

October 27, 1982

Docket No. 50-155  
LS05-82-10-078

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Mr. David J. Vandewalle  
Nuclear Licensing Administrator  
Consumers Power Company  
1945 W. Parnall Road  
Jackson, Michigan 49201

Dear Mr. Vandewalle:

SUBJECT: RESOLUTION OF NUREG-0737 ITEM II.K.3.25, EFFECT OF LOSS OF A-C  
POWER ON PUMP SEALS - BIG ROCK POINT

We have completed our review of your response dated December 19,  
1980, as supplemented by the responses dated July 9, 1981 and February 5,  
1982 for NUREG-0737 Item II.K.3.25, Effect of Loss of A-C Power on Pump  
Seals. The enclosed Safety Evaluation supports our conclusion that this  
item is resolved for Big Rock Point.

Sincerely,

Original signed by/

Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing

Enclosure:  
Safety Evaluation

cc: See next page

*SE01*  
*DSM USE(18)*

8211020615 821027  
PDR ADOCK 05000155  
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*MULTI*

OFFICE	DL:ORB#5	DSI:RSB	DL:ORB#2	DL:ORB#5			
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DATE	10/27/82	10/26/82	10/25/82	10/27/82			

October 27, 1982

cc

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SAFETY EVALUATION OF CONSUMERS POWER  
COMPANY RESPONSE TO ITEM II.K.3.25  
OF NUREG-0737, EFFECT OF LOSS OF  
ALTERNATING-CURRENT POWER ON PUMP SEALS  
BIG ROCK POINT

I. Introduction

NUREG-0737 Item II.K. 3.25 requires that licensees should determine, on a plant-specific basis, by analysis or experiment, the consequences of a loss of cooling water to the reactor recirculation pump seal coolers. The pump seals should be designed to withstand a complete loss of alternating current (AC) power for at least two hours. Loss of AC power for this case is assumed to be loss of offsite power. The intent of this position is to prevent excessive loss of reactor coolant system inventory following an anticipated operational transient. Adequacy of the seal design should be demonstrated.

II. Evaluation

The licensee responded to this item by letter dated December 19, 1980, and supplemented their response by letters dated July 9, 1981 and February 5, 1982. Based on certain plant-specific features pertaining to the recirculation coolant pumps (RCP) at the Big Rock Point plant, the licensee elected to conduct tests at their own facilities of the O-ring seal material used in the RCP seals. The licensee stated that the test results demonstrated that the O-rings maintained a water-tight seal at primary coolant conditions (1512 $\pm$ 3 psig; 583 $\pm$ 2 $^{\circ}$ F) for six hours. 580 $^{\circ}$ F is the normal operating temperature and represented

the highest temperature the seals would experience if cooling were lost. The duration of the test substantially exceeded the NUREG criteria. The licensee thus concluded that seal integrity had been adequately demonstrated.

### III. Conclusion

We have reviewed the licensee's submittals dated December 19, 1980, July 9, 1981, and February 5, 1982 and have evaluated the results of the tests conducted by the licensee to demonstrate RCP seal integrity. We have concluded, based on this information, that the licensee has adequately demonstrated that the seals used in the RCPs will maintain their integrity for periods in excess of the NUREG-0737 criteria for Item II.K.3.25. We therefore find that the licensee's response to this item is acceptable and that no modifications to the seals are necessary.