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**Detroit
Edison**

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March 4, 1985
NE-85-0365

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) Detroit Edison to NRC Letter,
"Qualification of Fire Doors",
NE-85-0030, January 23, 1985.
- (3) Detroit Edison to NRC Letter, "Additional
Fire Protection Information", NE-85-0275,
February 4, 1985.
- (4) NRC to Detroit Edison Letter, "Fire
Protection Deviation Requests for the Fermi
2 Facility", March 1, 1985.

Subject: Resolution of Certain Fire Protection Issues

This letter contains additional information to provide closure to certain fire protection issues discussed in references (2), (3), and (4).

Fire Doors

Except for door R3-13, Detroit Edison commits to have Underwriter's Laboratory (UL) affix UL labels to the subject unlabeled fire door assemblies or replace the subject door assemblies with ones approved and labeled by an independent testing laboratory.

Detroit Edison will proceed as expediently as possible to accomplish the above, considering the fact that UL is an independent laboratory and Edison cannot dictate

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their schedule. Edison considers that sufficient documentation was provided in reference (2) for all fire doors except R3-13 and R3-20 to provide reasonable justification for the interim period that the doors will perform their intended function.

With respect to fire door R3-20, this door will be replaced by a labeled door. Until it is, interim justification is provided by the deviation request provided in reference (3), which documents the fire resistive capabilities of the door. In addition, since these capabilities did not fully comply with UL standards, Detroit Edison commits to patrolling the stairwell in the northeast corner of the control room on an hourly basis with a qualified fire watch. This is consistent with Technical Specification 3.7.8 for deficient fire rated assemblies.

With respect to fire door R3-13, Attachment A to this letter is a revised permanent deviation request from the one submitted with the reference (3) letter. As you are aware, door R3-13 is larger than Chicago Bullet Proof doors currently listed by UL.

Fire Detectors

Except for the torus room, with respect to the permanent deviations requested in Attachment B to the reference (3) letter, Detroit Edison commits to installing additional detectors or relocating detectors to meet the requirements of NFPA 72E or providing additional justification to the satisfaction of the NRC staff that equivalent detection capability exists. Detroit Edison believes that sufficient justification is provided in reference (3) for granting an interim deviation until these actions are completed. These actions will be completed no later than June 30, 1985, consistent with the interim deviation requests for detectors in reference (3). We understand that the deviation request for the torus room is acceptable.

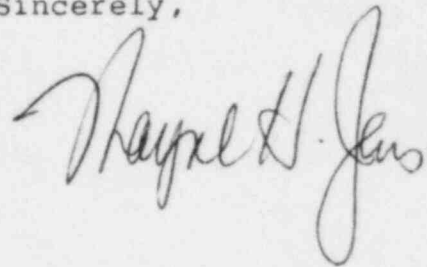
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Hydrostatic Testing of Fermi 2 Fire Protection Yard Piping

As discussed in Attachment C of reference (3), the hydrostatic test results of the fire protection yard piping for Fermi 2 did not explicitly meet the requirements of NFPA 24 for new piping. As also stated in reference (3), since the system is ten years old, Edison considered the test results acceptable. However, to better quantify the leakage test results from the earlier hydro, Detroit Edison committed to NRC Region III to reperform the hydro prior to June 30, 1985. The maximum acceptance criteria in the new hydro will be 264 gallons of leakage in two hours at a pressure of 200 psi. The justification for this acceptance criteria is contained in Attachment B and is based on NFPA 24 and the Factory Mutual Handbook. Detroit Edison commits to take those actions necessary for its fire protection yard piping to meet these acceptance criteria. It should be noted that the results of the old hydro referred to in reference (3) also satisfies this acceptance criteria. This fact combined with the commitment to perform a new hydro and meet justified acceptance criteria provide the necessary assurance that Detroit Edison's fire protection yard header at Fermi 2 will meet its design requirements.

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

Sincerely,



cc: Mr. P. M. Byron
Mr. M. D. Lynch
Mr. C. B. Ramsey (NRC-R111)
Mr. L. A. Reyes (NRC-R111)
Mr. J. F. Stang
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ATTACHMENT A

Evaluation of Fire Door R3-13

1.0 PROBLEM STATEMENT

Test No. 2* was a 3 hour fire test for door R3-13 which has a transom, and is 3'8" wide which exceeds the width limits of listed doors by this manufacturer. This door met the conditions of acceptance of UL10B for a 1 1/2 hour rating.

1.1 AREA DESCRIPTION

Door R3-13 separates the control room from the Turbine Bldg. extension, floor elevation 643'-6". This security door is installed in a 3 hour fire resistance wall on the south side of the control room. This door is located approximately 25ft from the Turbine Building 3rd floor. (Refer to sketch No. 1).

1.2 FIRE HAZARDS ANALYSIS

Fixed combustibles in the Turbine Building extension is negligible (less than 1 lb/sq.ft.). The Turbine is located approximately 70 ft away from R3-13 behind a concrete shield wall, (approx. 20ft high). The lube oil storage rooms for the turbine are located on the first and second floor of the turbine building in fire rated rooms with automatic sprinkler protection. Presently fixed combustibles located north of column 12 between columns K-N are negligible (less than 1 lb/sq. ft. consisting of miscellaneous panels and wiring). Transient combustibles could be present during turbine outages, but they will be controlled administratively. Typically they would be located on the turbine floor east of column K, which is approximately 40ft from door R3-13.

1.3 FIRE PROTECTION

The control room has ionization smoke detectors installed above the drop ceiling and in the control room panels. The control room is manned at all times. Halon and CO₂ portable fire extinguishers are located on the north and south walls of the control room. The turbine building extension contains one hose station and two portable fire extinguishers (CO₂ and dry chemical). Ionization smoke detection is provided in the turbine building extension and adjacent area.

1.4 SAFE SHUTDOWN EQUIPMENT

The control room contains safe shutdown panels that have been protected to minimize exposure damage.

The turbine building extension contains no safe shutdown equipment.

1.5 CONCLUSION

Door R3-13 is considered adequate for its installation in a 2 hour rated fire wall assembly. Because the Turbine Building extension contains no fixed combustible material, and transient combustibles are maintained by administrative controls, a two hour assembly provides adequate protection.

*UNDERWRITERS LABORATORIES INC.; Project 83NK23366, File NC699, Report NC6992 "Fire and Hose Stream Test of Security Doors RB3-13 and RB3-20".

Attachment B

Criteria for Fire Protection Yard Header Hydrostatic Test

Test Pressure

The test pressure of 200 psig is based on interpretation of NFPA 24 as well as background in ANSI B31.1 and ASME B & PV hydro testing. It should be noted that on page 5-12 of the Factory Mutual Handbook (reference 1) there is a discussion of hydrostatic pressure testing of new systems. The first sentence of the second paragraph is identical to the wording in the NFPA 24 code and reads as follows. "The hydrostatic test pressure should be 200 psi or 50 psi above the maximum static pressure, whichever is greater." However on page 15-15 under the heading of "Investigating Breaks", the first two sentences read "Hydrostatic tests are frequently used to determine the condition of underground piping. The tests are made at 150 psi minimum pressure but at least 50 psi above the normal static pressure." By testing at the design pressure of the fire header plus 50 psi this condition is satisfied. As such, the 200 psig suggested rehydro test pressure for a ten year old system is appropriate.

Leakage Criteria

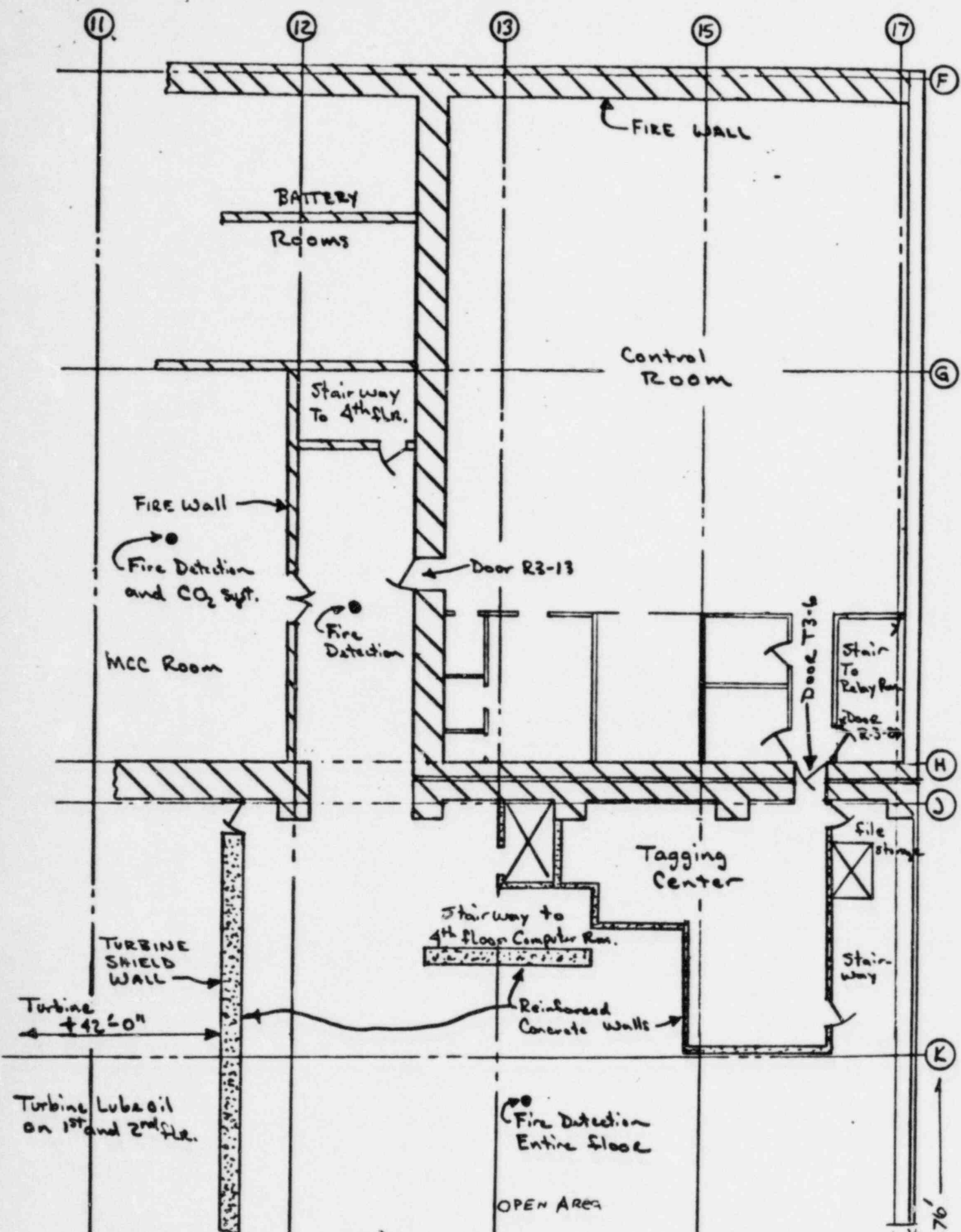
With respect to acceptable leakage from the buried fire mains several points must be made. First, neither the NFPA, Factory Mutual, or valve manufacturers' literature address leakages past aged valves. Therefore the NFPA 24 allowable leakage for valves was used in this analysis. Second, hydrant leakage permissible by NFPA 24 was used in this analysis for similar reasons. Third, on page 15-17 of the Factory Mutual Handbook, a range of leakages for old piping systems based on pipe diameter are specified under "Rate of Leakage". This table was used to develop the criteria for joints.

A summary of the acceptable leakages is as follows:

Joints	190.0 gallons (for 231 joints)
Valve Seats	3.8 gallons
Hydrants	<u>70.3 gallons</u> (for 15 hydrants)
	264.1 gallons

References

- 1) Factory Mutual, Handbook of Industrial Loss Prevention, 2nd Edition.



Scale 1/16" = 1'-0"

3rd FLOOR CONTROL RM AREA

FIGURE 1

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