



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENCLOSURE 2

APR 17 1979

MEMORANDUM FOR: D. Ziemann, Chief, Operating Reactors Branch #2,
Division of Operating Reactors

THRU: G. Lainas, Chief, Plant Systems Branch, Division of Operating Reactors 82

FROM: L. Derderian, Plant Systems Branch, Division
of Operating Reactors

SUBJECT: DRESDEN UNIT 1 FIRE PROTECTION REVIEW TRIP REPORT

On March 20-22, 1979, the fire protection review team consisting of T. Dunning, L. Derderian and M. Antonetti visited the Dresden Unit 1 site. The purpose of this visit was to obtain first hand information on the physical separation of redundant safe shutdown equipment, the fire hazards and the fire protection features of the plant, to aid in the assessment of the adequacy of the plant's fire protection. The review team examined all areas of the plant and identified the fire hazards and the fire protection features associated with each area.

During the site visit the licensee provided the review team with a written summary of modifications which he has proposed to implement. This summary is presented in Enclosure 1.

During the closing meeting with the licensee, we discussed our positions developed during the site visit. Our positions and the licensee's response indicated during the meeting are included in Enclosure 2.

The questions and positions to which the licensee has not yet responded are included in Enclosure 3 parts 1, 2 and 3 respectively. The licensee's response to a number of items indicated he would defer to the SEP program. The licensee's responses to items 15, 16, 17 and 18 herein will be evaluated to determine whether the SEP deferral is appropriate, and an answer provided at the next meeting.

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It is requested that this review summary be sent to the licensee and responses solicited in order to facilitate our completion of the review for Dresden Unit 1.



L. Derderian
Plant Systems Branch
Division of Operating Reactors

Enclosures:
As stated

cc w/enclosure:
V. Stello
D. Eisenhut
R. Vollmer
G. Lainas
R. Ferguson
J. Knight
M. Antonetti
Section C, PSB
Consultants
T. Dunning
T. Wambach
L. Derderian

FIRE PROTECTION COMMITMENTS

DRESDEN UNIT 1

1. Redesign of the Reactor Protection System wiring.¹
2. Installation of an automatic fire detection and water suppression system in the sphere cable penetration area.¹
3. Replace the control room false ceiling with material of limited combustibility.
4. Installation of an engineered fire detection system in the control room.
5. Removal² or treatment of the wood currently used in the electronic instrument calibration area.
6. Replacement of control room access doors with Class A fire doors.
7. Supervision of the battery room ventilation.
8. Installation of an automatic fire detection system in the battery room.
9. Installation of an early warning automatic fire detection system in the vicinity of 480-V switchgear No. 70 and 17 and MCC's No. 25 and 26.
10. Installation of a sprinkler system in the area beneath the control room. (North Auxiliary Bay)
11. Installation of an automatic water deluge system in the vicinity of the H₂ seal oil unit.
12. Installation of an early warning automatic fire detection system in the vicinity of 4-KV switchgear 11 and 12 and 480-volt load centers 14 and 15 and power centers 19 and 20.
13. Installation of an automatic fixed water suppression system in the cable passageway.¹
14. Following installation of the essential service aux. power diesel generator the existing diesel installation will be abandoned and the combustible will be removed.

15. Upgrade barriers enclosing the diesel fire pump to a 3-hour fire rating.
 16. Installation of an automatic water suppression system in the vicinity of the fire pump.
 17. Install a new Unit 1 fire pump to meet water needs.
 18. Installation of an automatic water suppression system in the vicinity of the post-incident and core spray pumps.
 19. Installation of a water sprinkler system in the new fuel receiving area, which exposes the new fuel storage vault.
 20. Installation of an early warning automatic fire detection system in the vicinity of the spent fuel pool.
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1. Committed to under IEEE-279 Sphere Equipment Upgrade Project
 2. Option Chosen
 3. Specifications have been prepared and awarded.
 1. Detection and Suppression Systems
 2. HVAC Work
 3. Structural Work

All modifications are being done or will be added to the current specifications.

Engineering hopes to complete the safe shutdown analysis and submit it to the Commission by the end of March.

DRESDEN UNIT 1

STAFF POSITIONS

1. Staff Position:

The doorway in the north auxiliary bay to the outdoor transformer should be sealed to provide a 3-hour rated barrier.

Licensee Response:

The licensee will provide a 3-hour rated door which is electrically supervised and will provide a sprinkler protection for the door.

2. Staff Position:

The bus duct penetrations in the north auxiliary bay wall should be protected by a deluge system with independent feed from the transformer deluge system.

Licensee Response:

The licensee will provide sprinkler protection for the bus duct penetrations with independent feed from the transformer deluge system.

3. Staff Position:

Hose stations should be provided in containment.

Licensee Response:

The licensee indicates he will evaluate the demineralized water source stations inside containment to see if 1" booster hose lines can be provided.

4. Staff Position:

The west wall of fire zone 8.4.2 (condensate pumps and H₂ seal oil unit area) should be upgraded to provide a 3-hour rated barrier for the door and penetrations (elect & pipe).

Licensee Response:

The licensee will do this.

5. Staff Position:

Fire detection should be provided in the instrument shop area adjacent to the battery room.

Licensee Response:

The licensee will do this.

6. Staff Position:

The sprinkler protection for the north auxiliary bay should be extended to cover the cable riser area to the cable tunnel including protection from an exposure fire in the northwest corner of the feed pump area.

Licensee Response:

The licensee will do this.

7. Staff Position:

Heat collectors should be provided for the temperature sensors actuating the CO₂ system in the primary feed pump area.

Licensee Response:

The licensee will do this.

8. Staff Position:

A curb should be provided at the door between the diesel fire pump and service water pump area.

Licensee Response:

The licensee will do this.

9. Staff Position:

Portable foam equipment including pickup tubes and foam concentrate should be provided.

Licensee Response:

The licensee will do this.

10. Staff Position:

An extra hazard sprinkler system should be provided for the clean and dirty oil storage room.

Licensee Response:

The licensee will do this.

11. Staff Position:

Fire detection should be provided in fire zone 4.8.7.B (Bus 11 and 12 4KV SWGR area).

Licensee Response:

The licensee will do this.

12. Staff Position:

Fire detection should be provided for the 125 V dc panel west of 480 V power center 19.

Licensee Response:

The licensee will do this.

13. Staff Position:

Curb gate valves should be provided for the Unit 1 hydrants on the yard loop. The fire protection loop is the primary water source for the post incident and core spray pumps for post loca conditions. As such any impairments in the fire system have an impact on the availability of these systems.

Licensee Response:

The licensee indicates isolation valves provided on the fire protection water loop could be utilized to isolate a break in the fire water loop. The licensee will not do this. Status is open.

14. Staff Position:

The globe valves in the fire water system in the HPCI building should be replaced with OS&Y gate valves.

Licensee Response:

The licensee will do this.

15. Staff Position:

Where two divisions of safety related cables are routed in close proximity in the containment, the cables should be covered with a flame retardant coating.

Licensee Response:

The licensee will evaluate this position and will provide an answer within 3 months. The licensee will, however, defer the final implementation to the SEP program.

16. Staff Position:

The emergency condenser condensate return valves should be placed on independent power sources and their control and power cables physically separated.

Licensee Response:

The licensee will evaluate this position and provide an answer within 2 months. The licensee will defer this to the SEP program.

17. Staff Position:

An additional means should be provided to permit makeup to the emergency condenser independent of the existing makeup valve.

Licensee Response:

The licensee will evaluate this position and provide an answer within 2 months. The licensee will defer this to the SEP program.

18. Staff Position:

The redundant level indication for the emergency condenser should be physically separated (by separate fire areas) or an additional means provided to indicate level for make up control which is not subject to fire damage.

Licensee Response:

The licensee will evaluate this position and will provide an answer within 2 months. The licensee will defer implementation to the SEP program.

19. Staff Position:

Fire stops should be provided in vertical cable tray risers in the containment at 15 foot intervals.

Licensee Response:

The licensee will evaluate this position. The licensee agreed to do the risers in the first 15-30'. He will evaluate the probability of an electrically initiated fire and will provide an answer within 3-4 weeks.

20. Staff Position:

Transient combustibles should be removed from the fuel storage area immediately. An hourly fire watch patrol should be established until the area is cleaned up.

Licensee Response:

This has been done.

ENCLOSURE 3
REQUESTS FOR INFORMATION

Part I

1. The screen wash pumps are classified as safety-related by the licensee's submittal. If this is the case, then the licensee should provide a 3-hour rated door between the diesel fire pump compartment and the screen wash pumps or provide an explanation of why the screen wash pumps are not necessary for a safe shutdown of the nuclear unit.
2. The warehouse wall which faces the core spray pump is an unrated wall. The warehouse and its occupancy expose safety related cables in the warehouse associated with the core spray and post incident systems. In addition the warehouse combustible loading seriously threatens the capabilities of the existing sprinkler protection. The licensee should clarify what his intentions are for the warehouse in respect to its removal or redesign in terms of occupancy.
3. The hose stations on the turbine mezzanine floor are not adequate to cover the area bounded by the column rows 21-28, D-H. The licensee should provide hose stations or an evaluation which indicates that the area does not pose a hazard from the standpoint of fire damage to the facility.
4. There are certain fire doors which are supervised and certain security doors which are also supervised. The security doors which also function as fire doors should be noted and a list provided to the staff.
5. The licensee should submit a list of hose stations and systems which are required to be included in the technical specifications.
6. The licensee should either commit to the staff's training requirement for the fire brigade that each brigade receive quarterly drills and that no individual shall miss more than 2 drills/yr. or provide justification for why this is not necessary.

Part II

1. Staff Concern

Water damage to safety-related load centers and switchgear from fire hose streams may render safety-related systems inoperable.

Staff Position

Water damage protection should be provided over MCC centers and switchgear which serve safety related functions for safe shutdown. These include 480V switchgear 16 and 17 and MCC 25 and 26, 480V load center 14 and 15, power centers 19 and 20 and over the 125V dc panel west of 480V power center 19.

2. Staff Concern

The hydrants which are located on the unit 1 side of the fire water loop do not have 2 1/2" gate valves on the hydrant ports. This condition could require shutting the hydrant down in the event of necessity to replace hose during a fire and would interrupt hose stream protection for large flammable liquid hazards.

Staff Position

The hydrants on the unit 1 side of the fire protection loop should be provided with 2 1/2" gate valves on the hydrant ports.

3. Staff Concern

Drains in flammable liquid areas are not provided with traps to prevent backflooding into other safety related areas.

Staff Position

Drains in flammable liquid areas should be provided with traps.