

SUPPLEMENT TO
THE FIRE PROTECTION
SAFETY EVALUATION REPORT
BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
U.S. OF NUCLEAR REGULATORY COMMISSION
IN THE MATTER OF
COMMONWEALTH EDISON COMPANY
DRESDEN UNITS 2 AND 3
50-237 AND 50-249

7907190167

336 325

CONTENTS

- 1.0 Introduction
- 2.0 Modifications
- 3.0 Evaluation
 - 3.1 Administrative Controls
 - 3.2 Radiological Consequences of Fires
 - 3.3 Cable Penetration Fire Barrier Tests
 - 3.4 Shutdown Capability
- 4.0 Conclusions

1.0 INTRODUCTION

Our initial Safety Evaluation Report (SER) pertaining to the reevaluation of fire protection at the Dresden Units 2 and 3 facilities was issued by letter from George Lear to Commonwealth Edison Company, dated March 22, 1978. In Section 3 of the SER, certain items were identified as incomplete and requiring further information from the licensee and evaluation by the staff. The SER also listed several modifications proposed by the licensee to improve fire protection.

The licensee in his letter(s) dated April 14, 1978, September 28, 1978, January 24, 1978, March 19, 1979 and April 30, 1979, submitted additional information in response to staff requests and positions to resolve these incomplete items.

We have reviewed the additional information submitted by the licensee to assure that for the incomplete items the fire protection guidelines identified in Section 2.0 of our SER are satisfied.

Section 2.0 of this report summarizes the additional modifications proposed by the licensee. Section 3.0 of this report provides the results of our evaluation of the incomplete items.

Brookhaven National Laboratory under contract to the NRC has provided the services of fire protection consultants who participated in the evaluation of the fire protection program and in the review of information provided on incomplete items. They have also participated in the preparation and review of this Supplement to the Safety Evaluation Report. Their report, "Fire Protection in Operating Nuclear Power Stations, Dresden Units 2 and 3, Review of the Supplement to the Safety Evaluation Report," dated July 9, 1979 discusses their participation in the review.

2.0 MODIFICATIONS

The licensee has proposed the modifications summarized below. The implementation schedule for these proposed modifications is shown in Table 2.1. A complete description of each proposed modification is given in the licensee's documentation. A list of the modifications that have been completed to date is given in Table 2.2.

2.1 Administrative Controls

By letters dated January 31, 1979, July 27, 1978, February 24, 1978 and January 24, 1978, the licensee provided the following modifications to the administrative controls for the Dresden Units 2 and 3 stations.

1. The organizational charts for the fire protection of the station have been included as a part of the Technical Specifications.

2. The licensee has contracted the services of M&M Protection Consultants as an independent auditor to monitor for fire fighting effectiveness of the station fire protection program.
3. The licensee will review fire brigade performance against the requirements of Section 27 of the NFPA Code 1975.
4. The licensee is providing additional training for all key station brigade personnel at the Great Lakes Naval Training Center.
5. The licensees corporate quality assurance program is applicable to fire protection. Four criteria of the Branch Technical Position 9.5-1 which are not covered by the quality assurance program will be covered in supplemental site specific procedures or instructions.
 - a. There shall be site indoctrination and training programs for fire protection and fire fighting.
 - b. There shall be site procedures for the periodic inspection of fire protection systems, emergency breathing and related auxiliary equipment, emergency lighting and communication equipment. These inspections are to assure the acceptable condition of these items.
 - c. There shall be site procedures for the periodic inspection of materials subject to degradation such as fire stops, seals and fire retardant coatings to assure these items have not deteriorated or been damaged.
 - c. There shall be site schedules and methods for periodic testing of fire protection equipment, emergency lighting and communication equipment to assure that the equipment will function properly and continue to meet the design criteria.
6. A five man fire brigade is provided for each operating shift. Each brigade consists of onsite personnel qualified to perform their assigned responsibilities.
7. The diesel fuel oil in the fire pump diesel day tank will be checked periodically for quality. This item has been included in the licensee's Fire Protection Technical Specifications.
8. The fire water system will be flushed once a year. This item is included in the licensees technical specifications.
9. Hose houses will be inspected to assure compliance with NFPA 24 "Outside Protection."

10. The obstructions or broken reels found on hose stations F-11, F-22, and F-114 have been removed or replaced.
11. The licensee will not issue fire hose from the storeroom for reasons other than replacement or use in the fire protection system.
12. The licensee will provide proper fire fighting nozzles at all locations which go from off to spray to straight stream mode.
13. Barricades provided around PIV's (post indicator Valves) will be repaired or replaced.
14. Where the post indicator valve stem wrenches are obstructed from full rotation, this obstruction will be removed and damaged hydrant nuts will be replaced.
15. Where doors to the hose houses are obstructed, the obstructions will be removed and the doors inspected periodically to assure accessibility.
16. Each hose house will be checked periodically for inventory of fire fighting gear against NFPA-14.

TABLE 2.1

Implementation Schedule for Proposed Modifications ...
Administrative Controls 2.1

TABLE 2.2

*Modifications Completed To Date

*Numbers refer to the item numbers in our SER.

3.0 EVALUATION

The following provides our evaluation of the incomplete items. Numbers in parentheses following each heading refer to the sections of our previously issued SER which address these incomplete items.

3.1 Administrative Controls (3.2.1)

Our SER noted that the licensee would provide a description of his administrative controls for fire protection and that following the receipt of this information we would evaluate and report the results of our evaluation. The licensee has provided a description of his administrative controls in letters on this subject dated January 24, 1978, February 24, 1978, March 20, 1978, July 27, 1978, January 31, 1979 and April 30, 1979. We have reviewed the above listed correspondence along with the modifications agreed to in Section 2.0 of this report and find that the licensees administrative controls for fire protection are adequate to assure that the objectives of 2.2 of our SER are satisfied.

3.2 Radiological Consequences of Fires (3.2.2)

Our SER indicated that the licensee would provide an analysis of the radiological consequences of fires in the off-gas filter area and that we would address this topic in our supplement. The licensee in a letter dated May 25, 1978 referenced a previously submitted report on the Dresden 2 and 3 off-gas system dated June 11, 1974 which was submitted under Docket 50-237, Special Report No. 1 of Quad Cities Units 1 and 2, Table 4 and Supplementary Information for Dresden Units 2 and 3 Special Report No. 4A, Modified Off-Gas System, Commonwealth Edison.

Based upon our review of the licensees referenced reports and arguments contained in the letter dated May 25, 1978, we conclude that fire protection for the off-gas system areas of the Dresden Units 2 and 3 are adequate and satisfy the objectives of Section 2.2 of our SER and are, therefore, acceptable.

3.3 Cable Penetration Fire Barrier Tests (3.2.3)

Our SER indicated that the licensee would provide a description of the test program for cable penetration fire stops and subsequent test results. The licensee by letters dated April 14, 1978, June 29, 1978, September 29, 1978 and April 14, 1978 addressed the topic of Cable Penetration Fire Barrier Tests. We have reviewed the licensees submittals, including test procedures, and test results. We conclude that the Dresden 2 and 3 cable penetration barriers satisfy the objectives of Section 2.2 of our SER and are, therefore acceptable.

3.4 Shutdown Capability (3.2.4)

Our SER indicated that the licensee would confirm that the capability exists to safely shutdown in areas where redundant systems could be

damaged by fires or an alternate means for safe shutdown would be provided. The licensee by letter dated June 5, 1978 submitted the results of his analysis titled, "Fire Protection Safe Shutdown Analysis, Dresden Station Units 2 and 3."

We have not completed our review of the licensee's safe shutdown analysis. The Dresden Unit 2 plant is included in the SEP (Systematic Evaluation Program) and, therefore, its safe shutdown review is deferred for coordination with that program. Upon completion of our review of the Safe Shutdown Analysis we will report in a supplement to this report.

4.0 CONCLUSIONS

The licensee has performed a fire hazards analysis and has proposed certain modifications to improve the fire protection program as described in our SER of March 22, 1978. Additional modifications have been proposed by the licensee to resolve those issues identified as incomplete items in that SER. These additional proposed modifications are summarized in Section 3 of this report.

In summary, significant steps have been taken to assure that safe shutdown can be accomplished and the plant maintained in a safe condition during and following potential fire situations. Upon implementation of the licensee's proposed modifications summarized in Section 3 of our SER and Section 2 of this report, we find that the provisions of Section 2 of our SER are satisfied. More specifically for the postulated fires considered in our evaluation, we find that:

1. Combustibles in safety-related areas are limited to the extent practicable;
2. Fire detection and suppression systems will adequately protect against, consistent with other safety requirements, the effects of fire on safety-related systems and will not in themselves significantly impair the capability of safety-related systems;
3. Fire detection and suppression systems and separation by barrier or distance adequately protect redundant safe shutdown systems and will not in themselves significantly impair the capability of safe shutdown systems;
4. A fire in any fire area will not prevent safe shutdown of the plant;
5. A fire in any fire zone will not damage safety-related structures such that they cannot perform their safety function;
6. A fire in any fire zone will not cause the release of amounts of radioactive material in excess of those considered in previous safety evaluations;

7. The fire protection organization has the professional qualifications to implement the fire protection program, and administrative controls are adequate to maintain control of combustibles, ignition sources, and the fire protection organization.

We find that the licensee's proposed modifications described herein are acceptable both with respect to the improvements in the fire protection program that they provide and with respect to continued safe operation of the facility.

In the report of the Special Review Group on the Browns Ferry Fire (NUREG-0050) dated February 1976, consideration of the safety of operation of all operating nuclear power plants pending the completion of our detailed fire protection evaluation was presented. The following quotations from the report summarize the basis for the Special Review Group's conclusion that the operation of the facility need not be restricted for public safety:

"Fires occur rather frequently; however, fires involving equipment unavailability comparable to the Browns Ferry fire are quite infrequent (see Section 3.3 of NUREG 0050). The Review Group believes that steps already taken since March 1975 (see Section 3.3.2) have reduced this frequency significantly."

"Based on its review of the events transpiring before, during and after the Browns Ferry fire, the Review Group concludes that the probability of disruptive fires of the magnitude of the Browns Ferry event is small, and that there is no need to restrict operation of nuclear power plants for public safety. However, it is clear that much can and should be done to reduce event further the likelihood of disabling fires and to improve assurance of rapid extinguishment of fires that occur. Consideration should be given also to features that would increase further the ability of nuclear facilities to withstand large fires without loss of important functions should such fires occur."

It is our conclusion that the operation of the facility, pending the implementation of all facility modifications, does not present an undue risk to the health and safety of the public based on our concurrence with the Browns Ferry Special Review Group's conclusions identified above, as well as the significant improvements in fire protection already made at the facility since the Browns Ferry fire. These include establishment of administrative controls over combustible materials and use of ignition sources, training and staffing of a fire brigade, and issuance of technical specifications to provide limiting conditions for operation and surveillance requirements for fire protection systems.

We have determined that the licensee amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR Section 5.15(d)(4) that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.