Wayne H. Jens
Vice President
Nuclear Operations

Detroit Edison

Fermi-2
6400 North Dixie Highway
Newport, Michigan 48166
(313) 586-4150

February 12, 1985
NE-85-0277

Director of Nuclear Reactor Regulation
Attention: Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Youngblood:

Reference: 1) Fermi 2
NRC Docket No. 50-341
2) Letter dated January 11, 1985 from W. H. Jens to J. G. Keppler, "Post Fuel Load Preoperational Testing"

Subject: Request for Revision to Draft Technical Specifications

Detroit Edison requests a change to the draft Fermi 2 Technical Specifications as indicated in Attachment 1.

Concerning the proposed change to specification 3.7.2, a recent component failure highlighted the need for a more comprehensive set of action statements. The Standard Technical Specifications for the control room emergency filtration system are based on a design having independent subsystems. As noted in section 9.4.1 of the staff's SER for Fermi 2, the Fermi 2 design has redundant active components but a single recirculation filter train and single makeup filter train. This design is shown schematically on FSAR Figure 9.4-2.

For a design having two independent subsystems the Standard Technical Specifications require an inoperable subsystem to be repaired within 7 days or the unit must be shut down. To achieve a comparable response for the Fermi 2 design, proposed action statement b.2 requires an inoperable redundant component to be repaired in 7 days or the unit must be shut down. This statement recognizes that some components other than the fans are also redundant. Proposed action b.1 requires the unit to be shut down within 12 hours with nonredundant portions of the system inoperable. Proposed action statement c.1 accomplishes the same purpose for Operational Conditions 4 and 5.

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1/40

The proposed change to surveillance 4.7.2.b clarifies the heater being referred to. The proposed change to surveillance 4.7.2.c.1 parallels the wording of surveillances 4.7.2.f and 4.7.2.g.

The proposed change to surveillance 4.7.2.e.1 was made necessary by the results of preoperational testing which indicated a pressure drop of 4.8 inches across the recirculation filter train with clean filters. It also clarifies that the flow rate through the makeup filter train is 1800 cfm rather than 3,000.

Surveillance 4.7.2.e.2 has been modified to reflect the fact that the positive pressure in the control room is achieved by air flow through the emergency makeup air filter train. In addition, surveillance 4.7.2.e.4 is clarified to indicate that <u>each</u> heater dissipates 12 kW.

The proposed addition of footnote *** is consistent with a proposed deferral of preoperational testing of the Control Center HVAC System as requested in reference 2. Since no irradiated fuel will exist until this condition is achieved, the function of the system is not needed.

At the request of Mr. Gary Staley of the Environmental and Hydrologic Engineering Branch, Detroit Edison has agreed to modify specification 3.7.3 as indicated in Attachment 1 to include the location and elevation of each survey point on the shore barrier.

Finally, a minor typographical error was noted on page 3/4 6-34. It is requested that these proposed changes be reviewed and incorporated on a schedule to support fuel load.

I hereby certify that these proposed changes reflect the plant, Final Safety Analysis Report and the staff's Safety Evaluation Reports in all material respects.

Attachment 2 consists of a revision to the Final Safety Analysis Report which will be incorporated in a future amendment. It reflects a revised analysis of the time required to restore a negative pressure in the secondary containment following a design-basis LOCA. This analysis supports the technical specification on normal secondary containment pressure as discussed previously with Mr. John Lane of the Containment Systems Branch.

If you have any further questions please contact Mr. O. K. Earle at (313) 586-4211.

Sincerely,

Wayne H. Jens

Attachments

cc. Mr. P. M. Byron
Mr. J. C. Lane
Mr. M. D. Lynch
Mr. R. L. Perch
Mr. G. B. Staley
Document Control Desk, USNRC
Washington, D.C. 20555

I, WAYNE H. JENS, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

Wayne H. Jens

WAYNE H. JENS
Vice President
Nuclear Operations

On this 12th day of February 1985, before me personally appeared Wayne H. Jens, being first duly sworn and says that he executed the foregoing as his free act and deed.

Marcia Buck

Notary Public

MARCIA BUCK
Notary Public, Washtenaw County, MI
My Commission Expires Dec. 28, 1987
Acting in Monroe County, Mi

Attachment 1

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

FINAL DRAFT

LIMITING CONDITION FOR OPERATION

3.7.2 The control room emergency filtration system shall be OPERABLE with the system composed of:

a. The emergency makeup air filter train.

b. The emergency recirculation air filter train.

c. Two recirculation fans.

d. Two return and supply fans.

e. A flowpath capable of:

1. Recirculating control room air.

2. Supplying emergency makeup air to the control room.**

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2***, 3***, 4***, 5***, and *

ACTION:

a. With the control room air temperature greater than 95°F but less than 105°F, restore the control room air temperature to less than or equal to 95°F within 12 hours or go to a 4 hour operating shift.

b. In OPERATIONAL CONDITION 1, 2, or 3 ~~with one control room emergency filtration system recirculation fan and/or one return and supply fan inoperable, restore the inoperable fan(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.~~

replace with insert from next page

c. In OPERATIONAL CONDITION 4, 5 or *:

1. ~~With one control room emergency filtration system recirculation fan and/or one return and supply fan inoperable, restore the inoperable fan(s) to OPERABLE status within 7 days or initiate and maintain operation of the system with OPERABLE fans in the recirculation mode of operation.~~

2. With the control room emergency filtration system inoperable, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment and operations with a potential for draining the reactor vessel.

d. The provisions of Specification 3.0.3 are not applicable in Operational Condition *.

SURVEILLANCE REQUIREMENTS

4.7.2 The control room emergency filtration system shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 95°F.

*When irradiated fuel is being handled in the secondary containment.
**Not applicable in the chlorine mode of operation.
*** NOT APPLICABLE PRIOR TO ACHIEVING CRITICALITY IN OPERATIONAL CONDITION 2. AFTER INITIAL FUEL LOAD.

Action b. (insert)

1. With one of the above required filter trains or flow paths inoperable be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. With a recirculation, return or supply fan; emergency makeup inlet air heater; damper; or other required redundant component inoperable, restore the inoperable component to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Action C.1 With a recirculation, return or supply fan; emergency makeup inlet air heater; damper; or other required redundant component inoperable, restore the inoperable component to OPERABLE status within 7 days or initiate and maintain operation of the system in the recirculation mode of operation.

Att 1

FINAL DRAFT

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days on a STAGGERED TEST BASIS by initiating fan operation from the control room, and establishing flow through the HEPA filters and charcoal adsorbers, and verifying that the system operates for at least 10 hours with the ~~heaters~~ associated emergency makeup inlet air heater OPERABLE.

c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the system satisfies the in-place penetration testing acceptance criteria of less than 1.0% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, ~~and the~~ while operating the system at a flow rate ~~is~~ of 1800 cfm ± 10% through the makeup filter and 3000 cfm ± 10% through the recirculation filter.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%; and

3. Verifying a system flow rate of 3000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%.

e. At least once per 18 months by:

1. Verifying that the pressure drop across the recirculation train and across the makeup train combined HEPA filters and charcoal adsorber banks ~~are each~~ is less than 8 inches and 6 inches water gauge respectively ~~while operating the system at a flow rate of 3000 cfm ± 10%.~~ Through the recirculation filter train and 1800 cfm ± 10% through the makeup filter train.

2. Verifying that the system will automatically switch to the recirculation mode of operation on each of the below actuation test signals and verifying that on any one of the below recirculation mode actuation test signals, the system automatically switches to the recirculation mode of operation, the isolation valves close within 5 seconds and the control room is maintained at a positive pressure of at least 0.125 inch water gauge relative to the outside atmosphere during system operation at a flow rate less than or equal to ~~3000~~ 1800 cfm through the emergency ~~recirculation~~ makeup air filter:

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FINAL DRAFT

SURVEILLANCE REQUIREMENTS (Continued)

a) Control center inlet radiation monitor.
b) Reactor Building ventilation exhaust radiation monitor
c) Radwaste Building ventilation exhaust radiation monitor.
d) Turbine Building ventilation exhaust radiation monitor.
e) Fuel pool ventilation exhaust radiation monitor.
f) Low reactor water level.
g) High drywell pressure.

3. Verifying that on the chlorine mode actuation signal, the system automatically switches to the chlorine mode of operation, the isolation valves close within 4 seconds, and a minimum of 1200 cfm emergency recirculation is established.

4. Verifying that each of the emergency makeup ~~filter train~~ inlet air heaters dissipate 12.0 ± 2.0 kW when tested in accordance with ANSI N510-1980.

f. After each complete or partial replacement of a train HEPA filter bank by verifying that the train HEPA filter bank satisfies the inplace penetration and bypass leakage testing acceptance criteria of less than 1.0% in accordance with ANSI N510-1980 while operating the system at a flow rate of 1800 cfm ± 10% for the makeup train and 3000 cfm ± 10% for the recirculation train.

g. After each complete or partial replacement of a train charcoal adsorber bank by verifying that the train charcoal adsorber bank satisfies the inplace penetration and bypass leakage testing acceptance criteria of less than 1.0% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 1800 cfm ± 10% for the makeup train and 3000 cfm ± 10% for the recirculation train.

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FINAL DRAFT

3/4.7.3 SHORE BARRIER PROTECTION

LIMITING CONDITION FOR OPERATION

3.7.3 The shore barrier shall be structurally sound and capable of limiting wave action as intended. The shore barrier shall be maintained such that the elevation of each survey point listed in Table 3.7.3-1 is not less than 1.0 foot below the elevation listed in the table.

APPLICABILITY: At all times.

ACTION:

With the elevation of one or more survey points different by more than 1 foot from the ~~as-built~~ elevation determined during the 1984 survey (see Table 3.7.3-1), prepare and submit to the Commission within 90 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

a. Explanation of how the degradation occurred and if the shore barrier is continuing to degrade;

b. A planned course to repair the damage and a schedule for accomplishing the repair; ~~and~~

c. Evaluation of and justification for continued plant operation; and

d. The current elevation of each survey point shown in Table 3.7.3-1.

SURVEILLANCE REQUIREMENTS

4.7.3 The shore barrier shall be determined to be structurally sound and capable of limiting wave action by visual inspection and instrument survey:

a. At least once per 12 months.

b. Within 7 days after a severe storm in which the crest elevation of incident waves at the shore line exceeds the top of the shore barrier (583'0").

TABLE 3.7.3-1

SURVEY POINTS FOR SHORE BARRIER

Survey Point	Location North-South	Location East-West	December 1984 Control Elevation
1A	N6807	E5945	580.05
1B	N6803	E5957	576.99
1C	N6803	E5972	575.10
2A	N6824	E5947	581.63
2B	N6825	E5959	581.01
2C	N6826	E5968	579.02
2D	N6822	E5976	577.65
3A	N6901	E5944	581.52
3B	N6898	E5958	579.89
3C	N6905	E5972	577.08
4A	N7020	E5949	580.92
4B	N7023	E5960	580.59
4C	N7023	E5967	578.58
4D	N7024	E5974	576.02
5A	N7119	E5947	582.09
5B	N7122	E5957	581.45
5C	N7120	E5964	578.72
5D	N7121	E5974	575.52
6A	N7222	E5931	582.55
6B	N7223	E5950	582.70
6C	N7215	E5958	581.22
6D	N7228	E5966	578.59
6E	N7233	E5973	575.59
7A	N7328	E5946	582.22
7B	N7322	E5958	581.18
7C	N7317	E5966	578.99
7D	N7328	E5974	575.09
8A	N7422	E5950	582.16
8B	N7418	E5957	581.40
8C	N7429	E5963	578.12
8D	N7428	E5974	576.53

TABLE 3.7.3-1 (Continued)

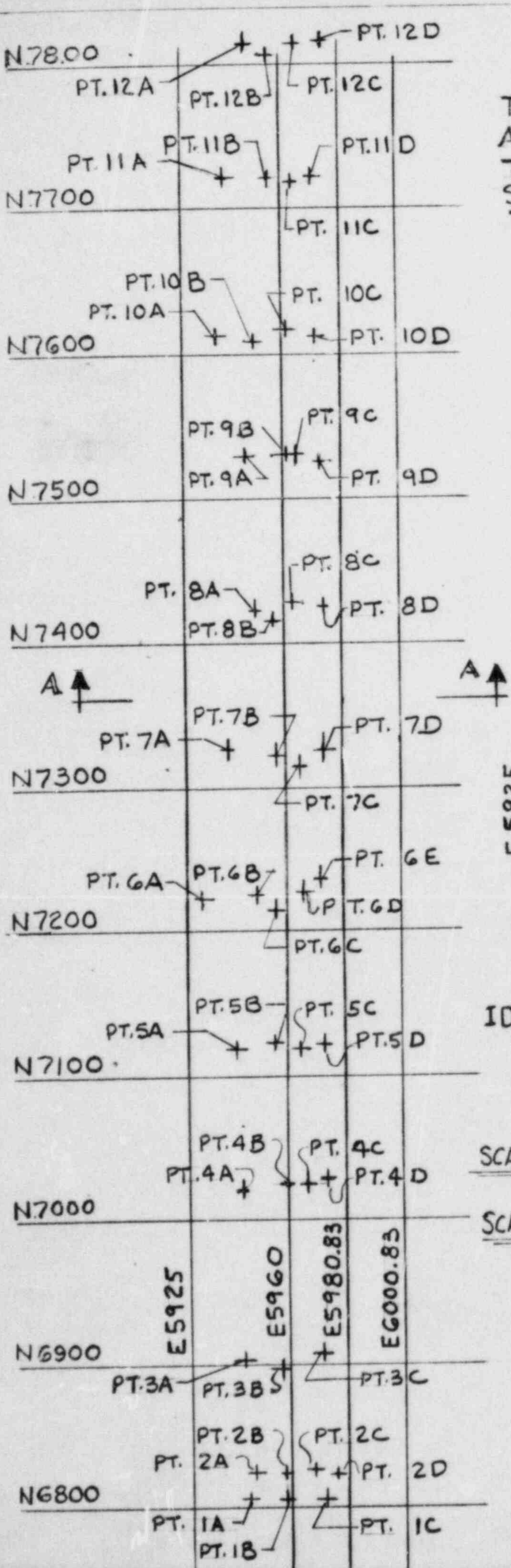
SURVEY POINTS FOR SHORE BARRIER

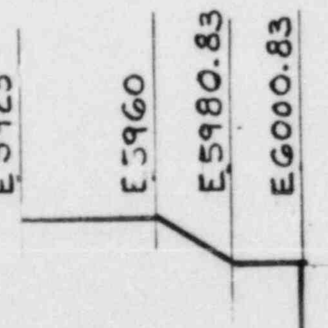
9A	N7529	E5948	583.04
9B	N7531	E5961	582.10
9C	N7531	E5965	579.91
9D	N7526	E5973	575.13
10A	N7612	E5937	583.85
10B	N7610	E5950	582.21
10C	N7618	E5961	582.56
10D	N7616	E5972	576.53
11A	N7721	E5940	583.15
11B	N7721	E5956	582.08
11C	N7718	E5963	579.82
11D	N7722	E5971	576.43
12A	N7814	E5949	581.66
12B	N7809	E5955	581.11
12C	N7814	E5965	578.88
12D	N7815	E5975	577.81

1. Measuring reference points are anchored into the capstones using center notched self-drilling bolts.

2. See Figure B3/4.7.3-1 for location sketch.

THE PURPOSE OF THIS PLAN AND SECTION IS TO ILLUSTRATE THE ARRANGEMENT OF THE SURVEY POINTS LISTED IN TABLE 3/4.7.3-1





SECTION A-A

IDEALIZED PROFILE

SCALE 1" = 100' ↕

SCALE 2" = 100' ⟶

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

VALVE FUNCTION AND NUMBER	MAXIMUM ISOLATION TIME (Seconds)
B. Remote-Manual Isolation Valves[e] (Continued)	
28. Post Accident Sampling Isolation Valves (Continued)	NA
c. Gaseous Sample Return Valves	
P34-F408 (V13-7369)	
P34-F410 (V13-7379)	
d. Pressurized Reactor Coolant Sample Suction Valves	
P34-F401A (V13-7360)	
P34-F401B (V13-7361)	
e. Liquid Sample Return Valves[b]	
P34-F407 (V13-7368)	
P34-F409 (V13-7378)	
29. Nitrogen Inerting Instrumentation Valve	
T48-F451 (V4-2185)	NA
30. ~~Group 19~~ Torus To Secondary Containment Vacuum Breaker Isolation Valves	
T23-F410 (V21-2016)	NA
T23-F409 (V21-2015)	NA
C. Manual Isolation Valves	
1. Drywell Condensate Supply Header Inboard Isolation Valve[q]	NA
P11-F126 (V8-3120)	
2. Drywell Control Air and N_2 Outboard Isolation Bypass Valve(q)	NA
T49-F007 (V4-2172)	
3. N_2 to Drywell Outboard Isolation Bypass Valve(q)	NA
T49-F016 (V8-4140)	

Attachment 2

SECONDARY CONTAINMENT PRESSURIZATION
DURING DESIGN-BASIS LOSS-OF-COOLANT ACCIDENT

The standby gas treatment system (SGTS) is designed to maintain a secondary containment pressure of -0.25 inch of water, thus ensuring that any airborne radioactive material in the secondary containment is not released to the surrounding atmosphere without passing through the SGTS filters. In the event of a design-basis loss-of-coolant accident (DBA-LOCA), loss of offsite power is assumed; consequently, there is a delay period from the start of the event to the activation of the SGTS and the emergency area coolers.

During the delay period, the secondary containment pressure increases ~~above -0.25 inch of water~~ because of heat generated by emergency equipment and other sources. Upon initiation of the SGTS and emergency area coolers, a short period of time is required to reduce the secondary containment pressure to a negative pressure at or below -0.25 inch of water.

The purpose of this calculation is to generate the secondary containment pressure response during a DBA-LOCA and to determine the period of time when the secondary containment pressure is above -0.25 inch of water. The method of analysis and the assumptions and results are described in the following paragraphs. 58

METHOD OF ANALYSIS AND ASSUMPTIONS

The computer code HVAC (Reference 1) was used to generate the secondary containment pressure response.

All major assumption are given below:

1. No credit was taken for exfiltration from the secondary containment.

2. Infiltration to the secondary containment was included in the pressure response analysis.

3. No heat transfer was allowed to the outdoor atmosphere.

4. Heat transfer to interior secondary containment walls, floors, and ceilings was included.

5. Heat transfer from the torus room to the secondary containment is based on flow through the pressure-relieving doors in the corner room basement walls.

6. Only one SGTS filter train is available with a minimum volumetric flow rate of 3800 cfm.

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7. Offsite power is lost at the start of the DBA-LOCA event.

8. The activation of the SGTS is delayed by 33 seconds, and the activation of the emergency area coolers is delayed by 38 seconds (see FSAR Table 8.3-5).

9. The residual heat removal (RHR) pump rooms and the core spray and reactor core isolation cooling (RCIC) pump rooms in the reactor building subbasement are treated separately from the main secondary containment volume. These rooms have their own emergency coolers to handle emergency equipment and lighting heat loads. Because the heat loads and cooling are confined to partially enclosed volumes at the very bottom of the secondary containment, the area coolers will absorb the heat loads within the confines of the corner rooms.

10. The heat loads from the RHR, core spray, and RCIC pump rooms will not affect the main secondary containment volume before the initiation of the area coolers. The RHR pumps are activated 13 seconds after the start of the DBA-LOCA event (see FSAR Table 8.3-5). The emergency coolers are activated at 38 seconds. For the heat loads to affect the main volume, the pumps, piping, and subsequently the corner room atmospheres must heat up. After the corner room atmospheres have heated up, the only mode of heat transfer to the main volume is by natural convection. Considering that natural convection is a rather slow process, no significant heat transfer to the main secondary containment volume from the corner rooms is expected during the 25 seconds from the initiation of the RHR pumps to the initiation of emergency cooling.

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11. An outdoor temperature of -10°F was used in the analysis.

12. An initial secondary containment pressure of −0.125 inches water guage was assumed.

RESULTS

The secondary containment response due to a DBA-LOCA is shown in Figure 1. During the first 33 seconds, the pressure increases to a slightly positive value. With the activation of the SGTS at 33 seconds and the activation of the area coolers at 38 seconds, the pressure decreases to near atmospheric.

At 36 seconds, pressure-relieving doors on the common wall between the torus room and the corner rooms open and allow heated torus room air to enter the rest of the secondary containment. This step input of heat into the secondary containment appears as a sharp pressure spike on Figure 1.

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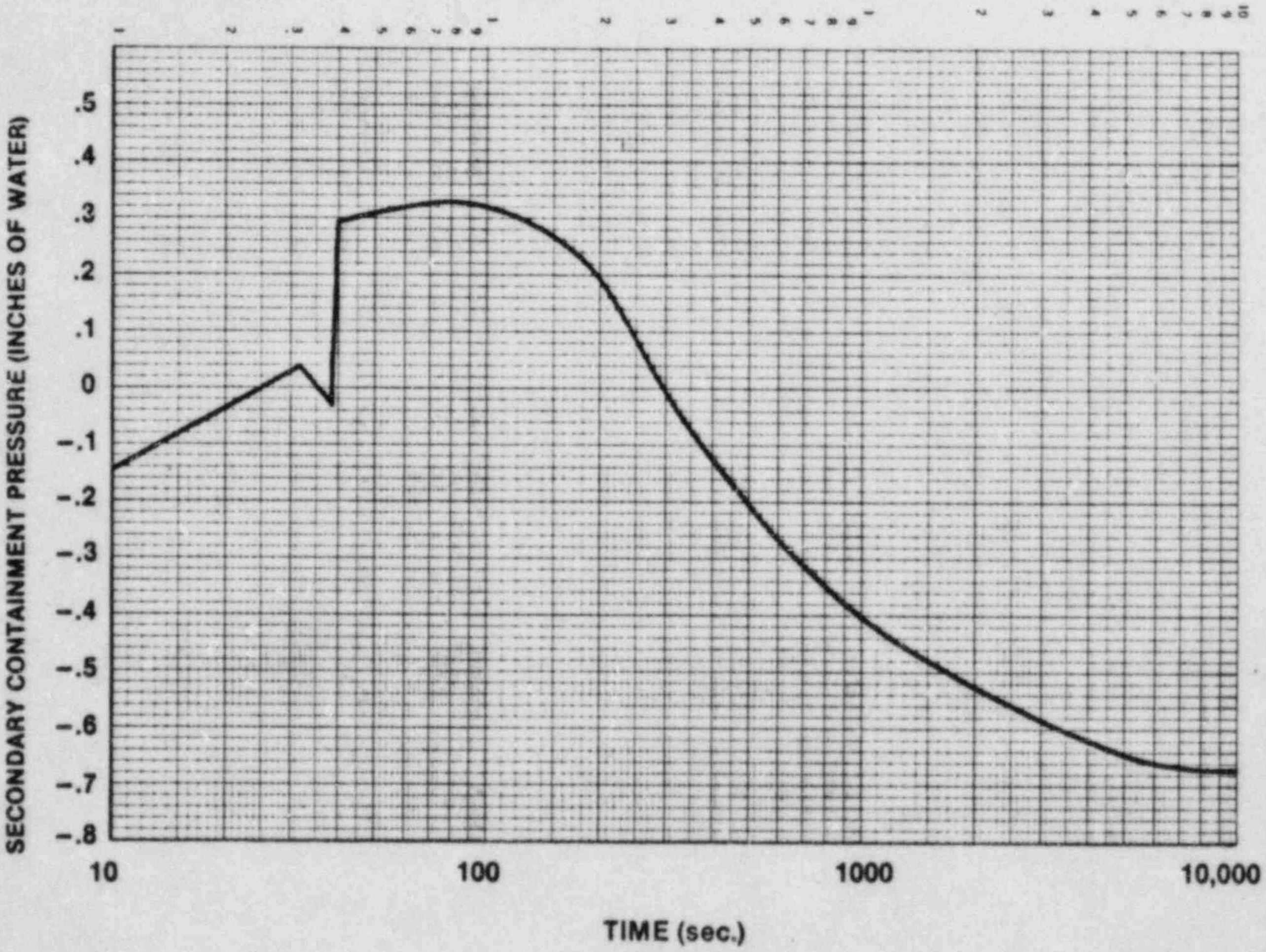

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ENRICO FERMI ATOMIC POWER PLANT UNIT 2 FINAL SAFETY ANALYSIS REPORT
FIGURE 1 SECONDARY CONTAINMENT RESPONSE DUE TO A DBA-LOCA

AMENDMENT 58 — JULY 1984

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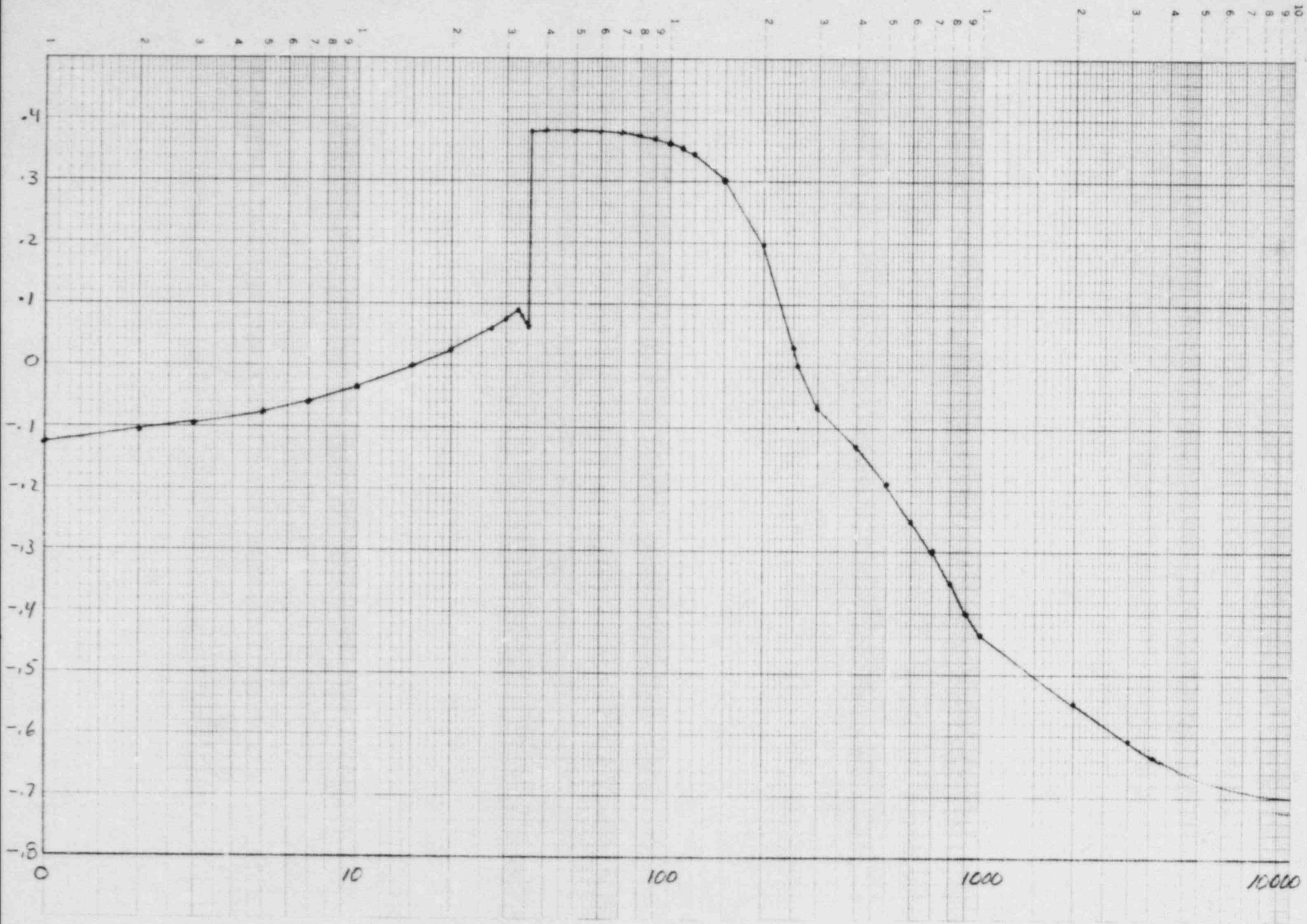
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6010



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