

**Detroit  
Edison**

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July 29, 1981  
EF2 - 54,197

Mr. Robert L. Tedesco  
Assistant Director for Licensing  
Division of Licensing  
U. S. Nuclear REGulatory Commission  
Washington, D. C. 20555

Dear Mr. Tedesco:

Reference: Enrico Fermi Atomic Power Plant, Unit 2  
NRC Docket No. 50-341

Subject: Training for Mitigating Core Damage

The attachment is submitted in response to your letter  
to Mr. Harry Tauber dated July 7, 1981.

Sincerely,



W. F. Colbert  
Technical Director  
Fermi 2 Project

WFC:jl  
Attachment

cc: Mr. L. L. Kintner  
Mr. B. Little

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TRAINING FOR SERIOUS ACCIDENTS BEYOND D.B.A.

In accordance with NUREG-0737, NUREG-0660, Appendix H of the Enrico Fermi 2 FSAR, and the March 28, 1980 NRC Staff Directive (Denton letter), Detroit Edison has established a program to train its personnel in controlling and mitigating accidents beyond the Design Based Accident (DBA). This program will meet both the intent and requirements of the above directives, and the recommendations of the Institute of Nuclear Power Operation (INPO) document titled "Training Guidelines for Recognizing and Mitigating the Consequences of Severe Core Damage", dated June 30, 1980.

The Detroit Edison program is composed of three distinct phases: (a) Systems Qualification Program for those systems affecting maintenance of safe conditions; (b) Theoretical training in subjects which provide the background necessary to evaluate and respond to varying reactor statuses; (c) A course in Mitigating Core Damage where all the information and concepts are brought together and applied in an accident environment.

Table 1 lists those systems whose qualification programs include their application in accident conditions. Supplemental instruction in the theory behind the operation of these systems is provided. Precautions and limitations associated with these systems, and consequences of improper utilization of same are covered in detail. Tests assess understanding of both normal utilization and accident operation of the components.

Table 2 provides a listing of theoretical courses which are being provided. Instruction here is based upon giving operations and other personnel the necessary background to be able to evaluate information which will be available during and after an accident. The material is directly related to EF2 where that is appropriate.

Table 3 lists the topics to be presented in an integrated course called Mitigation of Core Damage. The goal of this course is to provide focus and training in the accident environment. Topics, both theoretical and specific, which are applicable to accident conditions are introduced and integrated with previously mastered materials to produce the capability to make correct analyses and timely response(s).

At this time, Detroit Edison is evaluating available contract courses to fulfill the criteria of Table 3. Due to the differences in emphasis which the various vendors place on the course topics, defining the hours which will be spent on each topic is inapplicable, until a final decision for implementation is made. It should be noted, however, that all material will be presented, as necessary, to provide effective and complete training.

TABLE 1

SYSTEMS TRAINING

- o Residual Heat Removal System (RHR)
  - Low Pressure Coolant Injection (LPCI)
  - Containment Cooling Mode
  - Containment Spray Modes
  - Steam Condensing Mode
  - Head Spray Mode
  - Shutdown Cooling Mode
- o Automatic Depressurization System (ADS)
- o Core Spray Systems (CSS)
- o High Pressure Coolant Injection (HPCI)
- o Standby Liquid Control (SBLC)
- o Process Computer Training
- o Containment Atmosphere Control
- o Instrumentation and Controls
- o Reactor Core Isolation Cooling (RCIC)
- o Radiation Monitor System

TABLE 2

THEORETICAL TRAINING

- Transient & Accident Analysis (STA's)
- Coolant Chemistry
- Infrequent, Abnormal and Emergency Plant Operations
- Thermohydraulics, Heat Transfer and Fluid Flow
- Emergency Plan
- Control Room Management
- High Radiation Sampling

TABLE 3

MITIGATION OF CORE DAMAGE

1. Core Cooling Mechanics
2. Potentially Damaging Operating Conditions
3. Gas/Steam Binding on Core Cooling
4. Recognizing Core Damage
5. Hydrogen Hazards During Accident Conditions
6. Monitoring Critical Parameters During Accident Conditions
  - Incore Instrumentation
  - Excore Instrumentation
  - Process Computer
  - High Radiation Sampling
7. Radiation Hazards and Radiation Monitor Response
8. Criteria for Operation and Cooling Mode Selection
9. Infrequent Abnormal and Emergency Operating Procedures
10. Thermodynamics and Heat Transfer
11. Recriticality Potential
12. Emergency Plan