



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

November 20, 1978

50-155R
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Docket No. 50-155

Consumers Power Company
ATTN: Mr. David Bixel
Nuclear Licensing Administrator
212 West Michigan Avenue
Jackson, Michigan 49201

Gentlemen:

By letter dated March 29, 1978, we provided you a request for information and staff positions resulting from our initial review of your report "Fire Protection Program Evaluation", dated March 29, 1977. We have reviewed your response dated July 14, 1978 and have performed additional review during a visit to the Big Rock Point plant October 10-13, 1978. Supplemental requests for additional information and staff positions resulting from our review and site visit are enclosed.

Most of the enclosed requests and positions were discussed with you during the site visit. The specific information requested is identified in Enclosure 1 and is a continuation of the request dated March 29, 1978. The staff positions are identified in Enclosure 2 and also are a continuation of the positions dated March 29, 1978. The list of meeting attendees of the site visit meeting is included as Enclosure 3.

Since most of the requests and positions were discussed with you during the site visit, please provide your written response by December 4, 1978.

Sincerely,

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosures:

1. Request for Additional Information
2. Staff Positions
3. List of Attendees

cc w/enclosures:
See next page

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Consumers Power Company

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cc w/enclosures:
Mr. Paul A. Perry, Secretary
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Judd L. Bacon, Esquire
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Hunton & Williams
George C. Freeman, Jr., Esquire
P. O. Box 1535
Richmond, Virginia 23212

Peter W. Steketee, Esquire
505 Peoples Building
Grand Rapids, Michigan 49503

Charlevoix Public Library
107 Clinton Street
Charlevoix, Michigan 49720

ENCLOSURE 1
REQUESTS FOR ADDITIONAL INFORMATION
BIG ROCK POINT FIRE PROTECTION
DOCKET NO.: 50-155

32. The CPC response of July 14, 1978 to NRC request item #1 provided drawings showing the required rating of critical fire barriers. Verify that ventilation duct, electrical cable, piping, and doorway penetrations of these barriers will be protected to a rating equivalent to that required of the fire barrier. Justify those that will not be so upgraded.
33. Describe the measures to be taken for the power and control circuitry of the valves on the shutdown cooling letdown line to preclude a fire causing these valves to both open.
34. Verify that self contained battery powered lighting units will be provided in access ways to safety related areas and in the control room.
35. The CPC letter of October 6, 1978 to NRC indicates that test results to demonstrate the adequacy of cable penetration firestops at Big Rock Point were submitted on the docket for the Palisades facility for which the tests also apply. Provide drawings and a description of final firestop design to be used at Big Rock Point.
36. Provide calculations to demonstrate that either fire pump can supply enough water at sufficient pressure for all of the sprinklers in the condenser - pipe tunnel area, in addition to supplying hose lines for manual back-up fire suppression, and supplying make-up water for the emergency condenser.
37. Provide details of the floor drain system to show that the drain system cannot spread fire involving combustible liquid leaks into areas containing safe shutdown equipment.
38. Provide the results an analysis of the potential for damage to safe shutdown equipment by a hydrogen explosion in the off-gas system.

39. The July 14, 1978 response to item 1.d indicates that certain fire doors are not alarmed, locked or equipped with a fusible link closure device. Identify those existing and proposed fire doors that will not be alarmed, locked or equipped with a fusible link closure device.
40. Page IV-66 of the March 29, 1977 comparison to BTP 9.5-1 indicates that spent HEPA filters are stored in metal containers and placed in the baler house, but does not address where these are normally used. Identify where the HEPA filters are installed in the plant, any fire protection provided on these filters, and potential fire hazard to safety related equipment.
41. Verify that junction boxes in the electrical equipment room for the RDS system are drip-proof.
42. For the safety combustion controls on the auxiliary boiler, identify those provisions of NFPA 85, (if a single burner boiler) or NFPA 85D, (if a multiple burner boiler) which are not met. Justify the adequacy of the boiler controls to prevent auxiliary boiler explosions for those provisions not met.

ENCLOSURE 2
STAFF POSITIONS
BIG ROCK POINT FIRE PROTECTION
DOCKET NO.: 50-155

- *P5 A capability independent of cabling and equipment in the control room, electrical equipment room, penetration areas, and large oil hazards should be provided to achieve safe shutdown conditions without reliance on off-site power. This capability should be provided with controls at a single control panel and should include the following:
- a. Emergency Condenser (at least one functional loop) including power and control for both emergency condenser outlet valves;
 - b. Power and control for the main steam stop valve;
 - c. Make-up capability to the shellside of the emergency condenser (it would be acceptable to rely on manual operation of a valve to align fire water for this function);
 - d. Make-up capability to the primary system (use of temporary connections, already made-up, to either diesel generator would be acceptable);
 - e. Emergency condenser water level instrumentation (shellside);
 - f. Primary system water level (steam drum).

Verify that safe shutdown can be achieved if the above capability is lost due to a fire and if off-site power is not available. Describe how this would be accomplished (i.e., describe how the plant could be presently shutdown without using the emergency condenser and without relying on off-site power).

- *P6 Measures should be taken to preclude the potential for a fire causing inadvertent actuation of the reactor depressurization system (RDS), unless it can be shown that the potential for such an event is precluded by the design of the system. Measures to be taken should include a fixed water suppression system, or insulation of RDS conduits, at the penetration area inside of containment.

- *P7 To protect against a fire resulting from an oil leak at a reactor recirculation pump, provide an oil collection system which will collect oil from all potential leak locations such as sight glasses, lines, bearings, external oil coolers, etc., and which will drain to a collection tank. As an alternative, provide a sprinkler system for the pumps and pit area. The sprinkler system valve may be manually actuated from the control room by means of a key operated switch as opposed to automatic actuation. For either alternative fire or smoke detection devices should be provided to alarm in the control room. If the sprinkler system alternative is chosen, the conduits and valve operators for the emergency condenser and the main steam isolation valve should be insulated to protect against their loss by fire for a one hour exposure.
- *P8 To protect the redundant fire pumps and service water pumps in the screenwell and pump house from a fire at the diesel driven fire pump, provide a sheet metal shield which extends from the floor to a few feet above the diesel pump in the area between this and the other pumps, or provide sprinkler system coverage to extinguish fires in the area of the diesel driven fire pump.
- *P9 Provide the results of an analysis of the release of radioactive material resulting from a fire in the baler house which consumes all loose combustible material not in a sealed drum. The results should include the distribution of isotopes released and the quantity of each.
- *P10 To extinguish fires, provide a portable water extinguisher at the Baler House.
- *P11 Install valved connections on the diesel fire pump discharge line, upstream from the pump gate valve, to permit fire hose lines to be laid between this point and the nearest fire hydrant. Provide calculations to demonstrate that the number of hose lines provided will supply sufficient water for manual fire suppression and safe shutdown requirements in the event of a pipe break in the single supply line between the fire pumps and the fire loop.
- *P12 Install 3-hour fire rated dampers in the ventilation ducts between the control room and the electrical equipment room which will close upon actuation of smoke detectors in the electrical equipment room.

- *P13 Existing and new fire detection and alarm systems should as a minimum have the following features:
 1. Automatic emergency power for all portions of the system during loss of off-site power;
 2. Electrical supervision of all circuits; and
 3. Fire detectors approved by Underwriters Laboratories, Inc. or Factory Mutual in sufficient number and proper placement to adequately cover all safety related areas requiring fire detections devices. Information should be provided which identifies the type and number of approved detectors that will be located in each area.

- *P14 Verify that the water spray system protecting the yard transformers will be returned to automatic operation by installation of a normally open valve which closes on an ECCS actuation signal.

- *P15 Establish a drafting site for off-site fire apparatus to take suction and pump into the fire loop.

- *P16 For each hose cart provide two (2) 2 1/2" hydrant hose gates, and one (1) 2 1/2" x 1 1/2" x 1 1/2" gated wye.

- *P17 Provide two (2) 2 1/2" Double Female Connections to be stored in a fire equipment supply room, or on a hose cart in the screen house.

- *P18 Provide not less than 2 explosion proof fire service type smoke ejectors of not less than 5000 cfm capacity each, with portable ducting.

- *P19 Provide an emergency breathing air supply capability sufficient to supply the fire brigade and operators for 6 hours at the rate of 3 bottles per man per hour (standard 1/2 hour rated bottles).

- *P20 Provide 8 suits of fire fighter's protective clothing to include coats, pants, boots, gloves, and helmets. (The OSHA hard hat, while not desirable, may be substituted in lieu of fire fighter's helmets).

- *P21 Inspect all yard hydrants for wet barrels prior to freezing winter weather and pressure test each hydrant after the freezing weather in the spring to assure that no freeze damage has occurred.

- *P22 Either realign or move hose station #10 in the electric equipment room to remove the obstruction to the hose station valve operating hand wheel.
- *P23 Provide a locking device to preclude unauthorized access to the dip-stick pipe opening to the below-grade diesel fuel tanks(s) in the vicinity of the screenhouse.
- *P24 Establish a control fire equipment supply room, or sub-depots strategically located where fire brigade equipment can be secured and held available for the fire brigade at all hours.
- *P25 The fire hazards analysis did not address the effects of fires in the electrical equipment room or containment cable penetration areas on fuel pool cooling; therefore, the following should be accomplished:

Provide a capability independent of the electrical equipment room and cable penetration areas to provide fuel pool cooling in the event of a fire in any of these areas, or provide a means to restore fuel pool cooling capability which may be lost as a result of fires in these areas that affect fuel pool cooling equipment. If repairs are necessary to restore this power, show by analysis the time available to make repairs, how this time is established from the standpoint of fuel pool design temperature limitations, and the methods and equipment to be used to provide cooling.

- *P26 Discussions with CPC personnel during out site visit of October 10-13, 1978, indicate that CPC would plan to delay implementation of staff position P5 until implementation of any modifications identified to be required by the SEP evaluation. To assure adequate capability to achieve safe shutdown in the interim period until staff position P5 is implemented, the following measures should be taken:
 1. Expedient implementation of modifications identified in the Big Rock Point Fire Protection Program Evaluation submitted March 29, 1977, modifications identified in the subsequent CPC submittal of July 14, 1978, and modifications required to satisfy staff positions P6 through P25 and items (2) through (6) of staff position P26. A schedule identifying final implementation for each of these modifications should be provided.
 2. Provide two Halon 1211 type and two pressurized water type portable extinguishers for the electrical equipment room to

allow judicious application of extinguishment;

3. Fire brigade drills should be conducted for all brigade members in the electrical equipment room, exterior cable penetration room, and interior cable penetration room within the next six months;
4. Prohibit any cutting, welding, grinding, open flame work, maintenance or repair operations in the electrical equipment room, exterior cable penetration room, or interior cable penetration area which may be accomplished in another area;
5. Develop emergency shutdown procedures delineating methods for making repairs to restore power and to operate equipment to achieve safe shutdown for fires that damage cabling in the electrical equipment room or cable penetration areas. A description of the repairs to be made and the methods to be used for shutdown should be submitted.

* At the meeting of October 13, 1978, at Big Rock Point facility, Consumers Power Company indicated that they would comply with these staff positions. Personnel at this meeting are identified in Enclosure 3.

ENCLOSURE 3

<u>NAME</u>	<u>COMPANY</u>
J. E. Knight	NRC
L. P. Herman	Rolf Jensen & Assoc.
K. R. Ridgway	NRC Region III
W. J. Hall	CPCO
R. C. Mahaney	CPCO
W. C. Cooper	CPCO
D. P. Hoffman	CPCO
R. W. Huston	CPCO
R. B. Dewitt	CPCO
D. A. Birel	CPCO
C. F. Sonnenberg	CPCO
D. S. Swem	CPCO
R. E. Berry	CPCO
J. H. Riopelle	BNL NRC
H. J. George	US NRC - Plant Systems Branch
D. L. Ziemann	NRC - ORB #2
S. J. Nowicki	NRC - Project Manager
G. D. Gubody	CPCO, QA-BRP
C. J. Hartman	CPCO - Plant Superintendent BRP
R. C. Price	CPCO Prop. Protection
D. DeMoor	CPCO Big Rock
R. Doan, Sr.	CPCO Big Rock Point Plant