

JUN 29 1970

Docket No. 50-155

Consumers Power Company  
212 West Michigan Avenue  
Jackson, Michigan 49201

Attention: Mr. Robert L. Haueter  
Electric Production  
Superintendent - Nuclear

Gentlemen:

By letter dated February 9, 1970, Consumers Power Company responded to our letter of December 30, 1966, which requested the review of the Big Rock Point emergency core cooling provisions to determine the need, if any, for additional provisions to maintain containment integrity in the event of a major rupture of the primary coolant system. In our letter, we also suggested that an analysis be performed to determine the importance of emergency core cooling in maintaining containment integrity.

We have reviewed your letter and the three attachments thereto which describe and support your proposed modifications. These modifications consist of a second core spray system and other improvements in the engineered safety systems as identified on pages 3 and 4 of your letter and pages 5 and 6 of Attachment B. We recognize that at the present time the system design is in large part in the conceptual stage. Based on our review to date, we concur in your approach and we have tentatively concluded that:

1. The proposed redundant automatic low pressure core spray systems and modifications to achieve automatic redundant post-incident containment spray cooling should preserve containment integrity in the event of a major rupture of the primary system.
2. The proposed core spray system, when approved and operational, will eliminate the need for the temporary core flooding system installed for the centermelt fuel irradiation program.

8101150693

*Reply.*  
DU<sub>1</sub>

JUN 29 1970

3. The proposed additional modifications listed on page 5 of Attachment B will result in substantial improvements to the engineered safety systems.
4. The addition of a new 46 kV power line in March 1968 and the relatively low power output of the Big Rock Point plant (71 MWe, compared with the total capacity of the network, 3600 MWe) are important considerations in determining power reliability. This reliability is important to safety because of the dependence on off-site power for continued operation of a main feedwater pump and other essential equipment in the event of primary system breaks smaller than 0.05 square feet.

To complete our evaluation of the Big Rock Point ECCS capability, we will need the following information and analyses of small primary system breaks:

- a. A description of the feedwater injection connections to the steam drum and the stresses resulting from the introduction of cold feedwater.
- b. A list of the sources and the minimum volumes of stored feedwater available for make up to the primary system following small breaks.
- c. A description of the primary system leak detection methods and their sensitivity in terms of break size and time required for detection.
- d. A determination of the largest primary system break that can be tolerated without uncovering the core assuming normal and rapid cooldown procedures.
- e. A determination of the largest primary system break that can be tolerated without fuel clad melting assuming plant cooldown without off-site power. Describe the cooldown method. Discuss the operator actions that will be necessary including time availability.

Further, with respect to criteria to be used in establishing the final design, we request that two points be clarified:

JUN 29 1970

1. Will all additions and modifications to facility control and safety systems meet the requirements of IEEE-279 "Proposed IEEE Criteria for Nuclear Power Plant Protection Systems"?
2. Will the material specifications, fabrication methods and quality assurance ensure that no heavily sensitized stainless steel will be incorporated into the facility systems?

We believe that the proposed changes will significantly improve the emergency core cooling capability of the Big Rock Point reactor and should be pursued expeditiously. However, pending our review of the information herein requested, we cannot agree at this time that "the addition of this redundant core spray system will make Big Rock Point equivalent to BWR plants currently authorized for construction, with respect to loss-of-coolant accidents".

We note that prior to putting the modified system into operation, you plan to submit a request for license change. This request should be submitted prior to connection of equipment into existing systems and should include:

1. the final design of the proposed system;
2. proposed technical specification changes regarding operation and surveillance of the proposed system; and
3. a description of the pre-operational tests to be performed prior to plant operation with the modified systems, including acceptance criteria for each test.

Sincerely,

Peter A. Morris, Director  
Division of Reactor Licensing

DISTRIBUTION

PDR	D. J. Skovholt	cc: Judd L. Bacon, Esquire
✓ Docket File	R. H. Vollmer	Legal Department
DR Reading	D. L. Ziemann	212 West Michigan Avenue
DRL Reading	J. J. Shea	Jackson, Michigan 49201
Compliance, (2)	R. M. Diggs	
OGC (2)	S. H. Hanauer	

OFFICE ▶	DRL	DRL	DRL	DRL	DRL
SURNAME ▶	JJShea:sjg	ERFleury	DJSkovholt	FSchroeder	PAMorris
DATE ▶	6/22/70	6/24/70	6/24/70	6/25/70	6/27/70