

**Detroit
Edison**

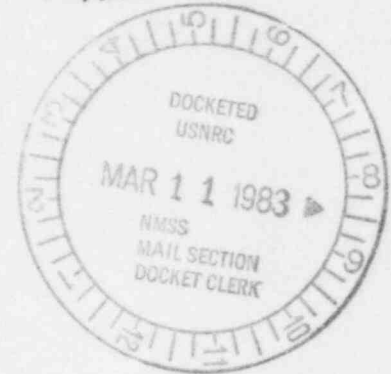
Harry Tauber
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PDR
Return to
39655

February 28, 1983
EF2 - 61,906



Mr. Barry L. Serini
Uranium Process Licensing Section
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Serini:

- References:
1. Enrico Fermi Atomic Power Plant, Unit 2
NRC Docket No. 50-341
 2. Your letter of December 17, 1982 to
Mr. H. Tauber

Subject: Application for a License to Possess
Special Nuclear Material

In response to your December 17, 1982 letter, Detroit Edison has revised the application for a license to receive, possess, repackage for shipment, transfer and store special nuclear materials. Six copies are enclosed. Also enclosed are your December 17 questions and responses as well as a copy of Joseph Oat Report TM-586 to aid in your review. This report contains the requested information pertinent to the high density racks.

Proof of financial protection in accordance with 10 CFR 140 will be submitted upon request at the appropriate time in the application process.

We request that the license be issued on or before March 28, 1983.

Should you have any further questions, please contact Mr. Larry E. Schuerman, (313) 649-7562.

Sincerely,

Harry Tauber

FEE EXEMPT

Attachment

cc: Mr. B. Little
Mr. M. D. Lynch

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DETROIT EDISON RESPONSE TO
NMSS BRANCH REQUEST FOR
ADDITIONAL INFORMATION REQUIRED FOR APPLICATION
TO RECEIVE, POSSESS AND STORE SPECIAL NUCLEAR MATERIAL
AT ENRICO FERMI ATOMIC POWER PLANT, UNIT 2

1. Page 6, Section 1.1.4

Specify the maximum pellet enrichment you require. The maximum enrichment should include manufacturing tolerances in addition to the highest design enrichment.

Response

This license application is for a maximum pellet enrichment of 4.00 ± 0.05 w/o U-235. This information has been added to the license application in Section 1.1.4.

2. Page 6, Section 1.2.1

- a. Describe how the new fuel will be stored in the dryer-separator pool and in the open areas of the refueling floor. Describe potential moderator conditions in the dryer-separator pool.

Response

The requested information has been added to Section 1.2.1 of the license application.

- b. Describe how the shipping containers will be stored in Fermi 1 Warehouse A. Please specify the stack height of the storage array, the array size, and whether the fuel assemblies will be stored in the inner metal shipping containers or both the inner metal container and in the wooden overpacks.

Response

The requested information has been added to Section 1.2.1 of the license application.

2. Page 6, Section 1.2.1 (Cont'd.)

- c. Provide justification for the nuclear criticality safety for the array size(s) used.

Response

Criticality analyses for the RA series shipping containers are summarized in General Electric's RA application submittal. This application was approved by the NRC in March, 1982.

Refer to: General Electric SNM-1097
License Application, February 24, 1982
Docket No. 71-4986
NRC Certificate of Compliance 4968
Amendment T-15

3. Page 8, Section 1.2.3.a

Demonstrate that mist densities resulting from operation of the cask washdown system or from the fire suppression system will not moderate the fuel assembly array sufficiently to cause an inadvertent criticality accident in the New Fuel Storage Vault.

Response

The new fuel storage vault is covered by fireproof shield plugs. These plugs will be removed only when access to the vault is required. Administrative controls will prohibit the operation of the cask washdown system when the covers are removed. In addition, the procedural controls recommended by General Electric in SIL-152 have been implemented to reduce the remote probability for inadvertently establishing critical conditions in the new fuel storage vault.

4. Page 9, Section 1.2.3.b

- a. Describe the neutron poison boraflex to be used in the Spent Fuel Racks. Include the areal density of Boron-10 in the boraflex, the B_4C loading, and the dimensions of the B_4C plates.

Response

The requested information is contained in Joseph Oat Report TM-586. A summary of this information has been added to the license application in Section 1.2.3.b.

- b. Describe the location(s) of the boraflex poison in the storage array.

Response

The requested information is contained in Joseph Oat Report TM-586. A summary of this information has been added to the license application in Section 1.2.3.b.

5. Page 18, Sections 2.1.1 and 2.1.2

- a. Please clarify whether the General Supervisor of Health Physics has the authority to act independently in the event of an emergency or must all of his decisions be approved by the Radiation Protection-Chemical Engineer.

Response

The General Supervisor, Health Physics has the authority to act independently in the event of an emergency.

- b. Provide the responsibilities and the minimum technical qualifications for the key positions having radiation safety responsibilities.

Response

The responsibilities, minimum technical qualifications, experience and training of all key personnel are described in Subsection 13.1.4.3 of the Fermi 2 FSAR. The General Supervisor, Health Physics, may assume the responsibilities of the Radiation Protection-Chemical Engineer in his absence.

- c. Identify the position responsible for developing the detailed plant procedures for receipt of radioactive material, including fuel. Identify the position(s) responsible for approving the procedures and changes thereto.

Response

See response to 5a. The Reactor Engineer is responsible for the procedures involving the handling and control of nuclear fuel. Changes to these procedures require the review and approval of the Onsite Safety Review Organization (OSRO) as specified in FSAR Section 13.5.

6. Page 20, Section 2.2.2

- a. Describe the New Fuel Storage Vault; include the array size, shape, and minimum center-to-center spacing between fuel assemblies in both the X- and Y- directions and the minimum distance from the fuel assemblies to the concrete floors and walls. If there are steel guide tubes around each assembly that are required to ensure safety of the array, describe the steel tubes (e.g., inner and outer dimensions).

Response

This information is contained in Subsection 9.1.1.2.2 of the Fermi 2 FSAR. The information has also been added to Section 2.2.2 of the license application.

- b. Provide the results of k_{eff} calculations for both the New Fuel Storage Vault and the Fuel Storage Pool under optimum conditions of water-mist density and specify the optimum mist density for the maximum k_{eff} of the array containing fuel assemblies having the maximum U-235 enrichment requested under this license.

Response

The requested information has been added to Section 2.2.2 of the license application.

- c. Provide the responsibilities and the minimum technical qualifications for the key positions having fuel handling and nuclear criticality safety responsibilities.

Response

See response to 5a.

- d. Describe the array in the Fuel Storage Pool; include the array shape and size, the minimum center-to-center spacing between assemblies in both X- and Y- directions and the minimum distance of the assemblies to the concrete walls and floor.

Response

The requested information has been added to Section 2.2.2 of the license application.

- e. If the nuclear criticality safety of the array in the Fuel Storage Pool depends on the boraflex poisons, describe the quality assurance program to assure that the boraflex meets specifications, is installed properly, the method used to assure its continued presence, and the minimum frequency for checking it.

Response

The requested information has been added to Section 2.2.2 of the license application.

7. Page 21, Section 2.2.4

- a. Explain the application of the criterion of having up to three fuel assemblies outside normal storage locations or the shipping containers and their spacing of 12 inches from other fuel. Apparently no more than two fuel assemblies are at the inspection station (see page 10, item f).

Response

The requested information has been added to Section 2.2.4 of the license application.

- b. Provide the basis for nuclear criticality safety of the group of 3 fuel assemblies at 12 inches edge-to-edge from all other fuel.

Response

The criterion of having up to three fuel assemblies outside of a normal storage array was provided by General Electric. This criterion is based on analyses which establish the maximum allowable array of the design basis fuel assemblies, in any configuration, which maintain $K_{eff} \leq 0.90$.

8. General

- a. Confirm that safety related records shall be kept for at least two years unless longer periods are specified in 10CFR20.

Response

The requested information has been added to the license application in Section 1.6.

- b. Describe the airborne concentration monitoring program in the facility. If not applicable, please so state.

Response

The requested information has been added to the license application in Section 2.1.2.e.

- c. Describe the procedure followed for disposing of radioactive waste which was produced as a result of licensed activities. If not applicable, please so state.

Response

The requested information has been added to the license application as Section 1.7.