

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000
April 8, 1985
LIC-85-142

Mr. James R. Miller, Chief
Office of Nuclear Reactor Regulation
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

References: (1) Docket No. 50-285
(2) Letter from OPPD (R. L. Andrews) to NRC (J. R. Miller)
dated January 9, 1985 (LIC-85-338)
(3) Letter from NRC (J. R. Miller) to OPPD (R. L. Andrews)
dated March 4, 1985

Dear Mr. Miller:

Fire Area 34B, Request from Exemption
from 10 CFR 50, Appendix R

The Omaha Public Power District received Reference (3) requesting additional
information about Fire Area 34B at the Fort Calhoun Station.

Pursuant to Reference (3), please find attached forty (40) copies of the
District's response.

Sincerely,



R. L. Andrews
Division Manager
Nuclear Production

RLA/CWN/dao

Attachment

cc: LeBoeuf, Lamb, Leiby & MacRae
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Mr. Robert D. Martin
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Mr. E. G. Tourigny, NRC Project Manager
Mr. L. A. Yandell, NRC Senior Resident Inspector

REQUEST FOR ADDITIONAL INFORMATION
APPENDIX R - REQUEST FOR EXEMPTION FA-34B
FORT CALHOUN STATION

REQUEST

1. The response to Question 1.b is not clear. Six valves are listed as being required to be closed. Five valves appear to be powered from Fire Area 34B-West and one from Fire Area 34B-East. It is not clear that the power can be removed from these valves if the fire is in 34B-West and does not trip the appropriate breakers and similarly the single valve in Fire Area 34B-East. Provide a description of the method to remove power from these valves assuming their respective fires. Provide a discussion of the effects of the loss of coolant as the result of these valves being open until they can be closed from outside of the control room (this assumes spurious operation due to damage of the control cable due to the fire).

DISTRICT RESPONSE

In the response to question 1.b, seven valves are listed as being required to be closed. These valves and their respective power sources are:

<u>Valve No.</u>	<u>Power Source</u>
PCV-102-1	MCC-3C1 (Fire Area 34-B East)
PCV-102-2	MCC-4B1 (Fire Area 34B-West)
PCV-103-1	Control Room (via AI-185 in 34B West)
PCV-103-2	Control Room (via AI-185 in 34B West)
TCV-202	AI-185 (Fire Area 34B-West)
HCV-240	AI-185 (Fire Area 34B-West)
HCV-249	AI-185 (Fire Area 34B-West)

As stated on page 3 of Reference (2), Fire Area 34B is now divided into two distinct, separate Fire Areas, 34B-East and 34B-West. The alternate shutdown capability described herein is for Fire Area 34B-West only. Therefore, it can be seen that power for valves PCV-102-1, PCV-103-1, and PCV-103-2 can be removed independent of Fire Area 34B-West. To remove power from valve PCV-102-2, all power to its motor control center, MCC-4B1, will be removed by opening circuit breaker 1B4B-2 at the 480V switchgear. This breaker is located in the switchgear room, Fire Area 36B, independent of Fire Area 34B-West. Additionally, PORV block valve, HCV-150, is in series with PCV-102-2. This valve is powered from MCC-3B1 located in Fire Area 34B-East and can be closed from the control room. Additional assurances against inadvertent opening can be obtained by opening breaker H02 at MCC-3B1 in Fire Area 34B-East.

Valves TCV-202, HCV-240, and HCV-249 are solenoid-operated valves powered from panel AI-185 which is located in Fire Area 34B-West. The method to remove power to these valves is to remove all DC power to panel AI-185. This is accomplished by opening circuit breaker number 16 at 125V DC bus no. 2 (EE-8G) which is located in Fire Area 36B, independent of Fire Area 34B-West.

Therefore, in the case of a fire in Fire Area 34B-West, the following circuit breakers outside of the control room must be opened:

Breaker No. 2 at 480V Bus 1B4B-2 (F.A. 36B)
Breaker No. 16 at 125V Bus No. 2 (F.A. 36B)
Breaker No. A01 at 480V MCC-3C1 (F.A. 34B-East)
Breaker No. H02 at 480V MCC-3b1 (F.A. 34B-East)

It is estimated that this can be accomplished within approximately 3-5 minutes following detection for a fire in F.A. 34B-West. The possibility of a fire causing spurious operation in this short a period of time is minimal. Valves PCV-103-1 and PCV-103-2 are pressurizer spray valves and spurious operation does not cause a loss of coolant. Valves HCV-240 and HCV-249 have a check valve in line with them and would, therefore, not lead to a loss of coolant. PORV's PCV-102-1 and PCV-102-2, and PORV block valve HCV-150 can be closed from Fire Area 34B-East. Inadvertent opening of these valves will result in a small break LOCA. This event is analyzed in the USAR and will be terminated as soon as power to these valves is failed. This will not result in uncovering of the core. Letdown valve TCV-202, as discussed above, can be closed in approximately 3-5 minutes. It is also backed up by fail closed valves LCV-101-1 and LCV-101-2. Inadvertent opening of TCV-202 will result in an uncontrolled letdown which is within the make up capacity of the charging pumps and therefore will not result in a LOCA.

REQUEST

2. The response to Question 1.f is concerned with the manpower to perform a safe shutdown and for the fire brigade. It appears that the minimum number of people required to perform a safe shutdown in the event of a fire is seven, and the minimum fire brigade size is five for a minimum number of people on site of 12. The list of personnel provided in the response only lists 10 people. Provide a revised response which clearly specifies the minimum personnel requirements and list each person, by title, for both groups.

DISTRICT RESPONSE

The response to question 1.f states that there are seven operators on site at all times, not that seven operators are required for safe shutdown of the plant. Although a minimum operating crew of seven persons is required, the Technical Specifications 5.2.2.g states:

"A fire brigade consisting of 5 members shall be maintained on site at all times #. The fire brigade shall not include the minimum shift crew necessary for safe shutdown of the unit (2 members).

Fire brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of fire brigade members provided immediate action is taken to restore the fire brigade to within the minimum requirements."

As detailed on Page 10 of Reference 2, the manpower requirements are for 5 fire brigade members, 2 operators in the control room, one STA in the control room, and an additional two operators available for the fire-safe shutdown procedures outlined in Reference 2 to accomplish Steps 1.e.2 and 1.e.3. Therefore, only ten persons (4 operators, plus an STA, plus 5 fire brigade members) are required for achieving safe shutdown and fire fighting. Manpower allocation is as follows:

Fire Brigade (per Standing Order G-28)

1 Shift Supervisor (Leader)
Water Plant Operator
Phone Talker
2 Security Personnel

Control Room (Tech. Spec 5.2)

Reactor Operator
Assistant Reactor Operator
Shift Technical Advisor

Room 81 (Auxiliary Feedwater Throttling)

*Auxiliary Building Operator

Switchgear Room

*Turbine Building Operator

*Required to accomplish steps 1.e.2 and 1.e.3 outlined in Reference 2.

REQUEST

3. Table 1 indicates that isolation of some of the alternate shutdown equipment is by means of fuses. Verify that no fuses will be pulled in order to isolate the equipment.

DISTRICT RESPONSE

Table 1 lists fuses at inverters EE-8K and EE-8L. These fuses were to be pulled to remove 120 VAC control power from panels AI-179 and AI-185 located in Fire Area 34B-West. This involves pulling out two fuses located at each inverter, EE-8K and EE-8L. We believe it is a simple operation and can be performed by available shift crew within 3-5 minutes of detection of fire. Rather than pulling fuses, this can be accomplished by the following means: (See Figure 8.1-1, Drawing D.2 of Table 4 in Reference (2)).

- Open breaker CB-22 at DC bus #1 (Fire Area 36A)
- Open breaker CB-6 at DC bus #2 (Fire Area 36B)
- Open feeder breaker to 120 VAC instrument bus AI-40C (Control Room)
- Open feeder breaker to 120 VAC instrument bus AI-40D (Control Room)
- Close bus-tie breaker between 120 VAC instrument buses AI-40A and AI-40C (Fire Area 42, Control Room)
- Close bus-tie breaker between 120 VAC instrument buses AI-40B and AI-40D (Fire Area 42, Control Room)

This method ensures that 120 VAC instrument and control power is removed from panels AI-179 and AI-185 in Fire Area 34B-West, thereby isolating shutdown equipment without pulling any fuses.

Alternatively, 15 amp circuit breakers may be installed in inverters EE-8K and EE-8L to facilitate isolation of AI-179 and AI-185 from Fire Area 34B-West. These inverters are scheduled to be replaced during the 1985 refueling outage and this possibility will be reviewed during the design of the modification.

REQUEST

4. We note that, in your discussion of alternative shutdown capability for Fire Area 34B, you reference technical specifications 2.2 (CVCS), 2.5 (steam and feedwater systems including auxiliary feedwater) and 3.9 (auxiliary feedwater). In your response to this letter, we also request that you (1) describe the testing performed on these systems, (2) specify which ones are tested on a monthly basis, and (3) provide the basis for not performing monthly testing for the ones not tested on a monthly basis.

District Response

- (1) Testing of the pumps, valves and piping in the Chemical and Volume Control System and the Auxiliary Feedwater System is done in accordance with Technical Specification 3.3(1)a which states the following:

In-Service inspection of ASME Code Class 1, Class 2, and Class 3 components and in-service testing of ASME Code Class 1, Class 2 and Class 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, as required by 10 CFR Part 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR Part 50, Section 50.55a(g)(6)(i).

The NRC approved Inservice Inspection Program for Fort Calhoun Station covers the testing that is performed. It also contains the exceptions to Section XI of the ASME B&PV Code that have been granted by the Commission.

In addition, Technical Specification 3.9(1) through (5) and Technical Specification Table 3-2 Item 22 and Table 3-3, Item 19 delineate other surveillance test requirements for the Auxiliary Feedwater System.

- (2) The following surveillance tests are performed monthly:
 - a. Auxiliary Feedwater System valve alignment checks per Technical Specification 3.9(1);
 - b. Auxiliary Feedwater flow transmitter channel check per Technical Specification Table 3-3, Item 19; and
 - c. Auxiliary Feedwater automatic initiation circuit function check per Technical Specification Table 3-2, Item 22.
- (3) The frequency of various surveillance tests performed on the CVCS and AFW System are based on the Fort Calhoun Technical Specification requirements, the ASME B&PV Code Section XI requirements and the NRC approved Inservice Inspection Program for Fort Calhoun Station. The past operating, maintenance and testing history of components in those systems has demonstrated that the presently established testing frequencies are adequate.