D. Landsman

Consumers Power Company

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

June 28, 1976

Mr James G. Keppler
US Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

DOCKET 50-255, LICENSE DPR-20
PALISADES PLANT

On June 15, 1976, Mr G. Hein of the Palisades Plant staff reported to Mr K. Baker of your office that we were evaluating a question that had arisen and considered that it might be reportable under Technical Specification Section 6.9.2.a-8. The question involved the postulated loss of four primary coolant pumps due to flooding caused by a postulated seiche. This was classified as Event Report No 76-020.

After further review, we have concluded that the effects of seiches were appropriately considered in the design and construction of the Palisades Plant. Thus, we are no longer considering this item reportable and are, therefore, cancelling it. Some of the reasons for this conclusion are summarized in the attached letter.

Ralph B. Sewell

Ralph B. Sewell
Nuclear Licensing Administrator

JUN 30 1976

To Palisades Pla R ew Committee

From RBSewell, P-21-317

Date June 25, 1976

Subject REVIEW OF EFFECTS OF A SEICHE

Consumers Power Company

Internal Correspondence

cc BLHarshe, Covert
DABixel, P-21-319
HWKeiser, P-21-109

I have reviewed the following documentation with respect to how seiches were considered in evaluation of the Plant Design:

1) The references listed in DABixel's letter of May 27, 1976, to JGLewis/PRC.

2) Event Report PAL-76-020.

3) HWKeiser letter of June 21, 1976, to PRC.

I have concluded that the potential loss of four Primary Coolant Pumps due to flooding caused by a seiche is not an unreviewed safety question. In the following paragraphs I will attempt to outline the basis for my conclusion.

First, the Loss of Coolant Flow Incident described in Section 14.7 is an anticipated transient. An anticipated transient is something that is expected to occur several times or more during plant life. For anticipated transients a minimum transient DNB ratio limit of 1.30 has generally been established by the NRC as the acceptance criteria. This limit is established to insure that damage to the fuel will not occur for these moderate probability events. I note specifically that a simultaneous loss of four coolant pumps was not considered in this transient analysis because it was judged to be of very low probability. Section 14.7.4 of the FSAR states in part: "For the case of a single stuck rotor there will be some rods for which the transient DNB ratio drops below 1.30 however the very low probability of this incident allows acceptance of this condition." That statement also applies philosophically to the very low probability case of a simultaneous loss of all four primary coolant pumps.

FSAR Appendix A.2(g) describes the Plant design with respect to flooding as protected up to elevation 590 feet. This provides a margin of 7.3 feet above the highest reported modern lake level. Six (6) of these 7.3 feet are described as an allowance for seiche, thus, I would conclude that the possibility of a seiche was properly considered in the design of the Plant against flooding to the 590 foot level. I note that the bottom of the four primary coolant pump breakers are mounted at the 590 foot level.

A review of question 2.4 of Amendments 15 and 18 to the FSAR reveals the following key words. They are:

"Maximum increase"

"especially severe seiche"

"shutdown safely"

"with or without special procedures and provisions executed at the time of flooding."

The context of this question is an inextremis situation. It is intended to convey a very low probability event and asks what the maximum flooding level is that equipment required to obtain and maintain a safe shutdown condition would be functional. The answer given was 594 feet 8 inches and states that equipment required to obtain and maintain a safe shutdown condition would not be flooded until water level exceeded this value. This question did not intend to imply that the four primary coolant pumps could not trip sequentially. The probability is conveyed as extremely low as compared to anticipated transients.

The six foot allowance for a seiche appears conservative. Section 2.2.2(a) shows the greatest level change due to a seiche over an 105 year period to be 6 feet at Michigan City, Indiana and 0 at the same time at Holland, Michigan. Further, HWKeiser's calculations show the maximum level at Palisades to be much less than 6 feet.

Therefore, I have concluded that the FSAR has appropriately considered and evaluated the effects of seiches on the Palisades Plant and the design and construction of the Palisades Plant was in accordance with the requirements of the FSAR. Thus, my conclusion is that this item is not an unreviewed safety question and is not reportable in accordance with Section 6.9.2 a-8 of the Technical Specifications. Further, I believe that this event report should be closed out. With PRC concurrence, I will inform the NRC that we no longer consider this event reportable and are therefore canceling it.