UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

AUG 31 1983

Docket No. 50-346
License No. NPF-3
EA 83-124

Toledo Edison Company
ATTN: Mr. Donald Shelton
Vice President
Nuclear
Edison Plaza
300 Madison Avenue
Toledo, OH 43652

Gentlemen:

SUBJECT: NOTICE OF VIOLATION (NRC INSPECTION REPORT NO. 50-346/83-16)

This refers to a special inspection conducted on July 11-13 and 25-29, 1983 and a followup inspection conducted on September 7-9 and 22, 1983 and January 9, 1984, at the Davis-Besse Nuclear Power Station, Unit 1, of activities authorized by NRC Operating License No. NPF-3. The inspection was conducted to review steps taken by you to ensure compliance with 10 CFR 50.48 and, in particular, Sections III.G, J, and O of Appendix R to 10 CFR Part 50, and of your overall fire protection program implementation. During the inspection, violations of these requirements were identified. A copy of the inspection report was forwarded to you on August 30, 1984. The results of the initial inspection were discussed with you and NRR on August 16, 1983 in Bethesda, Maryland. The results of this inspection and our conclusions were also discussed on December 1, 1983, during an enforcement conference held at the NRC Region III office between Mr. W. A. Johnson and other members of your staff and Mr. James G. Keppler and other members of the NRC staff.

You provided additional responses to our concerns in letters dated December 16 and 29, 1983. These letters described two audits that had been performed by consultants to determine the degree of compliance with Appendix R requirements. However, the audit reports said little about the detailed requirements of Section III.G of Appendix R, and no mention was made of the requirements of Sections III.J., III.L, and III.O. The root cause of your failure to comply with Section III.G, J, L and O appeared to be inadequate control of engineering activities, including: (1) an inadequate reassessment of plant conditions regarding the applicable Appendix R requirements and (2) lack of supervisory reviews to assure technical adequacy of the reassessments. This reflected a significant breakdown in the management controls used to ensure compliance with fire protection requirements. NRC Generic Letter 81-12, dated February 20, 1981, specifically emphasized the need for management to reassess fire protection features at your facility to ensure compliance with the new NRC requirements in this area.

During the August 16, 1983 meeting between your staff and the NRC staff in Bethesda, Maryland, we stated the seriousness with which we viewed the findings of the July 11-13 and 25-29, 1983 inspection. Toledo Edison committed to develop short and long term programs addressing these problems prior to restarting the plant. Mr. Eisenhut's letter, dated August 19, 1983, documented that meeting and the commitments made by Toledo Edison. Your letters to the NRC, dated August 26, 31 and September 13, 1983, submitted your plans for short (prior to plant restart) and long-term corrective action as well as your evaluation of our inspection findings. We inspected your short-term corrective actions prior to plant restart. Mr. Eisenhut, in a letter to Toledo Edison, dated September 23, 1983, stated that NRC concluded that the actions required to permit plant restart had been satisfactorily completed.

The staff recognizes that a significant amount of time has elapsed since the referenced inspection report was issued. This is because the NRC has been developing the enforcement guidance for Appendix R based on NRC inspections and comments from the industry regarding the basis upon which compliance with Appendix R would be evaluated as well as considering conducting an investigation into the circumstances surrounding the violations. It has now been decided given the age of the matter not to conduct an investigation. Therefore, the NRC is proceeding with enforcement based on the results of the referenced inspection report.

In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1988), the violations in the enclosed Notice have been evaluated in the aggregate as a Severity Level III problem. A civil penalty is considered for a Severity Level III violation or problem. However, after consultation with the Deputy Executive Director for Regional Operations and the Director of the Office of Enforcement, I have been authorized to issue the enclosed Notice without a civil penalty. A civil penalty is not being proposed because of the significant time that has elapsed since the inspection occurred, the corrective actions you have taken or have scheduled to take, and the apparent lack of clarity which existed regarding fire protection requirements at the time. Given these factors, a civil penalty is not considered warranted.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. We recognize that since the inspection was completed you have taken actions or have scheduled actions to correct the deficiencies and may have described these corrective actions in previous correspondence with the NRC. For that reason, you may reference previous submittals regarding your corrective actions when responding to this letter. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement actions is necessary to ensure compliance with NRC regulatory requirements.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L., No. 96-511.

Sincerely,

Carl J Paperiello

A. Bert Davis
Regional Administrator

Enclosures:
1. Notice of Violation
2. Inspection Report
No. 50-346/83-16(DE)

cc w/enclosures:
L. Storz, Plant Manager
Resident Inspector, RIII
Harold W. Kohn, Ohio EPA
James W. Harris, State of Ohio
Robert M. Quillin, Ohio
Department of Health
State of Ohio, Public
Utilities Commission

See Attached Distribution

Distribution

DCD/DCB (RIDS)
Licensing Fee Management Branch
SECY
CA
OGPA
J. M. Taylor, DEDRO
J. Lieberman, OE
L. Chandler, OGC
T. Murley, NRR
RAO:RIII
PAO:RIII
SLO:RIII
M. Stahulak, RIII
Enforcement Coordinators,
RI, RII, RIV, and RV
A. Datta, NL/S, RES/EME
C. McCracken, NRR/ECEB
A. Krasopoulos, RI/DRS
G. Wiseman, RII/DRS
A. Singh, RIV/DRS
C. Ramsey, RV, DRS
OE File
EA File
JLuehman, OE

NOTICE OF VIOLATION

Toledo Edison Company
Davis-Besse Nuclear Power Station
Unit 1

Docket No. 50-346
License No. NPF-3
EA 83-124

A special fire protection inspection conducted at the Davis-Besse Nuclear Power Station during the period of July 11-13 and 25-29, 1983, and a followup inspection conducted on September 7-9 and 22, 1983, and January 9, 1984, identified violations of NRC requirements. In accordance with the "General Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1988), the violations are set forth below:

10 CFR 50.48(b) requires that all nuclear power plants licensed to operate prior to January 1, 1979, satisfy the applicable requirements of Appendix R to 10 CFR Part 50, including, specifically, the requirements of Sections III.G, Fire Protection of Safe Shutdown Capability, III.J, Emergency Lighting, III.L, Alternative and Dedicated Shutdown Capability and III.O, Oil Collection System for Reactor Coolant Pump.

A. 10 CFR 50, Appendix R, Section III.G.1 requires that fire protection features shall be provided for structures, systems, and components important to safe shutdown. These features shall be capable of limiting fire damage so that: (a) one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station is free of fire damage.

10 CFR 50, Appendix R, Section III.G.2 requires that where redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located in the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free from fire damage be provided:

1. Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;

2. Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

3. Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area.

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Contrary to the above, at the time of the inspection a fire in the auxiliary shutdown panel room could have resulted in the loss of control and indications for both auxiliary feedwater pumps at both the auxiliary shutdown panel room and the control room because features were not provided to ensure that one train of the auxiliary feedwater system which is needed to maintain hot shutdown was free of fire damage in that they were not separated by a fire barrier having a 3-hour rating; were not separated by a horizontal distance of more than 20 feet with no intervening combustible fire hazards; or were not provided with 1-hour fire barriers. In addition, numerous lengths of conduit and junction boxes in the Component Cooling Water heat exchanger and pump room were not separated by a fire barrier having a 3-hour rating; were not separated by a horizontal distance of more than 20 feet with no intervening combustible fire hazards; or were not provided with 1-hour fire barrier.

B. 10 CFR 50, Appendix R, Section III.G.3 and III.G.3(a) require that alternative or dedicated shutdown capability and its associated circuits, independent of cables, systems or components in the area, room or zone under consideration, be provided where the protection of systems whose function is required for hot shutdown does not satisfy the requirement of Paragraph G.2 of this section. 10 CFR 50, Appendix R, Section III.L provides the requirements for alternative or dedicated shutdown capability specifying:

1. Section III.L.1 requires that alternative or dedicated shutdown capability provided for a specific fire area be able to achieve cold shutdown conditions within 72 hours.

2. Section III.L.2 requires that process monitoring function for alternative or dedicated shutdown capability shall be capable of providing direct readings of reactivity and reactor coolant system heat removal functions.

3. Section III.L.3 requires that procedures be in effect to implement the alternative shutdown capability, be independent of the specific fire area(s) and accommodate postfire conditions where offsite power is available and where offsite power is not available for 72 hours.

4. Section III.L.7 requires that safe shutdown equipment and systems for each fire area shall be known to be isolated from associated non-safety circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment.

Contrary to the above, at the time of the inspection, alternative shutdown capability for a fire in the control room or cable spreading room did not meet the above requirements in that:

1. The capability to achieve cold shutdown within 72 hours was not provided.

2. Alternative or dedicated shutdown system process monitoring instrumentation was not installed outside the control room and the cable spreading room to provide direct readings of reactivity and the cold leg reactor coolant system temperature. In addition, the instrument used to measure the hot leg reactor coolant system temperature was not of adequate range.

3. Procedures were not in effect to implement the alternative shutdown capability assuming a fire in each area, with and without offsite power available for 72 hours.

4. The effect of a fire in each of these areas was not considered including the possible effects of interaction between associated circuits.

C. 10 CFR 50, Appendix R, Section III.G.3 requires that alternative or dedicated shutdown capability be provided and a fixed fire suppression system be installed in the area, room, or zone under consideration.

Contrary to the above, at the time of the inspection, a fixed fire suppression system was not provided in the auxiliary shutdown area.

D. 10 CFR 50, Appendix R, Section III.J requires that emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.

Contrary to the above, emergency lighting was not provided for access and egress routes to the auxiliary feed pump room, condensate storage tank level indicator area, and valves ICS 11A and 11B, which are needed for operation of safe shutdown equipment. In addition, for areas where emergency lighting was provided, two out of six units tested failed the eight hour discharge test.

E. 10 CFR 50, Appendix R, Section III.O requires that the reactor coolant pump be equipped with an oil collection system. Leakage shall be collected and drained to a vented closed container that can hold the entire lube oil system inventory.

Contrary to the above, at the time of the inspection, the reactor coolant pump oil collection system was inadequate in that two reactor coolant pumps, each with a lube oil capacity of approximately 225 gallons, were connected to drain into a single 250 gallon container.

F. Amendment No. 18 of Plant Operating License No. NPF-3 in Paragraph 2.C(4) requires the licensee to complete those modifications identified in Section 1 of the Safety Evaluation (SE) dated July 26, 1979, including those modifications specified in Table 1 of the SE. Section B.14 of Table 1 of the SE requires that the fire protection administrative controls be revised to follow the NRC document, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance."

As specified below the specific paragraphs of the attachments to Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance state the following:

1. Paragraph 1.0 of Attachment No. 1 states in part, "The organizational responsibilities and lines of communication pertaining to fire protection should be defined between the various positions through the use of organizational charts and functional descriptions of each positions responsibilities . . . . 2.0 Qualifications for a Fire Protection Engineer . . . . These requirements are the eligibility requirements as a Member in the Society of Fire Protection Engineers."

2. Paragraph 1.0.c of Attachment No. 6 states in part that, ". . . plant modifications, including fire protection systems, are reviewed by qualified personnel to assure inclusion of appropriate fire protection requirements.

3. Paragraph 1.0.d of Attachment No. 6 states in part that, "A review . . . of the adequacy of fire protection requirements . . . is performed and documented by qualified personnel. This review should determine that fire protection requirements and quality requirements are correctly stated . . . and . . . are adequate acceptance and rejection criteria . . . ."

4. Paragraph 2.0.b of Attachment No. 6 states in part that, "Activities such as . . . test . . . of fire protection systems are prescribed and accomplished in accordance with documented . . . procedures . . . ." Paragraph 1.0.b of Attachment No. 6 states in part that, "Quality standards are specified in the design documents such as appropriate fire protection codes and standards . . . . (c) . . . designs . . . including fire protection systems, are reviewed . . . to assure inclusion of appropriate fire protection requirements."

   Specifically for item (d) below, Paragraph 2.0.b of Attachment No. 1 states in part that, "the fire brigade members qualifications should include satisfactory completion of a physical examination for performing strenuous activity . . . ."

Specifically for item (e) below, Paragraph 2.0.b(3) of Attachment No. 4 states in part that, "a fire watch trained and equipped to prevent and combat fires is present throughout any operations in which there is potential for fire that might damage safety related equipment . . . . "

Section 9.5.1.1 of the Davis-Besse Final Safety Analysis Report (FSAR) references a number of the applicable design documents for the fire protection system stating that, "The fire protection systems are designed, installed and tested to satisfy the intent of the National Fire Protection Association (NFPA) codes . . . ."

(a) Chapter 2-7.2.1 of NFPA 13A (1978) states, "Test alarms by opening the inspector's test connection and/or the by-pass test connection, in conjunction with making a water-flow test when facilities and conditions permit."

(b) Chapter 12-1.2 of NFPA 20 states that, "The field acceptance test results shall be as good as the manufacturer's certified shop test characteristic curve for the pump being tested."

(c) Chapter 3.1 of NFPA 26 (1976) states that, "A systematic weekly inspection (or monthly in the case of locked-open valves) of each valve should be made and a report form used to record the condition of each valve."

(d) Chapter 33 of NFPA 27 (1975) states in part that, "minimum physical requirements should be established . . . ."

(e) Chapter 431 of NFPA 51B (1977) states in part, "Fire watchers shall have fire extinguishing equipment readily available and be trained in its use, including practice on test fires . . . . 434. A fire watch shall be maintained for at least a half hour after completion of cutting and welding operations . . . ."

(f) Chapter 8-1.1 of NFPA 72E (1978) states in part that, "Each automatic detector shall be continuously maintained in reliable operating condition at all times, and such periodic inspections and tests shall be made as are necessary to assure proper maintenance as specified." Chapter 8-4.1 of NFPA 72E states in part that, ". . . photoelectric smoke detectors may require periodic cleaning to remove dust or dirt which has accumulated . . . for each detector, the cleaning, checking, operation and sensitivity adjustment, shall be attempted only after consulting the manufacturer's instructions."

5. Attachment No. 5 states in part that, "Firefighting procedures should be established to cover such items as . . . coordination of firefighting activities with offsite fire departments. The

firefighting procedures should identify . . . : g. Actions to be taken that will coordinate firefighting activities with offsite fire departments, including: . . . identification of individual who will direct firefighting activities when aided by offsite firefighting assistance; . . . ."

6. Paragraph 5.0 of Attachment No. 6 states in part that, ". . . b. Periodic testing - . . . emergency lighting equipment is tested periodically to assure that the equipment will properly function and continue to meet the design criteria." Section III.J of Appendix R to 10 CFR Part 50 requires emergency lighting units with at least an eight hour battery power supply be provided.

Contrary to the above, the licensee failed to develop and implement adequate inspection, surveillance test procedures, administrative controls and quality assurance in that:

1. The implementation of the staffing qualifications for the fire protection program was inadequate in that: the fire protection coordinator was the only individual who had direct responsibility for the fire protection program; the licensee's Administrative Procedure 1810.00 inadequately described the number of individuals involved in implementing the fire protection program; and the licensee's fire protection engineer had not had his qualifications evaluated to determine acceptability to NRC criteria.

2. No procedure was in effect to ensure that modifications that may change the fire resistive rating of fire doors were reviewed by qualified personnel.

3. Test Procedure ST 5016.11.1 was inadequate in that this procedure failed to indicate that only one attempt was allowed to close the damper in determining operability. Therefore, the test procedure acceptance criteria for this test procedure was not satisfactory. Additionally, the procedure specified that the damper and ductwork shall be cleaned prior to testing. This could have affected the fire damper test results.

4. (a) Surveillance Test Procedure ST 5016.07 (Automatic Sprinkler Systems) was not followed in 1980, 1981, 1982 and 1983 in that alarms were not tested by opening the inspector's test connection and/or the by-pass test connection in conjunction with making a water flow test on the wet pipe sprinkler systems as specified by NFPA 13A.

(b) Surveillance Test Procedures ST 5016.03 and ST 5016.12 (Fire Pump Testing) were inadequate in that the diesel fire pump test results for 1980, 1981, 1982, and 1983 were not compared to the manufacturer's certified shop test characteristic curve for the pump being tested, as specified by NFPA 20.

(c) Surveillance Test Procedure ST 5016.09 (Fire Protection Systems Valve Operability) did not specify verifying fire protection system valve operability as specified by NFPA 26.

(d) Administrative Procedure AD 1828.20 (Fire Brigade) did not specify minimum physical requirements for fire brigade members as specified by NRC requirements or NFPA 27.

(e) Administrative Procedure AD 1810.01 (Fire Protection Program) did not specify that fire watchers be trained on fire extinguishing equipment and that a fire watch be maintained for at least a half hour after completion of cutting and welding operations as specified by NRC requirements or by NFPA 51B.

(f) Surveillance Test Procedure ST 5016.06 (Fire Detectors) did not specify measurement of detector sensitivity, periodic cleaning, maintenance and adjustment of photoelectric fire detectors as specified by NFPA 72E.

5. Administrative Procedures AD 1810.00 and 1828.20 did not specify the actions to be taken by offsite fire departments with respect to who would direct firefighting activities when the fire brigade was aided by off site fire departments.

6. Periodic Test Procedure PT 5112.01 (Emergency Lighting) did not specify surveillance of emergency lighting units to assure an 8-hour battery power supply was provided as required by NRC requirements.

G. Technical Specification 3.7.10 requires that with one or more of the required penetration fire barriers nonfunctional, a continuous fire watch on at least one side of the affected penetration be established within one hour.

Contrary to the above, a continuous fire watch was not established, or the dampers closed, until July 28, 1983 and September 8, 1983 for two penetrations that the licensee found to be nonfunctional on May 12 and June 7, 1983.

Collectively, these violations have been categorized as a Severity Level III problem (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Davis-Besse is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, and a copy to the NRC Resident

Inspector at Davis-Besse within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation if admitted, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. If an adequate reply is not received within the time specified in this Notice, an order may be issued to show cause why the license should not be modified, suspended, or revoked or why such other action as may be proper should not be taken. Consideration may be given to extending the response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION

Carl J Paperiello

for A. Bert Davis
Regional Administrator

Dated at Glen Ellyn, Illinois
this 31 day of August 1988