

DOCK file 5

SEP 19 1983

MEMORANDUM FOR: Gus Lafnas, Assistant Director
for Operating Reactors
Division of Licensing

FROM: William V. Johnston, Assistant Director
Materials, Chemical & Environmental Technology
Division of Engineering

SUBJECT: REGION III REQUEST FOR TECHNICAL ASSISTANCE - DAVIS-BESSE
PLANT SAFE SHUTDOWN/FIRE PROTECTION DEFICIENCIES
(TAC #52156)

By memorandum dated August 12, 1983 (R. L. Spessard to D. G. Eisenhut), Region III requested technical assistance concerning the recent findings of the NRC inspection team at the Davis-Besse plant in the area of safe shutdown/fire protection.

By letter dated September 13, 1983, the licensee has submitted information on the short-term and long-term actions that will be taken to bring the plant into compliance with Section III.G, III.J, and III.O of Appendix R. This letter also provides the licensee's basis for startup and operation of the plant following the current refueling outage.

We have reviewed the safety significance of the inspection findings and the licensee's proposed remedial actions. Our review is based on the audit findings orally presented at the audit exit interview and subsequent meetings with the licensee on August 16, 1983 and September 14, 1983. The findings are summarized in the licensee's letter of September 13, 1983. It is our opinion that the short-term compensatory actions to be taken prior to startup after the current refueling outage provide an acceptable level of fire protection safety to permit continued operation pending completion of the long-term actions.

1. Emergency Lighting Design

The emergency lighting does not meet the requirements of Appendix R with respect to equipment operation, access and egress routes, testing, lighting intensity, positioning and installation.

The licensee has developed an interim procedure for restoring normal plant lighting in the event of a fire in the control room or cable spreading room. Portable lighting units have also been

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purchased and stored in a convenient location and reserved solely for the control room operators. We find this additional emergency lighting capability an acceptable interim measure until the licensee can perform the proposed long-term corrective actions.

2. Fire Doors

Two fire doors, designated as doors 215 and 217, are not labeled as UL approved.

The licensee has reviewed the available documentation and determined that of the two deficient fire doors, one is a 3-hour rated assembly, and the other is part of a two-door airlock where the outer door is a 3-hour rated assembly. We find this acceptable as meeting our guidelines.

3. Reactor Coolant Pump Oil Collection System

The reactor coolant pump oil collection holdup capacity cannot accommodate the entire lubricating oil system inventory as required by Section III.0 of Appendix R.

The licensee has reviewed drawings and concluded that any overflow from the RCP oil collection system tank will flow to a location in the containment sump. A review of as-built conditions will be made to confirm that the overflow from this tank presents no safety problem. An exemption from our requirement will be requested in the future.

Based on the configuration of overflow lines, we find the present RCP oil collection system an acceptable derivation from our requirement, pending verification of as-built conditions and evaluation of the future exemption request.

4. Housekeeping

Wooden scaffolding was found stored in Mechanical Penetration Room 3 since April 30, 1983, and scrap wood and sawdust were present in the room.

The licensee has developed a maintenance procedure which addresses tighter control on the use and storage of transient combustible materials in the plant. Pending acceptance of the procedure by Region III, we find this an acceptable corrective action.

5. Fire Damper Inoperability

Three dampers were inoperable with no fire watch for a period of approximately two to three months due to personnel error and an inadequate test procedure.

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The licensee has revised the surveillance test procedure for fire dampers to provide explicit guidance on the testing of fire dampers to insure their operability. All dampers tested and found inoperable will be retested prior to startup. Pending acceptance of the procedure by Region III, we find this an acceptable corrective action.

6. Service Water Discharge Valve Room

Discharge valves and local controllers are exposed to a single disabling fire in violation of Section III.G of Appendix R. One hour wrap deficiencies exist and there is partial versus full suppression capability in the room.

The licensee has modified the plant operating procedures to allow de-energizing the motor operator for one of the service water discharge valves. Therefore, a fire involving the valve will cause it to fail in the as-is (open) position thereby ensuring service water flow. A long-term review will be conducted to assess Appendix R compliance. We find this to be an acceptable interim solution.

7. One Hour Fire Barriers

The adequacy of the Kaowool wraps was left as an open item with the following comments:

- a. The test report in support of crediting the wraps as one-hour barriers was inconsistent and inadequate.
- b. The test report did not address configurations existing at Davis-Besse.
- c. The one hour wraps are incomplete, poorly installed, and not in accordance with the test installation.

Prior to startup, the licensee will correct the deficiencies in the installation and will provide a roving fire watch patrol in areas protected, in part, by these fire barriers, and which have a combustible loading exceeding 20,000 BTUs/FT².

A long-term study will be made to substantiate the fire resisting capability of the fire barrier. We find this to be an acceptable interim corrective action.

8. Fire in the Auxiliary Shutdown Panel

A fire in the auxiliary shutdown panel can cause a loss of both trains of the auxiliary feedwater pump governor control circuitry.

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The licensee has performed an analysis of the possibility of losing all auxiliary feedwater turbine controls due to a fire at the auxiliary shutdown panel. The control would only be lost if a fire occurred in the panel, concurrent with the loss of offsite power. The startup feed pump could then be utilized with existing procedures. A long-term study will be made to consider rerouting cables in the panel. We find this an acceptable interim corrective action for fire protection.

The inspection team also identified a number of deficiencies related to the plant's routine fire protection program, including:

Diesel Fire Pump Test Procedure

The diesel fire pump test procedure was not written nor the test performed in accordance with NFPA 20 requirements.

Fire Hose Stations

Fire hose stations are not in accordance with NFPA 14 requirements to have pressure reducers on standpipes.

Fire Door Modifications

Modifications were made to the fire door to room 320 with no documentation.

Sprinkler System

Routing of water suppression below cable trays located near the ceiling is in violation of NFPA STD-13 and -16 and License Amendment 18.

Yard Hydrants and Valves

No physical barriers exist around some yard hydrants/valves.

Fire Pump Test

The fire pump test is not in accordance with NFPA as stated in the FSAR.

Control of Combustibles

A procedure does not exist for control of combustibles.

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Fire Protection System Flush

The fire protection system flush and valve operation is performed every three years instead of every year as required by NFPA.

Fire Detector Maintenance

Dust accumulation requires photoelectric detector adjustment. Procedures do not address this.

Fire Door and Damper Maintenance

Procedures for fire door and damper maintenance identified no surveillance from 1978 until recently. NFPA requires a monthly visual check as a minimum.

Emergency Lighting - Surveillance

Procedures should be revised to perform surveillance quarterly instead of semi-annually.

Off-Site Fire Department Training

The level of training, knowledge and responsibility for off-site fire department assistance is inadequate.

Welding Permits

Welding permits are not to be issued for greater than 24 hours as required in NFPA 51 and 518. Weekly permits are allowed at Davis-Besse.

Sprinkler Tests

The 1980-1983 sprinkler tests are inadequate relative to NFPA.

Off-Site Contractors Fire Watch Training

Off-Site contractors are inadequately trained as fire watches.

Fire Protection Coordinator Staff

The fire protection effort appears understaffed relative to Administrative Procedure AD 1310.00 and License Amendment 18.

The above listed deficiencies noted by the audit team concern the plant's normal fire protection program. It is our concern that these deficiencies be corrected as part of the defense-in-depth concept of the plant's fire

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SEP 19 1983

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- 6 -

protection program. As such, the proposed short-term and long-term corrective actions appear to provide an acceptable response, provided these actions satisfy the concerns of the Region III Inspectors. The impact of these deficiencies on the fire protection for safe shut-down is considered negligible. Therefore, we considered the proposed short-term corrective actions and long-term commitments adequate for continued operation of the plant.

151
William V. Johnston, Assistant Director
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NUCLEAR REGULATORY COMMISSION
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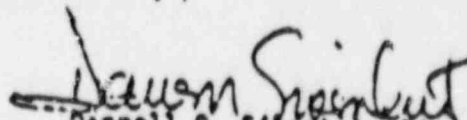
MEMORANDUM FOR: Edward L. Jordan, Director, Division of
Emergency Preparedness and Engineering Response

FROM: Darrell G. Eisenhut, Director, Division of Licensing, NRR

SUBJECT: BULLET RESISTANT FIRE DOORS

On November 28, 1982, a memorandum from C.E. Morelius to you requested an NRC position on acceptable bullet resistant fire doors in vital areas of nuclear power plants. This request was relayed to NRR/DL by TIA 83-02.

We have completed our review of the request and the associated letter from the Underwriters Laboratory dated December 20, 1982 (copy enclosed). The NRC position on bullet resistant fire doors is enclosed. Guidance on bullet resistant fire doors will be included in a generic letter to all licensees which will provide guidance on several recent fire protection issues. This completes our action under TIA No. 83-02.


Darrell G. Eisenhut, Director
Division of Licensing
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Enclosures:
As stated

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BULLET RESISTANT FIRE DOORS
FOR NUCLEAR POWER PLANTS

Branch Technical Position CMEB 9.5.1, paragraph C.5.a(5) describes the Regulatory Guidelines for door openings in fire barriers. The National Fire Protection Association (NFPA), Fire Protection Handbook, 14th Edition, dated 1976, Section 6, Chapter 8, on protection of openings in fire barriers, states in part, "Fire doors are the most widely used and accepted means for protection of both vertical and horizontal openings. Suitability of fire doors is determined by test by nationally recognized testing laboratories, and doors not tested cannot be relied upon for effective protection. The doors are tested as they are installed in the field."

Only labeled fire doors that have successfully passed fire testing by nationally recognized, or certified (by the Consumer Product Safety Commission) Fire Testing Laboratories satisfy these requirements. However, in some instances, NRC requirements call for dual or multipurpose doors for protection of openings in walls. In addition to fire protection, the requirements for pressure boundaries, water integrity, security or radiological protection must also be satisfied at some installations. Based on the combination of hazards a particular door is required to protect against, unlabeled multipurpose fire doors have been found acceptable in some instances. Where the opening in a fire barrier exceeds the dimensions of standard prototype fire doors, unlabeled doors may be found acceptable due to the commercial unavailability of tested doors of the same dimensions and configuration. Missile resisting and watertight doors will have no fire resistive rating because their substantial structural characteristics are difficult to combine with the construction of fire doors. NRR's acceptance of these doors is identified in the SER as an acceptable deviation from our guidelines. Where such deviation is not found in the SER, the licensee should have labeled fire rated doors.

Note that only since January 1, 1983, the Underwriters Laboratories, Inc., has authorized several manufacturers to produce UL classified fire door assemblies that have also been successfully evaluated for bullet resistant ratings. The manufacturers of such doors have been authorized to affix a combination label on each door which references both the fire and bullet resistant rating, along with supplemental information for the door assembly such as temperature rise rating.