Commonwealth Edison
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Address Reply to: Post Office Box 767
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July 27, 1978

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Additional Information Regarding Administrative Controls for the Dresden, Quad-Cities and Zion Stations Fire Protection Programs NRC Docket Nos. 50-237, 50-249, 50-254, 50-265, 50-295 and 50-304

References (a): June 1, 1978 letter from A. Schwencer to Cordell Reed requesting additional information regarding administrative controls for the Zion Station fire protection program

(b): June 29, 1978 letter from Dennis L. Ziemann to Cordell Reed requesting additional information and commitments regarding the Dresden Station Units 2 and 3 fire protection program.

Dear Sir:

Per References (a) and (b) the NRC Staff requested Commonwealth Edison Company to provide additional information and commitments regarding administrative controls for the Dresden Station Units 2 and 3 and the Zion Station Units 1 and 2 fire protection programs. On July 13, 1978 Commonwealth Edison Company requested and received from the appropriate NRC Project Managers an extension to August 1, 1978 for responding to these NRC Staff requests.

Attachments 1 and 2 contain Commonwealth Edison Company's responses to the additional information requested and Staff positions identified in Enclosures 1 and 2 of References (a) and (b). Commonwealth Edison Company has deemed these responses to be applicable to Dresden Station Units 2 and 3, Quad-Cities Station Units 1 and 2, and Zion Station Units 1 and 2.

One (1) signed original and seventy-nine (79) copies are provided for your use.

Very truly yours,

William F. Naughton

William F. Naughton
Nuclear Licensing Administrator
Pressurized Water Reactors

attachments

ATTACHMENT 1

Response to NRC request for additional information regarding Commonwealth Edison Company's fire protection program.

Staff Request

1. (Zion) Item number 3 on Page 5, of the licensee's response dated January 24, 1978, identified the licensee's contractor fire protection engineers responsible for the fire protection program inspections, and the fire hazard analysis. This information is not acceptable because it does not identify the Fire Protection Engineer (and his qualifications) who is either in the Fire Marshall's organization or is a consultant to this organization. Provide this information.

2. (Zion) Item number 2, on Pages 2 thru 5, of the licensee's response dated January 24, 1978, does not identify the offsite management position responsible for using the following NFPA Publications to develop the fire protection program:

No. 4 - "Organization for Fire Services"
No. 4A - "Organization for a Fire Department"
No. 6 - "Industrial Fire Loss Prevention"
No. 7 - "Management of Fire Emergencies"
No. 8 - "Management Responsibilities for Effects of Fire on Operations"
No. 27 - "Private Fire Brigades"

Provide this information.

1. (Dresden) Item number 3 on Page 4 of your response, dated January 24, 1978, identified your contractor fire protection engineers responsible for the fire protection program inspections, and the fire hazard analysis. The response is not acceptable because it does not identify the Fire Protection Engineer (and his qualifications) who provides continuing guidance to the station's fire protection organization as called for in Section 2.0 of Attachment No. 1, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance."

Response

Commonwealth Edison Company is currently in the process of contracting with a fire protection consultant to be used to fulfill the requirements of Sections 2 and 3 of Attachment 1 "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance." Contract arrangements are expected to be completed by November 1, 1978. A response to Sections 2a and 3f of Attachment 1 will be submitted to the NRC Staff by December 1, 1978.

Staff Request

2. (Dresden) Section 6.0 of your response, dated August 1, 1977, infers that NML's annual critique of fire drills meets the requirements of subsection 3.0 of Attachment No. 1, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance." Provide a description of NML's critiques. This description should include: the scope and frequency of the critiques, methods used to assess the performance of brigade leaders and brigade members and to obtain corrective actions, and the availability of critique records for review.

Response

To comply with Section 3f for management critiques of fire drills all Commonwealth Edison Company stations will review fire brigade performance against the requirements of Section 27 of the NFPA Code-1975.

Staff Request

3. (Zion) Item number 5 on Page 2 of the licensee's response dated March 15, 1978, indicates that the station is investigating various additional training programs commercially available to increase the fire fighting expertise of the station personnel. Describe these training programs and the expected date for implementing these programs.

Response

The Fire Marshall and the Training Supervisor at the Commonwealth Edison Company stations periodically evaluate the fire brigade training. This evaluation takes into account changes to the plant or types of fire fighting equipment and the need for additional training due to such changes. Additional training is currently being conducted for all key station fire brigade personnel at the Great Lakes Naval Training Center in North Chicago, Illinois. This training consists of:

1. Group observation in:

   a) Open tank training using high, high-low, and low velocity water fog,

   b) Pan fires and spill fires extinguished by portable CO2 and PKP dry chemical extinguishers,

   c) Open tank fire using low velocity water fog and mechanical foam w/foam nozzle,

   d) Operation of P-250 pump and wild hose demonstration; and

   e) Observed training movie "Trial by Fire."

2. Group participation, actively, as hosemen, nozzlemen, and relay men in extinguishing:

   a) Open tank fires,

   b) Inside structure fires (resembles inside compartment fires); and

   c) Topside structure fires (resembles lower compartment fires with topside hatch as only access).

Staff Request

3. (Dresden and PF-7 Zion)

   Confirm your commitment fo fully implement the fire protection quality assurance criteria of Appendix A to BTP 9-5-1 or Regulatory Guide 1.120 as part of the Commonwealth Edison Company's QA program under 10 CFR Part 50, Appendix B.

Response

The Commonwealth Edison Company Corporate Quality Assurance Program described in Topical Report CE-1-A Revision 4 dated March 10, 1978 which has been accepted by the NRC as meeting the requirements of 10 CFR Part 50, Appendix B will be applicable, as appropriate, to the non-safety related fire protection systems. That is, the quality procedures for design, procurement, receipt inspection, etc., will be applicable to the fire protection systems and fire protection programs for operating plants.

The fire protection systems are classified as non-safety related.

Four criteria of the Branch Technical Position 9.5-1 Fire Protection are not covered by the Commonwealth Edison Company Corporate Quality Assurance Program. These criteria shall be supplemented by specific site procedures and/or instructions. The four criteria are as follows:

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.

d. 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.

The QA program to cover fire protection systems at all Commonwealth Edison Company stations will be implemented by September 1, 1978.

ATTACHMENT 2

Response to Staff positions on administrative controls regarding Commonwealth Edison Company's fire protection programs.

Identification

PF-1 (Dresden & Zion) - Indoctrination of Contractor Personnel.

Staff Position

The licensee's existing program for indoctrination of contractor personnel should be expanded to include familiarization with the fire protection program administrative controls such as the control of combustibles and ignition sources and the emergency procedures relative to fire protection.

Response

Prior to issuance of a contract, potential contractors must submit for Commonwealth Edison Company approval quality assurance programs that conform with standard Commonwealth Edison Company work practices including manuals and procedures. These programs are periodically audited by both the Station and Company Quality Assurance Departments. Adherence to these programs provides assurance that contractor personnel:

(1) Perform maintenance or modifications at the Commonwealth Edison Company stations in accordance with Company procedures;

(2) Do not work on nor defeat any fire protection system without proper work request reviews; and

(3) Properly control the use of combustibles and ignition sources.

The contractor supervisors have the overall responsibility for administering controls over combustibles via the bid specification and direct control of the contract. In addition, the contractor personnel indoctrination program at the Commonwealth Edison Company sites provides instruction as to the proper response during fire situations.

Identification

PF-2 (Zion) and PF-3 (Dresden 1) - Fire Brigade Members' Physical Examinations.

Staff Position

The licensee should provide periodic physical examinations for all fire brigade members. These examinations should be aimed at "screening out" personnel with heart and/or respiratory disorders from service in the fire brigade.

Response

A pre-employment physical is given to all Company employees. This physical is sufficient to determine an individual's ability to perform in strenuous activities. In addition, all station employees qualifying as potential fire brigade members are required to have physical examinations to meet Regulatory Guide 8.15, " Acceptable Program for Respiratory Protection." Conformance to this regulatory guide fulfills the fire brigade members' requirements for periodic physical examinations.

Identification

PF-3 (Zion) - Fire Brigade Leader

Staff Position

Shift Engineers should not be assigned as the Fire Chief or Fire Brigade Captains because although the Shift Engineer assumes overall responsibilities for the plant during the fire emergency, his presence may be required elsewhere to maintain the plant in safe condition or to shutdown the plant during an emergency. These duties and his other responsibilities would demand his full attention and expertise during a fire emergency such as the responsibility for directing the integrated operation of systems, components or auxiliary equipment not normally used for plant shutdown.

Response

At the Commonwealth Edison Company Stations the duties of Fire Brigade Leader have been assigned to the Shift Foremen.

Identification

PF-4 (Zion) and PF-2 (Dresden) - Evaluation of Fire Brigade Members Proficiency.

Staff Position

During fire drills, an evaluation should be made of each fire brigade member's proficiency in the use of fire fighting procedures, fire fighting equipment including self-contained breathing apparatus, communication and ventilation equipment.

Response

The individuals involved in a fire drill are routinely evaluated by the Fire Chief and/or Fire Captain. These evaluations are discussed at the scene of the drill with the individuals. Only outstanding comments and/or deficiencies are listed on the report sent to the Fire Marshall for evaluation of team performance, system modifications, equipment inadequacies, etc. However, individual performance deficiencies directly affect the overall team evaluation and can result in additional drills to rectify the team's deficiencies.

Identification

PF-4 (Dresden) - Fire Brigade: Composition

Staff Position

As a minimum, a five-man fire brigade should be provided for each operating shift. Each brigade should consist of onsite personnel, each fully qualified to perform their assigned responsibilities.

Response

Commonwealth Edison Company complies with the Staff Position for all its nuclear generating stations. A five-man brigade is provided for each operating shift. Each brigade consists of onsite personnel, each fully qualified to perform their assigned responsibilities.

Identification

PF-5 (Zion) and PF-9 (Dresden) - Fire Fighting Procedures

Staff Position

Fire fighting plans should be established and documented to identify the strategies for fighting fires in all safety-related areas including the containment, and areas presenting a hazard to safety-related equipment. These strategies should, as a minimum, cover the subjects in subsection "d(1)" through "d(10)", and "e" of Attachment No. 5 (Reference No. 2.0 above).

Response

Commonwealth Edison Company has over seventy-five (75) years of generating station experience. During this time Commonwealth Edison Company has acquired extensive experience in fighting fires at its numerous fossil generating stations. Based on this wealth of experience, Commonwealth Edison Company firmly believes that sound training in basic fire fighting fundamentals provides the most effective means of efficiently handling any potential fire situation. In addition, Commonwealth Edison Company believes, based on its fire fighting experience, that providing documented procedures for handling every conceivable type of fire and separating fire fighting procedures by safety and non-safety related areas will be counterproductive to the efficient handling of emergency fire situations, primarily because fires rarely conform to established plans and also because the importance of extinquishing fires rapidly and efficiently should not be mollified by classifying fires into areas of importance. Therefore, Commonwealth Edison Company does not feel that specific fire fighting strategies and plans should be included in any of the fire protection administrative procedures. Rather, strategies for fighting fires will be continuously evaluated and reasonably upgraded with available technological advancements during the periodic fire drills conducted at the Company's stations. Finally, Commonwealth Edison Company believes that the station fire brigade members' familiarity with plant access and component locations precludes the necessity for the designation of area access, critical equipment and potential fire source locations.

Identification

PF-5 (Dresden) - Fire Brigade Training: Classroom Instructions.

Staff Position

1.0 The station's fire fighting training program should be expanded to provide classroom instructions for the fire brigade, using qualified fire training officers from regional fire departments of community colleges as instructors. These instructions should include:

a. Identification of the fire hazards and associated type of fires that could occur in the plant and identification of the location of such hazards.

b. Identification of the location of fire-fighting equipment for each fire area, and familiarization with layout of the plant, including access and egress routes to each area.

c. The proper use of available fire-fighting equipment and the correct method of fighting each type of fire. The types of fires covered should include electrical fires in cables and cable trays, hydrogen fires, flammable liquid, waste/debris fires, and record file fires.

d. Indoctrination of the plant fire-fighting plan, with specific coverage of each individual's responsibilities.

e. Fire fighting in windowless structures, including tunnels.

f. Fire behavior in structures.

g. Hose care and handling practices and exercises.

h. Precautions in use of fire hose streams around electrical equipment.

i. Use and limitation of breathing, apparatus, communication, lighting and fire ventilation equipment.

j. Toxic characteristics of expected products of combustion.

k. Review of fire-fighting procedures and procedure changes and latest plant modifications and changes in fire-fighting plants.

1.1 Additional training should be given to fire brigade leaders in fire-fighting tactics and fire planning practices.

1.2 Refresher training of fire brigade personnel should be established in regular planned meetings so that brigade members receive retraining every two years.

Response

1.0 Commonwealth Edison Company's current fire fighting training programs at its operating stations covers the items listed in Staff Position 1.0. However, the reference to "classroom instruction" should be modified to "instruction" because several items listed are accomplished during drills and actual fire fighting conditions.

1.1 Commonwealth Edison Company's fire fighting training program at its operating stations already includes training in fire fighting tactics and fire planning practices and, thus, meets Staff Position 1.1 above. In addition, the Company routinely reviews commercially available training programs for their applicability in increasing the fire fighting expertise of the station personnel.

2.2 Commonwealth Edison Company's retraining of fire brigade personnel at all its operating stations meets the Staff Position in 1.2 above.

Identification

PF-6 (Zion) - Control of Combustibles

Staff Position

The licensee should establish specific written procedures for items "a" through "h" as discussed in "Licensee Proposal" section of this Staff Position.

Licensee's Proposal

The licensee indicates that their present administrative controls evaluate and determine corrective action for controls to:

a. minimize the amount of combustibles that a safety-related area may be exposed to;

b. govern the use and storage of combustibles, flammable and explosive materials such as flammable gases and liquids, HEPA and charcoal filters, dry unused ion exchange resins or other combustible supplies in safety-related areas;

c. remove all waste debris, scrap, rags, oil spills or other combustibles from the work areas following the completion of the work activity or at the end of each work shift, whichever is sooner;

d. assure that all wood used in safety-related areas is treated with a flame retardant;

e. require periodic inspections for accumulation of combustibles;

f. govern transient fire loads during maintenance and modifications such as combustible and flammable liquids, wood and plastic products, spilled oil, oil drums, and other combustible materials in safety-related areas;

g. require an in-plant review of proposed work activities to identify potential transient fire loads; and

h. specify the additional fire protection needed to minimize the hazards introduced by the transient fire load.

Response

In addition to an indoctrination program covering radiation protection, plant security and proper responses during fire situations Commonwealth Edison Company issues to all of its generating station employees the following two handbooks:

1. Work Practice Manual for Generating Stations and

2. "Safety is in Your Hands," Handbook of Safety and Accident Prevention Rules for Commonwealth Edison Employees.

These handbooks cover the proper use of tools, protective devices and procedures, material handling, and operating procedures for all work areas at the generating stations. All employees are instructed to familiarize themselves with the contents of these handbooks and to adhere to the rules and work practices contained therein.

In addition, at all Company stations, bid specifications for work in safety-related areas specify the use of fire retardant materials. Also, by procedure the stations are inspected on a per shift basis and a routine cleaning schedule is implemented to ensure station cleanliness.

Identification

PF-6 (Dresden) In-Plant Review of Work Requests

Staff Position

Work requests involving plant systems in safety-related areas and areas presenting a hazard to safety-related equipment, along with provisions for additional fire suppression, should be reviewed for fire protection impact by the Fire Marshall or an equally qualified individual.

Response

Commonwealth Edison Company's in-plant review of work requests at its operating stations conforms to the Staff Position.

Identification

PF-7 (Zion) - Fire Protection Quality Assurance Program

Staff Position

The licensee should conduct their Fire Protection QA Program under the requirements of CE's QA Topical Report, CE-1A, (Current Revision) to assure proper compliance to all 10 criteria quality assurance requirements of Appendix A to the Branch Technical Position, APS B9.5-1 as detailed in Attachment No. 6 (Reference No. 2.0 and 3.0 above).

Response

Same as response to Item 3 in Attachment 1 of this letter.

Identification

PF-7 (Dresden) - Control of Ignition Sources: Smoking

Staff Position

Smoking should be prohibited in all safety-related areas, except where "smoking permitted" areas have been specifically designated by a responsible member of plant management, and in areas containing flammable or potentially explosive materials or atmospheres that present a hazard to safety-related equipment. These areas should be identified with "No Smoking" signs.

Response

Commonwealth Edison Company's present station policies conforms with this Staff Position.

Identification

PF-8 (Dresden) - Control of Ignition Sources: Grinding Operations.

Staff Position

Administrative controls should be instituted to protect safety-related systems/equipment from fire damage or loss resulting from work involving grinding operations. These controls should comply with the requirements of Attachment No. 4, Section 2.0.

Response

At all Commonwealth Edison Company stations when performing welding, open flame work, cutting or grinding, shields are used at the work location. If there is a potential for flames to go to a lower elevation, shield mats are used.