

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/82-13(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 Station, Unit 2

Inspection At: Enrico Fermi 2 Site, Monroe, MI

Inspection Conducted: September 13-15, 1982

Inspector: *F. W. Reimann*
F. W. Reimann

10-8-82

Approved By: *I. N. Jackiw*
I. N. Jackiw, Chief
Test Programs Section

10-8-82

Inspection Summary

Inspection on September 13-15, 1982 (Report No. 50-341/82-13(DETP))

Areas Inspected: Routine announced inspection of preoperational test program implementation. The inspection required 29 inspector-hours onsite by one NRC inspector including eight inspector-hours during offshift.

Results: One item of noncompliance with NRC requirements was identified (see Paragraph f(2)); failure to provide adequate acceptance criteria in preoperational test procedure. The initial program evaluation concludes that licensee actions are adequate with regard to preoperational test management.

DETAILS

1. Persons Contacted

- *F. E. Agosti, Assistant Manger, Nuclear Operations - Startup Testing
- H. O. Arora, Startup Engineer
- *T. L. Mintun, General Electric Site Operations Manager
- P. Fessler, Lead Startup Test Engineer - NSSS
- A. D. Peluso, Lead Startup Test Engineer - Control Center
- E. Griffing, Plant Manager
- R. Willems, Startup Test Engineer - NSSS
- *T. S. Nickelson, Startup Director
- *B. Mordecai, Operational Assurance
- *W. Morrison, Operational Assurance
- *T. A. Alessi, Director, Project Quality Assurance
- *M. Haven, Startup Assurance Engineer

*Denotes those present at the exit meeting held on September 15, 1982.

In addition to those listed above, the inspector interviewed individuals from the licensee's testing, instrumentation, maintenance, and operations groups, and craft individuals employed by site meachanical and electrical contractors.

2. Test Program

- a. The inspector interviewed seven individuals including the test program manager and key test program management personnel to determine the degree of familiarity with the documented procedures, instructions, and regulatory committments relating to conduct of the preoperational test program.

Finding

- The licensee's preoperational test program management is knowledgeable in formal program requirements including FSAR Chapters 14 and 6, Appendix A to the FSAR, the startup manual, and satellite administrative procedures and instructions which implement the above documents. Day to day conduct of test program activities appears to conform to documented requirements. Accordingly, the initial program implementation is found to be acceptable.
- b. The inspector reviewed the master CPM schedule for conduct of preoperational tests, and supporting documentation to control procedure preparation, review and approval. Specific schedular requirements for the control rod drive hydraulic system, 125 vdc batteries, standby liquid control system, main steam, and containment Type B preoperational tests were compared to the existing status of procedures and equipment.

Finding

The master schedule and supporting schedule documents are up to date and controlling actual work being accomplished.

- c. The inspector interviewed the individuals described in Item 2.a above in addition to two lead testing personnel to determine that:
- (1) Responsibilities of key test personnel are understood.
 - (2) Methods and responsibility for assigning personnel are understood.
 - (3) Lines of authority and responsibility are understood.
 - (4) Interfaces with other site organizations which affect test program activities (AE, Licensee Engineering, NSSS Vendor, Operations, and Construction Management) are understood.

Finding

The individuals interviewed were knowledgeable of the program requirements described in (1) through (4) above, and appear to observe these requirements in day to day program implementation.

- d. The inspector reviewed licensee controls for construction deficiency/completion items (punchlist items) for the standby liquid control system (which is currently scheduled for preoperational test start), and spot checked jurisdictional tagging controls for Drywell Cooler T4700-B006 (system test in progress). The subject of turnover control was also discussed programatically with management and testing personnel.

Finding

As is commonly the case for a nuclear generating station approaching the preoperational testing phase, a large number of punchlist items exist (approximately 12,000) at this time. The licensee has recently reorganized to implement a System Completion Organization (SCO) which is responsible for taking jurisdictional control of a given system prior to preoperational testing. The SCO, then, expedites punchlist item resolution and construction testing (CIAO testing) to assure readiness for preoperational testing. Lead Test Engineers (with responsibility for testing a given system) separately evaluate punchlist items to ensure that the potential for invalidating preoperational test results is avoided.

A detailed check of the effectiveness of these controls was conducted for the Standby Liquid Control System (PRET. 4100.001, Revision 3). It was found that the status of equipment was known, and that all punchlist items were tracked in terms of potential effect on adequacy of preoperational testing. It is noted that, at the time of the inspection, the test start was being delayed pending resolution of punchlist items.

The spot check of Drywell Cooler T47.00-B006 verified that the unit was "blue tagged," signifying jurisdictional control by the testing personnel. It was noted, however, that the cooling water to and from the unit were "yellow tagged" for hydrostatic test. Although the testing department performs the hydrostatic testing, the adequacy of the tagging controls for this case needs further resolution (Open Item 341/82-12-01).

The preliminary assessment is that controls in this area are acceptable. The inspector is concerned that the total burden of construction completion and deficiencies may become difficult to manage as the test program is implemented for a large number of systems simultaneously. Further evaluation of this concern will occur as a routine programmatic evaluation.

- e. The inspector interviewed test engineering personnel, examined three procedures at random, and reviewed status logs to verify that responsible individuals are knowledgeable in procedure contents and controls exist to assure that revisions in use are current.

Finding

No exceptions to program requirements were noted. The program was found to accomplish its objectives in this area.

- f. The inspector conducted a detailed review of preoperational test Procedure PRET 4100.001, Revision I to determine whether or not applicable requirements are met, including:
 - (1) That the commitments of FSAR Chapter 14 were met.
 - (2) That the requirements of Regulatory Guide 1.68 were met as committed in Appendix A to the FSAR.
 - (3) That the procedure would not result in potential degradation of equipment.
 - (4) That the procedure adequately tested the design provisions contained in the applicable specifications, mechanical drawing, electrical drawings, instrument data sheets, and other design documents.
 - (5) That the procedure references adequately reflect the requirements of the procedure.

Finding

Numerous questions arose from the review of Revision I. Of the 37 questions which had significant bearing (non-typographical/or clerical) it was determined that 34 were independently found and corrected by the licensee's staff prior to the inspection. (The licensee was currently working with the approved Revision 3 to the procedure).

In regard to the remaining three items:

- (1) It is unclear as to whether or not the potential exists for uncovering the storage tank heaters while following the step by step instructions in accordance with the administrative procedures for conduct of preoperational tests. The licensee has committed to evaluate this concern (Open Item 341/82-13-02).
- (2) In the conduct of the procedure, freon is used to cool heat tracing to verify its operability. Because large portions of the system stainless steel piping is insulated, the concern exists that residual freon (fluorocarbon) contamination in insulation could contribute to intergranular stress corrosion cracking (IGSCC). The licensee has committed to resolve this concern (Open Item 341/82-13-03).
- (3) Revision 3 of the procedure, which is approved for implementation, contains several requirements to collect data in regard to operability of system design requirements (including over pressure relief valve lift setpoints, and loss of squib valve firing current annunciator setpoint). Neither the test step, nor Section 8 of the procedure (Acceptance Criteria) contain acceptable values for these parameters, acceptable tolerances for the values, or clear reference to the controlled document which contains the acceptable value or tolerance. The inspector informed the licensee that similar situations were discovered during reviews of other tests conducted on early revisions of procedures which were submitted to Region III for review.

The licensee's testing personnel informed the inspector that a policy requiring increased attention to this problem has recently been implemented as a result of similar findings by his own review process.

The licensee has committed to review the procedure and correct the deficient steps.

The failure to include the above mentioned acceptance criteria appears to be a noncompliance with regulatory requirements in that the commitments of FSAR Appendix A to comply with Regulatory Guide 1.68, Revision 0, and the requirements of 10 CFR 50, Appendix B, Criterion XI "Test Control" and Criterion V "Instructions, Procedures, and Drawings" have not been met (341/82-13-04).

A spot check of CIAO prerequisite testing and a detailed review of calibration testing for temperature indicating switch R003 revealed that testing was adequately accomplished in accordance with adequate and approved procedures; and that required documentation was accomplished in accordance with controlling procedures.

No additional items of noncompliance were noted.

g. Independent Inspection Effort

- (1) The inspector toured various areas of the plant, including inside drywell, the refueling floor, the main steam tunnel, reactor building elevations 583'6", 613'6", 641'6", and 659'6", portions of the turbine building containing safety related equipment, and the standby liquid control system.

The licensee was in the process of performing repairs to the control rod drive hydraulic pumps (CRDH Pumps) and the outboard main steam line isolation valves (MSLIV). The CRDH pump work appeared adequate, and craftsmen involved were aware of plans and corrective actions planned by management during a meeting earlier in the day. The inspector was concerned about the condition of the MSLIV repair work. Various parts of the valves were randomly laid around the steam tunnel, exposed to unacceptable environmental conditions including dirt and construction debris. The majority of the junction box covers in the steam tunnel were removed, as were protective covers for equipment electrical parts. General area cleanliness was not acceptable. Three Resistance Temperature Detectors (RTD) installations in the steam tunnel were found to be damaged in that the armored conduit connected to the sensor head assembly was broken (apparently from being stepped upon) and the lead wires were supporting the weight of the conduit. The licensee was appraised of the unacceptable conditions.

General plant cleanliness was found to be lacking in several areas, especially in regard to food waste, metal debris, and wood debris in cable trays; storage of equipment and components in areas also used to accumulate debris without apparent segregation or identification; and accumulations of combustible materials with (and in) safety related equipment (including oil, oil soaked wipes and rags, and general food and construction debris). Enforcement sanctions were not taken for these unacceptable housekeeping practices because the licensee is still responding to a similar finding by the NRC construction appraisal team. The licensee was informed that failure to remedy deficient housekeeping practices will result in continued enforcement sanctions. This matter will be tracked as an open item (341/82-13-05) to assure that existing conditions do not present the potential for invalidating preoperational test results.

- (2) The inspector noted that the licensee has implemented a system whereby regulatory commitments are tracked formally from the licensing function thru the various licensee groups responsible for their implementation. The system is considered a positive action by licensee management to organize and manage regulatory requirements.

h. Exit Meeting of September 15, 1982

The licensee was appraised of the findings described in this report. The inspector noted that the licensee's test program management and staff appeared to be knowledgeable and competent in regard to pre-operational test program requirements. Two concerns were discussed (1) the potential negative impact of poor housekeeping on equipment, and (2) a concern that the large number of punchlist items outstanding on systems coming due for preoperational testing may become difficult to track or resolve as the test program expands to its full work load.