

OCT 5 1982

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Document Control (STN 50-454/455/456/457)  
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Docket Nos.: STN 50-454, STN 50-455  
and STN 50-456, STN 50-457

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Mr. Louis O. DelGeorge  
Director of Nuclear Licensing  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

Dear Mr. DelGeorge:

Subject: Review of Fire Protection Program for Byron/Braidwood

In the process of our continuing review of the Byron/Braidwood fire protection program, we have identified a number of deviations from the Chemical Engineering Branch Technical Position 9.5-1. You are requested to respond to the deviations, which are listed in Enclosure 1, by providing justification for each deviation or by modifying your program to eliminate these deviations.

In addition, we have reviewed the six open items listed in Section 9.5.1.7 of the Byron SER in light of additional information you have recently submitted. The current staff positions are given for four of the items in Enclosure 2. The other two items, safe shutdown and alternate shutdown capability, are currently under review. You are requested to respond to these staff positions by stating your position with justification or by referring to an earlier submittal if your position and basis are unchanged. You should contact the Byron project manager, after our receipt of your response, to set up an appeal meeting if needed.

Sincerely,

Original signed by:  
B. J. Youngblood

B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

Enclosures:  
As stated

cc w/encls.: See next page

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| DATE    | 10/4/82   | 10/5/82      |  |  |  |  |  |

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Enclosure 1  
Summary of Deviations from CMEB 9.5-1  
In the Byron Fire Protection Program

1. The applicant's submittals do not indicate if any self-contained positive pressure air masks are reserved only for fire brigade use as stipulated by Section C.3 of CMEB 9.5-1. In addition, the applicant has not committed to provide an on-site, 6-hour supply of reserve air and extra air bottles for fire brigade breathing apparatus.
  
2. Fire pump alarms indicating pump running and driver availability are provided in the control room for the motor-driven fire pump. The diesel fire pump alarms for these conditions indicate only as a trouble alarm in the control room. "Failure to start" alarms not provided as stipulated by Section C.6.a of CMEB 9.5-1. Separate alarms should be provided in the control room to indicate pump running, driver availability and failure to start for each pump. In addition, low fire main pressure should also be alarmed in the control room.

3. The applicant has not supplied sufficient information to provide reasonable assurance of the reliability of the fire protection water supply (Section C.6.b). Specifically, the applicant proposes to use the basin of the cooling tower as a source of water for fire protection. We need to know if the required quantity of water (336,000 gallons) will always be available from the basin during all modes of plant operation.

The valve arrangement at the fire pumps is such as to prevent pumping capability by the diesel pump during testing of the motor driven pump. This must be changed to assure that one pump is available at all times to supply the required fire flow.

The applicant has provided cross-connections between the fire protection and ESW systems to provide water to standpipe hose stations in the event of a SSE. The applicant needs to verify that the ESW system can supply at least the two most hydraulically remote hose stations with adequate flow and pressure. In addition, check valves should be provided in the cross-connections to prevent using fire protection water for any other purpose.

4. The design of the standpipe system does not conform to Section C.6.c of CMEB 9.5-1. Specifically, the following plant areas are not provided with adequate hose stream protection:

Zone 3.1-1, Unit 1 Electrical Cable Tunnel  
Zone 3.4A-1, Unit 1 Cable Riser Area  
Zone 4.1-1, Unit 1 Computer Room  
Zone 9.2-1, Diesel Generator Room 1A  
Zone 9.4-1, Diesel Generator Day Tank Room 1B  
Zone 10.1-1, Diesel Fuel Oil Storage Room 1B  
Zone 10.2-1, Diesel Fuel Oil Storage Room 1A  
Zone 11.6A-0, Laboratory HVAC Equipment Room

In addition, lengthy runs of 1½ inch pipe will be used to supply select hose stations. Hydraulic calculation will have to be provided to verify that an adequate quantity of water at sufficient pressure will be available at the hose nozzles.

5. The applicant has not committed to provide water-type portable fire extinguishers for the control room in conformance with Section C.7.b of CMEB 9.5-1.
6. The applicant has not committed to provide smoke detectors in all panels (including unventilated panels) in the control room that contain safe shutdown related circuitry (Section C.7.b).
7. The applicant has not committed to provide curbs at the entrance to each diesel generator room in conformance with Section C.7.j of CMEB 9.5-1.

Enclosure 2  
Chemical Engineering Branch/Fire Protection Section  
Summary of Staff Requirements to Resolve Open Items  
Byron Station Units 1 & 2  
Docket Nos. 50-454/455

(1) Lighting and Communication

In the Fire Protection SER, our concern was that the two repeaters for the portable radio communications units are exposed to fire damage, which would result in the loss of the emergency communication system. The two repeaters are located adjacent to one another on the roof of the instrument shop, on the turbine floor adjacent to the control room. Fire protection for this area consists of portable fire extinguishers and manual hose stations. This protection is insufficient to preclude loss of both repeaters due to a single fire and does not conform with Section C.5.g of BTP CMEB 9.5-1. To conform to this guideline, the applicant should either provide a fixed, automatic fire suppression system to prevent a fire from affecting both repeaters or should separate the repeaters by means of an acceptable fire barrier or relocate one repeater to another fire area.

(2) Sprinklers in the cable spreading rooms

In the SER, our concern was that the protection for the cable spreading rooms was insufficient to prevent fire damage. The applicant has proposed gaseous fire suppression systems to protect these areas. The protection alone is insufficient to provide reasonable assurance that no fire damage will occur and does not conform with Section C.7.c of BTP CMEB 9.5-1 which stipulates that in the primary fire suppression system in cable spreading rooms be a water-based system. A water based system offers the advantages of being: proven effective, less complicated in design, more dependable, able to discharge the fire suppression agent continuously and for long periods of time.

A gaseous fire suppression system is less effective on cable fires; more complex in design and more prone to failure; is subject to the inability to maintain the design concentration of gas by virtue of unprotected room openings; and has a limited, finite amount of fire suppressing agent.

To conform to the above guideline, the applicant should provide either an automatic water system such as closed-head sprinklers, open-head deluge system, or a directional water spray system, or the applicant should provide a manually activated water suppression system as a supplement to the proposed gaseous fire suppression systems.

(3) Oil Collection System for RCP

The staff has evaluated the applicant's request and technical basis for an exemption from this requirement. In order to proceed in its review, the staff needs additional information, specifically: documentation of the cost of installing a similar system at the applicant's Zion Station and information on the actual exposures incurred from changing the mechanical seal before and after the oil collection system was installed.

(4) Hydrogen Line Routing

It is the staff's position that the applicant must strictly conform to Section C.5.d(2) of BTP CMEB 9.5-1 as it relates to the routing of hydrogen piping.