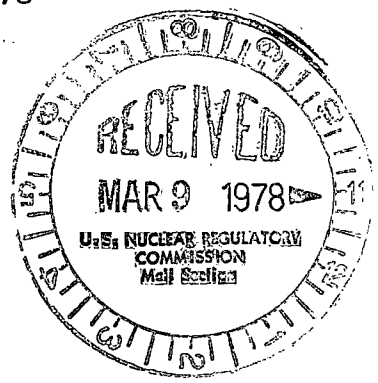
Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

January 24, 1978



Mr. Roby Bevan, Project Manager
Operating Reactors - Branch 2
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Dresden Station Units 2 and 3
Additional Information on
Administrative Controls and Yard
Loop for Fire Protection
NRC Docket Nos. 50-237/249

Reference (a): R. Bevan memo to M. S. Turbak dated
December 6, 1977

Dear Mr. Bevan:

Attached are three copies of Commonwealth Edison's response to NRC positions PF.26, PF.27, PF.28, PF.29, PF.30, PF.31, and PF.32 transmitted by Reference (a). These responses concern fire protection administrative controls and yard loop at Dresden Station. They arose from a site visit by Messrs. Cal Heit and J. Riopelle.

Please refer any further questions you might have on this matter to this office.

Very truly yours,

M. S. Turbak

M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors

attachments

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DRESDEN UNITS 2 AND 3
DOCKET NOS. 50-237/249
ADMINISTRATIVE CONTROLS AND YARD LOOP

PF.26 Hydrant Curb Gate Valves

Hydrants on the yard loop should have curb gate valves if the isolation of the hydrant by the use of yard loop sectionalizing valves prevent the supply of fire water to standpipe or water suppression systems protecting safety-related areas.

Response:

The isolation of hydrants from the yard loop has been considered and can be accomplished with existing equipment without preventing the supply of water to standpipe or water suppression systems protecting safety-related areas.

Sectionalizing valves, some hydrant curb gates, and the fire header divided into several loops, are utilized at Dresden to assure that isolation of the fire header for repair will not affect the supply of fire water to suppression systems protecting safety-related areas.

PF.27 Hose Nozzles

All nozzles should be checked to insure that their application is correct. Hose nozzles used in electrical equipment areas should go from off to spray mode before straight stream mode or if the hose nozzle fulfills no other fire protection function it should not be equipped for straight stream mode.

Response:

The adjustable nozzles at Dresden operate from off to straight stream to narrow spray then wide spray patterns. Nuclear Mutual Limited (NML), Commonwealth Edison's Fire Insurance Underwriters accepts the nozzles presently used at Dresden, in accordance with N.F.P.A.14.

Electrical fire fighting techniques are reviewed including proper use of adjustable nozzles at the annual training sessions required for Dresden Fire Brigade Members.

PF.28 Water Supply Pressure and Flow

The fire water supply should be capable of providing a residual pressure of 65 psig at the nose nozzle when flowing 100 gpm. Hose stations at the top of the standpipes should be flow tested or a hydraulic analysis made to verify that they comply with Section 541 of NFPA 14.

Response:

There are four sets of pumps in the Dresden fire water system; the Dresden 2&3 fire pump, the Dresden 1 fire pump, the Dresden 2&3 service water pumps, and the Dresden 1 screen wash pumps. For the most conservative results the Dresden 1 screen wash pumps were chosen as the water supply for this analysis.

The screen wash pump is capable of producing 2000 GPM at 62.5 psi. The operating curve indicates that 100 GPM is available at 130.0 psi.

The elevation of the hose connection is 613'-0". The elevation of the screen wash pump discharge flange is 510'-11". The elevation difference is 102'-1" which equates to a pressure differential of 44.2 psi.

Deducting 44.2 psi from 130.0 psi and also deducting the required 65.0 psi, the pressure available for friction loss in the piping between the hose outlet and the pump flange is 20.8 psi.

The friction loss per foot for 100 GPM flowing through 8" piping with a Hazen-Williams coefficient of C=100 was determined. This friction loss is 0.000173 psi per lineal feet of pipe. Dividing this friction loss into the available psi after deducting the required pressure for the 100 GPM and the elevation difference, namely 20.8 psi, results in a total length of pipe of 120,231.21 ft. There is less than 120,231 feet of piping between the hose outlet and the pump at the Dresden Station, therefore 100 GPM of water for fire protection at 65 psi is available at the outlet of the uppermost fire hose station in the Turbine Building.

PF.29 Barricades

Barricades should be provided to protect hydrants, hose house and post indicators from motor vehicle damage.

Response:

Barricades are provided around P.I.V.'s and hydrants in the yard loop. As pointed out in Mr. Riopelle's report some P.I.V.'s extend above the barricades and some barricades are damaged. These barricades will be repaired or replaced.

PF.30 Hydrant Stem Interference

Where the location of post indicator valves limits the rotation of a hydrant stem wrench, a ratchet stem wrench should be provided or the post indicator valve relocated to remove the interference. The hydrant pentagon stem nuts should be replaced where they have been damaged.

Response:

The hydrants stem interference problem will be investigated. A ratchet type hydrant wrench or modified hydrant wrench will be made available so that hydrant stem nuts will not be damaged. Present damaged hydrant nuts will be replaced.

PF.31 Curbs at Hose Houses

Curbs should be provided to prevent soil erosion from backing the doors to hose houses.

Response:

Hose houses are inspected monthly following an established operating surveillance. The doors of the hose houses will be inspected to assure accessibility.

PF.32 Hose House Equipment

Each hose house should be checked to confirm that it is properly equipped in accordance with NFPA-14, or the following list of accessories is recommended:

- 250 feet 2½" hose
- 200 feet 1½" hose
- 2 - 2½" hydrant gates
- 1-2½" adjustable hose nozzle
- 2-1½" adjustable hose nozzles
- 2-2½" double female connections and assorted gaskets
- 1-2½ x 1½ inch adapter
- 1-2½ x 1½ inch gated wye
- 1-each, fire axe: hose clamp; and forcible entry tool
- 2-hose spanners
- 2-hydrant wrenches

Response:

Each hose house will be investigated to assure compliance with NFPA 14.