, Channel Functional Test

In each case, the test was completed satisfactorily. The I&C technicians were each qualified to perform safety-related activities and the lead Nuclear Instrument Repair person was certified to perform the procedure. The technicians exhibited a high degree of professionalism and maintained good communication with the reactor operator. They selected the proper MTE, verified its calibration due date, and answered each procedure step correctly.

The inspector discussed the quality and format of the new surveillance procedures with the technicians. They indicated the procedures were of a high quality and if a problem was detected, they would immediately stop and notify the Nuclear Shift Supervisor and the I&C Foreman. They indicated the new format was easy to understand and to follow. Also, they indicated the training they received was adequate to prepare them to perform work activities in the plant.

d. Summary

The licensee's surveillance program appears to have been implemented with proper management attention. The control of surveillance testing and procedures was being implemented according to Fermi 2 Technical Specifications, procedures, and N18.7 - 1976. The improvement in testing methodology should reduce the potential to degrade safety systems and was consistent with IE Information Notice No. 84-37: "Use of Lifted Leads and Jumpers During Maintenance or Surveillance Testing."

No violations or deviations were identified.

5. Appendix R - High Impedance Fault Considerations

The licensee initiated a review of the high impedance fault issue as a result of NRC Generic Letter 86-10. The letter states, in part, that high impedance faults should be considered for all associated circuits in a fire zone that are required to meet the separation criteria of Section III.G.2 and III.G.3 of Appendix R. The licensee's final report was issued in December of 1987.

Engineering Design Package (EDP) 8398 was developed as a result of this review. The scope of the design was to lower the fault currents which would be available in the event that a fire were to induce high impedance faults. The design lowered the breaker trip settings at 480 VAC switchgear distribution Panels 72B, 72C, and 72E. The following breakers will be affected: 72B-2D, 72B-3B, 72B-4C, 72C-2C, and 72E-3A. The fuses in Circuits 6 and 10 in 120 VAC distribution Panel H21-P558 will be lowered from 15 to 5 amperes.

The inspector reviewed the overcurrent setting sheets and determined that the total available fault current was to be reduced lower than required by the high impedance fault calculation. At the same time, the affected circuits still maintained adequate breaker coordination for other types of fault currents and the circuits would not open from normal equipment operation.

The licensee committed to implementing EDP 8398 during the first refueling outage. Compensatory action was taken by the licensee as a result of the high impedance calculation. The licensee initiated a one hour fire watch in the following fire zones:

- ° Reactor Building 2, Fire Zone 10
- ° Auxiliary Building B, Fire Zone 4
- ° Auxiliary Building 5, Fire Zone 16

The inspector verified that these were the correct fire zones. Implementation of EDP 8398 would require the unit to be shutdown.

The inspector discussed the licensee's actions with NRC fire protection personnel. It was concluded that the one hour fire watch was acceptable compensatory actions until the EDP could be implemented. However, the inspector does recommend the implementation of EDP 8398 if an opportunity arises prior to the first refueling outage.

No violations or deviations were identified.

#### 6. Deviation Report (DER) Followup

- a. DER 88-0457: Missing plug from an unused wiring port on torus wide range level transmitter (T50-N406B). This plug is used to keep the outside environment from affecting the internal electronics. The transmitter was covered by EQ surveillance requirements EQ1-EF2-079. The inspector reviewed the EQ surveillance requirements and the engineering evaluation. The licensee could not determine when the plug had been removed. This transmitter is not located in a LOCA/HELB area. The transmitter will see a temperature increase from a normal of 68° F to 152° F due to a break elsewhere. The maximum relative humidity was 65%. Therefore, the presence of water in the form of condensation would not be possible. The installation instructions did not require a LOCA seal to be installed on the conduit interface connection. The licensee concluded that the missing plug did not invalidate the transmitters environmental qualification. The inspector reviewed the specific EQ requirements as detailed in NE-6.6-EQMS.51. The sub-components were most susceptible to age or radiation related degradation. The inspector concurs with the licensee's analysis based on the facts that the transmitter had not been exposed to an adverse environment and that the transmitter was not located in a LOCA/HELB EQ zone.

The licensee installed a new plug and verified all other EQ Rosemount transmitters did not have a missing plug. The inspector has no further concerns on this item.

- b. DER 88-1023: Transmitter C36-N405 (torus wide range level) was found electrically disconnected. The transmitter leads were disconnected (4/24/88) by EDP 4847 along with Transmitter T50-N406A leads. Transmitter T50-N406A was electrically reconnected and tested upon completion of EDP 4847. Transmitter C36-N405 was discovered inoperable by Operations. Work Request (WR) 018B0505-88 was issued

to troubleshoot the failed torus level indicator on 5/10/88. The leads to C36-N405 were found disconnected. The leads to C36-N405 were reconnected and the transmitter was tested and declared operable on 5/12/88.

The inspector had a number of concerns relating to this DER.

- (1) It did not appear that the installation instructions had been adequately transcribed into work instructions. There were many lined out instructions. This made it difficult to follow the sequential work steps.
- (2) Transmitter T50-N406A was determined and reterminated per Procedure POM 12.000.080, "Conduct of Electrical Field Activities." However, no Interim Alteration Checklist was used to document this activity as required by POM 12.000.080.
- (3) Transmitter C36-N405 was determined and an Interim Alteration Checklist was used. However, when the work package was reviewed for closure, the review did not verify that the transmitter had been reterminated per the Interim Alteration Checklist.
- (4) The work package did not specify post maintenance testing for either transmitter. Transmitter T50-N406A was tested, but the test data was not part of the work package. Transmitter C36-N405 was found inoperable during operator rounds.

The licensee has not completed their review. This is considered an Unresolved Item (341/88018-02) for the NRC to followup on the licensee's root cause determination and corrective actions.

No violations or deviations were identified.

#### 7. Instrumentation Use-History Records

The I&C shop maintains use-history records for technical specification and non safety-related instruments. The folders contain a Use-History Card, Specification Sheet, completed generic data sheets, surveillance test results (TS instruments), and engineering calculations.

The inspector reviewed the TS history folders and found the following:

- ° Specification Sheets were unapproved and uncontrolled.
- ° Engineering calculation sheets that determined head corrections were unapproved and uncontrolled.
- ° Specification Sheets did not match surveillance test procedure calibration units.

The following are examples:

- E51-N058A: Specification Sheet head correction was 3.8 psig, Surveillance Procedure 44.020.239 was 3.9.
- B21-N081A: Specification Sheet calibration range was -217.87 to -68.40 INWC, Surveillance Procedure 44.020.07 was 217.8 to 68.3 INWC.
- B21-N090A: Specification Sheet head correction was 0.2 psig, Surveillance Procedure 44.030.271 used no head correction.
- G11-N150: Specification Sheet and Engineering Sheet were unapproved.
- G11-R902: Specification Sheet unapproved.
- G11-N151; G11-N153: Specification Sheet unapproved and the Specification Sheet setpoint was in inches, where Surveillance Procedure 44.120.050 was in milliamperes.

Failure of the licensee to assure that activities affecting quality include appropriate quantitative or qualitative acceptance criteria (10 CFR 50, Appendix B, Criterion V) and to establish controls for the issuance of such documents which prescribe all activities affecting quality (10 CFR 50, Appendix B, Criterion VI) is considered a violation (341/88018-03).

No other violations or deviations were identified.

## 8. Engineering

During the performance of Surveillance Procedure 44.020.004, "NSSSS - Reactor Vessel Low Water Level (Levels 1 and 2) Division II, Channel Functional Test," the inspector noted there was no annunciation of the Level 1 channel trip. This trip produces a half MSIV Isolation Signal. The test was performed satisfactorily. However, the inspector is concerned whether the NSSSS Level 1 should be annunciated.

The safety design bases for the Containment and Reactor Vessel Isolation Control System (CRVICS) commits to the requirements of IEEE 279 - 1971 (Fermi 2 UFSAR, Section 7.1.2.1.2). Additional supplemental design basis information was provided in Fermi 2 UFSAR, Section 7.3.2.1.k which states:

"The following bases are specified to provide the operator with the means to assess the condition of the CRVICS and to identify conditions indicative of a gross failure of the nuclear system process barrier

1. The CRVICS is designed to provide the operator with information pertinent to the status of the system

2. Means are provided for prompt identification of instrument channel and trip system response."

IEEE Standard 279 - 1971 states in Section 4.19 (Identification of Protective Actions) that "Protective actions shall be indicated and identified down to the channel level." The inspector needs to know the following:

- a. How does the Fermi 2 CRVICS NSSSS Level 1 design meet IEEE 279 - 1971, Section 4.19.
- b. All the channels that are required to meet IEEE 279 - 1971 definition "protective action" and how they meet Section 4.19.

This is considered an Unresolved Item (341/88018-04).

No violations or deviations were identified.

#### 9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Unresolved items identified during the inspection are discussed in Paragraphs 5.b and 8.

#### 10. Exit Interview

The inspector met with the licensee representatives (denoted in Paragraph 1) on June 10, 1988. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the statements made by the inspector with respect to the violations. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.