U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/86018(DRSS)

Docket No. 50-341

License No. NPF-33

Licensee: The Detroit Edison Company 6400 North Dixie Highway Newport, MI 48166

Facility Name: Enrico Fermi Atomic Power Plant, Unit 2

Inspection At: Fermi 2 site, Monroe, MI

Inspection Conducted: May 19-23, 1986 O. P. Patterson

Team Leader

Inspectors: O J. Foster for

J. P. Patterson M. Smith for Approved By: DW. Snell, Chief

Approved By: OW. Snell, Chief Emergency Preparedness Section

June 4, 1986 Date June 4, 1986 Date June 4, 1986

Inspection Summary

Inspection on May 19-23, 1986 (Report No. 50-341/86018(DRSS))

Areas Inspected: Routine, announced inspection of the following areas of the Fermi Nuclear Power Plant emergency preparedness program: activations of the licensee's emergency plan; emergency detection and classification; dose assessment; protective action decisionmaking, notifications and communications; changes to the emergency preparedness program; shift staffing and augmentation; knowledge and performance of duties (training); licensee audits; maintaining emergency preparedness; and emergency response coordination with Canada. The inspection involved two NRC inspectors and one consultant. Results: No violations, deficiencies, or deviations were identified.

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DETAILS

1. Persons Contacted

Detroit Edison Company

*T. Randazzo, Director, Regulatory Affairs *J. Mulvehill, EP Response Planner *F. Schwartz, Supervisor, Staff QA *L. Bregni, Compliance Engineer, Licensing *R. McLeod, Asst. Director, Nuclear Training *M. Hoffman, Emergency Planner *J. Coffin, Procedure Writer J. Petoskey, Associate Nuclear Training Specialist C. Anderson, Secretary M. Cooley, Emergency Response Planner G. Lightfoot, Shift Supervisor G. Pierce, Shift Supervisor R. Henson, Shift Supervisor T. Schehr, Shift Supervisor L. DeLucia, Assistant Shift Supervisor R. Speek, Assistant Shift Supervisor E. Hertzenrater, Assistant Shift Supervisor C. Hartley, Nuclear Supervising Operator L. Barker, Nuclear Supervising Operator E. Palmer, Nuclear Supervising Operator J. Davis, Communicator J. Dewes, Shift Technical Advisor J. Tibai, Shift Technical Advisor C. Byrd, Shift Technical Advisor W. Colonello, Shift Technical Advisor F. Ghodsi, Senior Nuclear Engineer G. Smith, Senior Nuclear Engineer B. Heffner, Director, Public Information D. Kay, Monroe County Emergency Planner M. Sparks, Wayne County Emergency Planner E. Toma, Frenchtown Fire Department

*Denotes those personnel listed above who attended the exit interview on May 23, 1986.

2. Licensee Actions on Previously-Identified Open Items

- a. (CLOSED) Open Item 341/85034-01: Revisions needed to the Emergency Plan and to procedure EP-101. The Emergency Plan and EP-101 have been revised to incorporate the NRC's comments. This item is closed.
- b. (CLOSED) Violation 341/85034-02: Changes to the Emergency Plan. This inspection indicated that procedures are in place to transmit Plan changes to the NRC, and current revisions of the Plan had been sent to Region III as required. The licensee initiated changes to the Automatic Records Management System (ARMS) during the August 5-8, 1985 inspection. The inspector reviewed the licensee's computer

listing of all revisions distributed since that inspection against the receipt log maintained by Region III and verified all changes had been sent. This item is closed.

- c. (OPEN) Open Item 341/85034-03: Coordination of training to assure emergency qualifications are maintained. As detailed in Section 9 of this report, actions had been taken to improve the coordination of Emergency Preparedness training and reduce the number of personnel not meeting the twelve month requalification requirement. However, a licensee audit and this inspection revealed continuing problems in this area. Therefore, this item will remain open.
- d. (OPEN) Open Item 341/85041-01: Protective Action Recommendation (PAR) difficulties due to wind change in exercise scenario. Procedure EP-545, "Protective Action Guideline Recommendations", and related Training Module 9 have been changed to clarify and emphasize meteorological inputs to dose assessment personnel, and additional training has been provided. This item will remain open pending successful demonstration of PAR recommendation capability during an exercise.
- e. (OPEN) Open Item 341/85041-02: ALARA deficiencies in off-site survey team actions. Procedures have been revised to more clearly outline As Low As Reasonably Achievable (ALARA) considerations, and additional training has been conducted. This item will remain open pending successful demonstration of ALARA considerations by off-site survey teams during an exercise.
- f. (CLOSED) Open Item 341/85041-03: Need for a status board to trend selected plant conditions. A status board has been allocated in the EOF for trending selected plant parameters affecting protective action recommendations on offsite releases. Grids are available to trend any two selected plant parameters. This item is closed.
- g. (OPEN) Open Item 341/85041-04: Suggested revision of Dose Assessment computer Code. Licensee personnel indicated that discussions had been held with Sargent & Lundy representatives regarding dose assessment code modification to accommodate ATWS conditions. Modifications to the code remain under consideration.

3. Activations of the Licensee's Emergency Plan

A review of licensee and NRC records indicated that two activations of the licensee's Emergency Plan (both Unusual Events) had taken place since the last inspection.

The first event occurred on October 19, 1985. A testing error resulted in an unanticipated Emergency Core Cooling System initiation. This event occurred at approximately 6:08 a.m., and was not classified until 8:40 a.m. due to the unclear wording of the relevant Emergency Action Level (EAL). The EAL stated that it related to non-test initiations, and shift personnel interpreted this to mean that the incident was not classifiable under the Emergency Plan. Subsequent review and discussion led to the conclusion that the event was classifiable, and the Radiological Emergency Response Plan (RERP) was activated. Documentation indicated that all notifications were properly made within the required time frames following the event classification. The inspector reviewed the relevant EAL, and confirmed that the reference to non-test initiation had been deleted. The licensee should again review this EAL with shift personnel and assure that the reference to a "valid signal" is not confusing.

The second event occurred on January 31, 1986. An earth tremor (earthquake) of initially undetermined magnitude was felt onsite at approximately 11:47 a.m., and was properly classified as an Unusual Event at approximately 12:15 p.m.. Documentation indicated that all notifications were properly made within the required time frames. Licensee records agreed well with NRC notification time logs.

No violations or deviations were identified in this area.

Emergency Detection and Classification (82201)

The inspector reviewed the RERP and Procedures, and interviewed a total of 17 persons, including 4 Nuclear Shift Supervisors, three Nuclear Assistant Shift Supervisors, four Nuclear Supervisory Operators, four Shift Technical Assistants, and two Nuclear Engineers.

The licensee's emergency classification and action level scheme was consistent with the guidance contained in Appendix 1 of NUREG-0654, Revision 1. The licensee demonstrated the capability to analyze and assess emergency conditions on a twenty-four hour basis. The classification procedure, EP-101, had been recently revised to correct a number of problems and to make it more "user-friendly". The interviews generally supported that this goal had been achieved, even though the operators had not yet attained as much facility and familiarity with the revised procedure as would be expected with additional time and practice.

The individuals interviewed exhibited outstanding attitudes, both toward their normal duties and to the interview itself. They were uniformly knowledgeable, and enthusiastic. When a team member made an error, the other members were quick to step in and correct; minor weaknesses pointed out and suggestions made were accepted constructively.

Items noted as problems under this module in the previous inspection (No. 50-341/85034(DRSS)) were reviewed and found to be corrected. Otherwise, interviews showed the shift personnel to be quite well-versed in fission product barrier analysis. Two of the groups had difficulty in locating the correct (or specific) classification for the case of a turbine blade which penetrates the turbine casing. However, in each case the correct classification was reached via a different section of the procedure. Two of the groups differed in their understanding of the availability, in the Control Room, of certain radiological Technical Specification limits. No other weaknesses or misunderstandings were common to more than one group, and thus were not considered general weaknesses. These were discussed with interview teams on the spot and also with an Emergency Preparedness Specialist who sat in on two of the interviews.

A spot check of several Emergency Operating Procedures (EOPs) confirmed the licensee's statement that each EOP has, as the last item under "immediate action", a caveat to check the EAL's under EP-101 for a possible classifiable event.

An annual review of the EAL's was held with state and local authorities, as required by 10 CFR Part 50, Appendix E, IV.B. This review was held in the spring of 1985. The next annual review is scheduled to be held on June 19, 1986.

No violations or deviations were identified in this area.

5. Protective Action Decisionmaking (82202)

A review of the RERP and Procedures, along with the interviews of shift operating personnel, demonstrated that the authority and responsibility to make protective action recommendations were clearly delineated and clearly understood. Personnel demonstrated facility and familiarity with the procedures, and made frequent reference to them. The ability of the licensee to assess and analyze emergency conditions and to make recommendations to protect the public and onsite workers was appropriately and adequately demonstrated.

Procedure EP-545, "Protective Action Guidelines Recommendations", specified that field monitoring team results were to be considered in protective action recommendations, if available. Discussions with Emergency Response personnel indicated that the intent was to compare field team results with the calculated data. However, because the calculations use default values where actual values are unavailable, the results are more conservative. Thus, gross check comparisons are made using Field Monitoring Team data, but no attempt is made to use the field data to refine the more conservative (and more up-to-date) dose calculations. The licensee stated that this approach was understood by and acceptable to state and local authorities.

The guidance provided in NUREG-0654, Appendix 1, page 1-17, item 3 (note) to "consider 2 mile precautionary evacuation" in the case of loss of physical control of the facility, was not reflected in procedure EP-545, "Protective Action Guidelines and Recommendations". This item was also noted in the previous inspection report (No. 50-341/85034(DRSS)). This is considered an Open Item (341/86081-01).

The requirement, on a classification of General Emergency, to immediately recommend sheltering in a 2 mile radius around the plant and five miles in downwind sectors, was appropriately included on Table 5.1 of EP-545. However, a review of the Michigan Notification Forms contained as

Attachments 1, 2, and 3 of EP-290 "Emergency Notifications From the Control Room, Technical Support Center, or Emergency Operations Facility", indicated that these forms may be misleading in support of this requirement. These forms had asterisks placed by certain items which indicate "Required for initial notification." Section 12 of the form pertained to Protective Action Recommendations, but was not asterisked, nor was there any note on the form as a reminder of the mandatory and immediate protective action recommendation associated with a classification of General Emergency. This observation was substantiated during the interviews when the personnel queried responded that they would not provide the recommendation on the initial notification, but would do so on the first follow-up notification.

No violations or deviations were identified in this area; however, the following item should be considered for improvement:

 Add a note to the appropriate section of the Michigan Notification Forms (Attachments 1, 2, and 3 to EP-290) to insure the minimum required protective action recommendation is made on the initial notification of a classification of, or escalation to General Emergency.

Notifications and Communications (82203)

The inspector reviewed selected procedures and conducted discussions with personnel who have notifications or communications responsibilities. Interviews with shift operations personnel included questions relevant to communications and notifications associated with the various emergency classifications. It was determined that the licensee had the capability to notify and communicate among the appropriate licensee personnel, offsite agencies and authorities, and the general public in the event of a radiological emergency.

Monthly siren tests had been conducted and documented. However, there was no cover sheet for each monthly packet of siren test result sheets. This precluded a simple check that all siren locations had reported, and a recap of problems encountered. Additionally, there was no record of actions taken to follow-up on correction of problems identified during these monthly tests.

Monthly communications tests of the Emergency Notification System (ENS) and Health Physics Network (HPN) telephones had been conducted and documented, but there was no written record of action taken to correct discrepancies found.

No written record was kept of periodic UHF radio communications tests. It was explained that this was unnecessary since the vans used by Radiation Emergency Teams, and the radios in those vans, are in daily use by the company. Any problems were said to be corrected when occurring, since the radio system is essential to daily operations.

During interviews, Control Room Communicators were questioned about methods to authenticate or validate notification messages in the event a commercial telephone line had to be used. The communicators, in some cases with help from their Shift Supervisor, stated they would instruct the notification recipient to call back to the Control Room to verify. A review of procedure EP-290, "Emergency Notifications from the Control Room, Technical Support Center, or Emergency Operations Facility" indicated that there was no mention of validation/authentication in the procedure. Several methods to accomplish validation/verification (when non-dedicated lines must be used) were discussed with an Emergency Response Planner.

No violations or deviations were identified in this area; however, the following items should be considered for improvement:

- Develop a method to verify or authenticate notifications which are made on non-dedicated lines, so that the county or State can be assured the notification is authentic.
- Provide for, or upgrade documentation related to siren tests, telephone tests, and radio communications tests.

7. Changes to the Emergency Preparedness Program (82204)

The inspector reviewed the changes made to the program since the last inspection, and determined that these changes have not affected the licensee's overall state of emergency preparedness. The Vice-President, Nuclear Operations, maintains overall authority and responsibility for the RERP. The RERP Supervisor is directly responsible for the development and updating of revisions to the RERP and Implementing Procedures. The RERP Supervisor was recently also assigned to the position of Director, Regulatory Affairs, and now maintains the responsibility of two full time positions.

Three emergency planners are responsible for the coordination of the RERP program. One emergency planner is the Emergency Preparedness Work Leader during each calendar quarter and reports weekly to the RERP Supervisor/Director, Regulatory Affairs. This change is part of an on-going utility reorganization; therefore, all assignments are not completed at this time. The effect on the overall performance or coordination of the Emergency Program was not observable during this inspection.

Emergency Organization staff changes resulted from the licensee's self critique following the October, 1985 exercise. A December 26, 1985 letter notified the NRC Regional Administrator of the proposed deletion of the following positions; the EOF Coordinator position, and the QA Advisor in the TSC. Also proposed was deletion of Public Affairs implementation procedures from the RERP procedures. Revision 5 (dated March 12, 1986) of the RERP reflects the staff changes in the Emergency Operations Facility (EOF) and Technical Support Center (TSC). The RERP implementing procedures need to be updated to reflect recent plan changes in staff and corresponding emergency response duties. EP personnel indicated these changes are in the review process and will be completed in the near future.

All changes to the RERP and procedures are part of the licensee administrative review process. This process requires two levels of review before submittal to the On Site Review Organization (OSRO) for review prior to Plant Manager approval. Temporary changes are in effect for 2 weeks during the review process and are automatically cancelled if final approval by the Plant Manager is not obtained.

The Nuclear Administration Information System (NAIS) administers distribution of plan and procedure revisions. The inspector reviewed this system and verified all changes for this year have been distributed according to the requirements of 10 CFR 50, Appendix E.

No violations or deviations were identified in this area.

8. Shift Staffing and Augmentation (82205)

The inspector reviewed minimum shift staffing and capabilities for all shifts and concluded the emergency response organization met the guidelines of Table B-1 of NUREG-0654, Revision 1. Table B-2 of the RERP lists the position, alternates, reporting function, location and responsibilities for each position. An administrative system is in place to assure that off-site emergency response personnel are available as needed to meet the 30 and 60 minute response times. Licensee personnel meet functional requirements for staffing by having assigned emergency tasks related to their normal duties.

The call-out list of emergency personnel is updated and distributed weekly, according to procedure EPA-7. The notification system and call-out procedures to implement shift augmentation are described in procedures EP-290 and EP-291.

The licensee successfully activated the call-out procedure as part of their October 2, 1985 exercise; however, shift staffing and augmentation drills are not part of the Emergency Preparedness plan drill requirements. Semiannual activation of the call-out procedure is encouraged to maintain and demonstrate licensee response capabilities in this area. One of these semiannual activations of the call-out procedure should be conducted during off-hours to ensure adequate 24-hour staffing capabilities.

The licensee was encouraged to incorporate semiannual activation of emergency call-out procedures as part of their emergency preparedness plan and drill program. A commitment to this effect was received at the exit interview. This will be tracked as Open Item No. (341/86018-02).

No violations or deviations were identified in this area.

9. Knowledge and Performance of Duties (Training) (82206)

Radiological Emergency Response Plan (RERP) training requirements are found in Section 0 of the RERP (Rev. 6), including a matrix of qualification requirements for each position, and Emergency Plan Administrative Procedure EPA-8 establishes the details of the qualification program. The Personnel Training History System (PTHS) provides qualification/requalification status for each individual assigned to a position in the emergency organization. Printouts from this system are normally made by area assigned (Control Room, TSC, EOF, off-site), and by position in the area assigned. The printouts also indicate the last requalification date for an individual's assigned training modules. The system automatically issues warning asterisks on the printout for any individual who is within 90 days of a RERP training module's twelve month requalification date.

Course material for training unit 5, "RERP Emergency Classification", File 08 32 000, Revision 2, was reviewed by the inspector, including lesson guide, lesson objectives, question bank and three alternate versions of the course exam. The material was comprehensive and complete, had been reviewed and recently updated (as of April 1986). The question bank and alternate versions of the course exam appeared to be well thought out.

For critical positions, qualification requirements include participation in at least one drill per year. Partially due to difficulties in meeting this requirement, drills are now held on a quarterly basis.

The previous inspection report found serious problems in this area in that a number of individuals had not met the requirement for yearly training requalification, but did not contain a Notice of Violation, as the criteria for not issuing a violation had been met. A review of licensee records indicated that the annual licensee audit for 1985 (Audit A-QS-P-85-07) had identified the above problems, and corrective actions were underway.

The licensee's annual audit for 1986 (Audit A-QS-P-86-09) was conducted prior to the present inspection, and indicated that problems still exist in ensuring that critical personnel meet the requirements for RERP training requalification. Of central concern was that the audit identified three shift Supervisors and two Shift Technical Advisors (STAs) whose qualifications had lapsed (no requalification training within 12 months). These are primary positions in the Emergency Response program, as these individuals automatically assume undelegatable responsibilities upon plan activation while they are on shift.

A review of documentation indicated that corrective actions had been initiated, and all STAs had been requalified prior to the inspection. Two Shift Supervisors were retrained during the inspection. An analysis of training records indicated that these individuals were trained within the standard time frame band of plus or minus twenty-five percent, and the overall requalification program did show improvement over that evident in the last inspection. Therefore, no violation will be issued, but the previous Open Item (341/85034-03) will remain open.

There were no violations or deviations identified in this area.

10. Dose Calculation and Assessment (82207)

The inspector reviewed the equipment and procedures to be used for dose assessment.

The primary dose assessment method utilized an Emergency Response Information System (ERIS) program, RADOSE. The same RADOSE program is used on the IBM microcomputer as a backup to ERIS. A manual technique contained in procedure EP-540, "Manual Calculation of Offsite Radiological Dose Rates and Doses - Airborne Releases", used in conjunction with EP-544, "Meteorological Data Assessment", and EP-546, "Manual Calculation of Dose Assessment Factor for Lake Breeze Conditions", can be used as a secondary backup. The ERIS and IBM methods are proceduralized in EP-542, "Radiological Dose Assessment Calculational Procedure Based on the Use of a Microcomputer, Airborne Releases."

It was reported that the State has incorporated into their dose assessment model/methodology those licensee plume analysis modifications which pertain to noble gases, but not (as yet) those pertaining to Iodine releases. A test, which had been conducted to check consistency with the State's computerized model resulted in close correlation for noble gases and dose rates. Disparity occurred in the integrated doses, but this was not unexpected, since the State's model did not consider isotope decay. The State understands and accepts this approach.

Previous inspection report (No. 50-341/85034(DRSS)) noted that work orders to correct the orientation of the meterology tower instrumentation booms into the prevailing wind (per Reg. Guide 1.23) were in progress. Subsequently, these work orders were apparently misplaced and the work was never done. It was stated that a new work order had been issued. This item will now be tracked as an Open Item (341/860018-03).

Incident to the operator interviews, a dose assessment calculation was performed satisfactorily using the ERIS microcomputer. The ERIS method was reported to be less "user-friendly" than the IBM method.

There were no violations or deviations identified in this area.

11. Public Information Program (82209)

The licensee's public emergency information program meets the requirements of 10 CFR 50, Appendix E. The brochure titled "What to do in Case of an Emergency at a Nuclear Power Plant" was issued September, 1985, and its contents meet the guidance of NUREG-0654, Revision 1. The listed telephone number for the Wayne County Emergency Management Division has been corrected as suggested in NRC inspection report (No. 50-341/85034(DRSS)). Brochure information has been placed in local telephone directories within the 10 mile EPZ. The utility also provides stickers and posters for yearly placement in public areas which service the transient population.

Annual media briefings are conducted, usually before the annual emergency exercise.

Public Information procedures contained in the RERP implementing procedures are presently in the administrative review process in preparation for a major procedural revision. Revised procedures now indicate that the emergency communication organization will activate at the Jnusual Event declaration with a small on-site news center. If the incident escalates to a Site Area Emergency, the Joint Public Information Center (JPIC) at Monroe Community College will then activate, for long term operation. This change in operation should more readily provide the press with information at all levels of emergency classification.

No violations or deviations were identified in this area.

12. Licensee Audits (82210)

The licensee's Quality Assurance group performs an audit every twelve months which meets the requirements of 10 CFR 50.54(t). Individuals performing the audit have no responsibilities for implementing the Emergency Response Program. The inspector confirmed through record review that the audit has been performed within twelve month periods.

Licensee procedures provide for the conduct, documentation, and corrective action associated with audits. The RERP audit for 1986 (Audit A-QS-P-86-09) was performed during March 17-April 23, 1986. The audit report was comprehensive and professional, and contained four audit finding reports (one closed out during the audit) and seven observations.

As noted in Section 9, one of the significant findings of the above audit was that problems still exist in the coordination of RERP requalification training. The fact that the licensee's audit program identifies such weaknesses is an indication that the audit program is functioning appropriately.

A detailed review of the 1986 audit indicated that an evaluation of interfaces with offsite authorities had been indirectly addressed within several portions of the audit, but had not been specifically addressed. In addition, discussion with licensee personnel indicated that the audit is made available to offsite authorities during various meetings, but no documentation was available to verify that this had been done. 10 CFR 50.54(t) requires that the audit address the adequacy of the interface with offsite authorities, and that the audit be made available to offsite authorities. Documentation should be available to show that these requirements have been met. This is an Open Item (341/860018-04).

No violations or deviations were observed in this area.

13. Interface with Canada

A review of the Licensee's RERP program indicates excellent coordination between Detroit Edison and the Province of Ontario. According to the RERP and corresponding implementing procedures, initial notification of Canadian/Essex County officials occurs at the Alert or above emergency classification. Initial notification is provided at each escalation level. The State of Michigan provides additional information between classifications. A Canadian representative is stationed in the EOF along with the State of Michigan. This representative participates in all EOF activations involved in Fermi 2 exercises.

The Canadian Government also responds to activations of the JPIC and is a vital part of media coordination with State, local and utility Public Information Officers. Utility representatives respond to requests from local Canadian groups for information or for personal appearances at various local meetings.

The utility has financially assisted the Province of Ontario in the development of their communication capabilities, and Emergency Plan & Implementing Procedures. The Canadian public information brochure is modeled after the Fermi 2 brochure.

No violations or deviations were identified in this area.

14. Exit Interview

The inspectors held an exit interview on May 23, 1986, with the representatives denoted in Section 1. The NRC Team Leader discussed the scope and findings of the inspection.

Following discussion of the need for periodic shift augmentation drills, the licensee committed to amending their Emergency Plan to specifically include periodic shift augmentation drills at specified intervals.

The licensee was also asked if any of the information discussed during the exit was proprietary. The licensee responded that none of the information was proprietary.