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Docket No.: 50-341

MEMORANDUM FOR: G. Lainas, Assistant Director for Operating Reactors, DL  
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 W. V. Johnston, Assistant Director for Materials & Qualifications Engineering, DE  
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 M. Ernst, Assistant Director for Technology, DST  
 S. Schwartz, Deputy Director, Division of Emergency Preparedness  
 J. Gray, Assistant Chief Hearing Counsel, Hearing Division, OELD

FROM: T. M. Novak, Assistant Director for Licensing, DL

SUBJECT: REVIEW OF SUPPLEMENT NO. 3 TO THE SER FOR FERMI 2

Enclosure 1 is a copy of the Draft Fermi 2 SSER 3. Enclosure 2 is a copy of draft Fermi 2 SE input that will be incorporated into SSER 3 before issuance. In addition, SE input from EPLB providing its evaluation of the Fermi 2 Emergency Preparedness Plan will be incorporated into SSER 3 prior to issuance.

Please provide proposed revisions to the enclosed drafts for SSER 3 to L. Kintner, the Fermi 2 Project Manager, prior to November 10, 1982.

Original signed by:  
 E. J. Youngblood

for

Thomas M. Novak, Assistant Director  
 for Licensing  
 Division of Licensing

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Enclosures:  
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DATE	11/3/82	11/3/82	11/3/82			

ENCLOSURE 2

Draft Input for SSER 3

1. Section 12.5 (Radiation protection for radwaste building addition to be used for interim storage of low-level wastes)
2. Section 3.10 (Supersedes first paragraph in Section 3.10 of Draft SSER 3 regarding status of review)
3. Section 3.8.1.3 (Supersedes Section 3.8.1.3 in Draft SSER 3 regarding status of applicant's responses to Humphrey's concerns)

## 12.5 Interim Storage of Low Level Wastes

The purpose of the Onsite Storage Facility (OSSF) at Fermi II is to provide a protective barrier around the stored low level radioactive waste. The radiation protection design features of the OSSF are intended to minimize radiation exposure to onsite personnel and are consistent with the guidelines of Regulatory Guide 8.8, "Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable."

The design features of the OSSF at Fermi II are intended to assure that occupational radiation exposures to personnel involved with the operation and maintenance of the facility are maintained as low as is reasonably achievable. All waste handling within the facility will be done remotely, using the bridge crane or with a forklift vehicle (for dry active wastes only). The bridge crane and trolley are equipped with closed-circuit-TV monitoring system cameras to permit remote movement of the waste drums from the OSSF control room. The lighting for the waste storage portion of the OSSF is located on the bridge crane. This eliminates the need to enter the radwaste storage cubicles to replace burned-out lights. All floors and walls where contamination could occur are provided with epoxy coatings.

The shielding for the OSSF is designed to maintain radiation exposure to onsite employees within the limits of 10 CFR Part 20. Shield walls separate the swipe, decontamination, and labeling area from the truck bay. The control room and dry active waste

compactor are also located in shielded areas. The waste storage areas are shielded from the work areas. The OSSF shielding is designed so that all working areas will be in radiation zones of less than 1 mr/hr. Area radiation monitors are located in the truck bay area near the office area and near the dry active waste compactor. These monitors alarm both locally and in the control room.

The OSSF HVAC system is designed so that the air flow is from areas of lesser potential contamination to areas of greater potential contamination. This air is exhausted through HEPA filters and monitored prior to release to the atmosphere. The exhausts from the dry active waste compactor is also filtered before release.

The applicant has estimated that operation of the OSSF will increase the Fermi II plant dose by approximately 2 person-rem a year. The applicant used expected operations and maintenance work schedules, in conjunction with conservative OSSF area dose rates, to arrive at this OSSF annual dose estimate. We find this dose estimate acceptable.

Based on our review of the OSSF as described in the Fermi II FSAR and OSSF Environmental Evaluation, we find Detroit Edison submittal acceptable. The design features of the OSSF are consistent with the guidelines of Regulatory Guide 8.8 and are intended to ensure that radiation exposures are maintained as low

as is reasonably achievable.

3.10 Seismic and Dynamic Qualification of Mechanical and Electrical Equipment

In Supplement No. 2 to the Safety Evaluation Report, the staff stated evaluation findings of the applicant's responses to portion of the open items identified during the SQRT plant site audit. In that evaluation, the staff concluded that while some of the open items were considered satisfactorily resolved others have remained to be open. Since the issuance of the above supplement, the applicant has submitted further information in his letters of December 23, 1981, January 14, January 15, March 18, and August 18, 1982 for the resolution of other open items. Following are conclusions of SQRT's review of all the above applicant's submittals.

I. Generic Items

1. Items Considered Resolved

- (1) Generation of floor response spectra for 5% structure damping and 5% or lower equipment damping

As was stated in SER Supplement No. 2, the staff review of the applicant's reassessment program depends on the staff acceptance of the floor response spectra for 5% structure damping instead of 7% as originally utilized in the reassessment. In Section 3.7.1 of this supplement the staff has concludes that such floor response spectra have been generated, for 5% or lower equipment damping, by using the same time history input motion as required by the staff and are acceptable.

2. Items To Be Resolved (Three Months Before Fuel Load)

- (1) Qualification reassessment using floor response spectra as defined in Section 3.10.I.1.
- (2) Information on equipment hardware modifications
- (3) Confirmation for adequacy of acceleration values used in valve qualification by comparison with the results of as-built piping analysis for all types of valves audited
- (4) SQRT forms for all equipment not qualified or not installed at the time of audit.



## II. Equipment Specific Items

### 1. Items Considered Resolved

- (1) Engine Instrument Panel, RHR Complex (Equipment Item No. 1). The Field Modification Request (FMR #4287) to reflect the necessary change of the clearance provided between the shock monitoring and the support frame has been issued. Office of Inspection and Enforcement is requested to confirm implementation of such change.
- (2) Diesel Generator Service Water Pumps (Equipment Item No. 2). The pump has been adequately reassessed. (Reference: Sargent & Lundy calculation CQD 000235). The maximum shaft deflection and the stress in the column flange bolts were found to be within the allowable limits.
- (3) Floor Mounted Instrument Rack (Equipment Item No. 4). Instrument tubing/pipe supports have been designed and installed per Detroit Edison design specification 3071-525 and Sargent & Lundy Report SL-3159.
- (4) Barton Flow Transmitter (Equipment Item No. 6). Clarification relating to bolt size and plate dimensions as mounted on the panel, as well as details of test mount conditions has been provided by the applicant and found acceptable. Although it was not tested at its resonant frequency of 30 Hz (in 3-directions), the device capability at this frequency was analytically demonstrated by the applicant using the test data obtained for device testing at 33 Hz and the ratio of resonant amplifications of the device at the two frequencies respectively.
- (5) G.E. Relay (Equipment Item No. 7). Through several informal responses provided to the Brookhaven National Laboratory, the staff consultant, by the applicant, the staff has determined that the Fermi 2 panel, H.11-P617, is dynamically similar to the Cofrentes panel, H13-P618, which was qualified by testing. This conclusion is based on the similarity between the two panels in terms of overall dimensions, materials used, and the mounting conditions. As a result, the information about the Fermi 2 panel amplification can be considered the same as the Cofrentes panel.

### 2. Items To Be Resolved (Three Months Before Fuel Load)

- (1) RHR Mechanical Draft Cooling Towers (Equipment Item No. 3)
- (2) Hydraulic Control Unit (Equipment Item No. 5)

In regard to the qualification of torus-attached equipment under the effects of combined seismic and Mark I hydrodynamic loads, the applicant has committed to provide pertinent information for the staff review by March 15, 1983. At that time, the conclusion of the staff review will be reported.

~~The current status of the staff review on the long term operability of Fermi 2 deep draft pumps was reported in SER Supplement No. 3.~~

The staff will continue to review the applicant's overall qualification program and report on the decision of the acceptability of the implementation of the program in a future supplement to the SER.



Containment Systems Branch  
Input for the Safety Evaluation Report  
Supplement for the  
Enrico Fermi Atomic Power Plant, Unit 2  
Docket No. 50-341

3.8.1.3 Additional Mark I Issues

In May 1982, concerns were raised by Mr. John Humphrey involving the Mark III containment design. These issues were originally identified during the time period when Mr. Humphrey was a General Electric (GE) employee involved in the detailed design of the standard Mark III containment design known as the STRIDE package. Mr. Humphrey has since resigned from GE and transmitted his concerns to the owner of the lead Mark III plant, Grand Gulf, Unit 1.

Although the concerns raised by Mr. Humphrey were specifically directed to the Mark III STRIDE design, the staff has examined the applicability of these concerns to the Mark I and Mark II containments. Our preliminary review indicates that several concerns could be applicable to all BWR pressure suppression containments. On this basis, the staff requested all BWR Mark I and Mark II owners to address the issues that may be applicable to their designs.

Notwithstanding the design differences between Mark I and Mark III containment that make many of the issues moot, our preliminary evaluation of the Mark I owners response to these concerns, letter # MFN 138-82 from G. G. Sherwood to D. Eisenhut dated September 24, 1982, indicates that no significant design

deficiencies associated with these concerns have been uncovered and that no corresponding erosion of the existing safety margins has been identified. Based on the above, the staff concludes that the licensing activities of the Enrico Fermi Atomic Power Plant, Unit 2 may proceed as scheduled, pending completion of our ongoing review. We will report our final evaluation of these issues in a future supplement to the SER, prior to the fuel load date.