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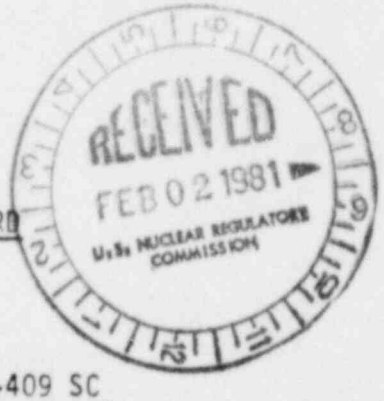

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DAIRYLAND POWER COOPERATIVE	)	Docket No. 50-409 SC
(La Crosse Boiling Water Reactor)	)	(Order to Show Cause)
	)	

NRC STAFF'S BRIEF IN SUPPORT OF ITS PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND PROPOSED FORM OF ORDER

Pursuant to 10 C.F.R. 2.754, the NRC Staff hereby submits its brief in support of its proposed findings of fact and conclusions of law with respect to the issues addressed at the evidentiary hearing in this proceeding, which was held on December 16 and 17, 1980, in La Crosse, Wisconsin. For the reasons set forth in this brief, the Board should adopt the NRC Staff's proposed findings of fact and conclusions of law and enter an order substantially in the form proposed by the Staff.

I. PROCEDURAL SETTING

The Board must determine in this proceeding the two issues set for hearing in the Director of NRR's Order to Show Cause of February 25, 1980, and the Commission's Order of July 29, 1980, which constituted this Board:

(1) Whether the licensee should submit a detailed design proposal for a site dewatering system; and

(2) Whether the licensee should make operational such a dewatering system as soon as possible after NRC approval of the system, but

no later than February 25, 1981, or place the LACBWR in a safe cold shutdown condition.[1/]

Upon admission of the Coulee Region Energy Coalition and Frederick M. Olsen III as consolidated parties in this proceeding, the Board established an initial schedule for discovery and motions with respect to matters, excluding seismic considerations, related to the foregoing issues.[2/] All parties have conducted discovery under the Board's initial schedule, and both the NRC Staff and the licensee filed motions for summary disposition. The consolidated parties did not respond to motions for summary disposition, which are still pending before the Board.

Because the Board thought that it would probably be unable to render an initial decision in this proceeding by February 25, 1981 - the date proposed in the Order to Show Cause by which the licensee was to make operational, if necessary, a site dewatering system - the Board scheduled a hearing "to consider the single issue of the risk to the public health and safety of extending the February 25, 1981 operational date for a dewatering system

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1/ See 45 Fed. Reg. 13,852 (Mar. 3, 1980) and 45 Fed. Reg. 52,290 (Aug. 6, 1980).

2/ Dairyland Power Coop. (La Crosse Boiling Water Reactor) LBP-80-26, 12 NRC 367 (1980). Consideration of seismic issues was deferred pending the Appeal Board's determination, which has now been rendered in ALAB-618, that the Licensing Board had the authority to consider the appropriate seismic parameters for judging liquefaction potential in this show-cause proceeding. Discovery on seismic matters will now commence on February 27, 1981. Prehearing Conference Memorandum (Jan. 6, 1981).

for some specific period of time".[3/] The evidentiary hearing was held on December 16 and 17, 1980, in La Crosse, Wisconsin. Both the NRC Staff and the licensee presented witness panels to sponsor pre-filed testimony and to respond to the Board's questions and cross-examination by the consolidated parties.[4/] The Staff also offered several exhibits which were introduced into evidence.[5/] The consolidated parties filed no direct testimony prior to hearing and presented neither witnesses nor other evidence at hearing.

II. OPERATION OF LACBWR PAST FEBRUARY 25, 1980, WITHOUT A SITE DEWATERING SYSTEM DOES NOT POSE AN UNDUE RISK TO PUBLIC HEALTH AND SAFETY

The testimony and evidence introduced by the NRC Staff and the licensee at December's evidentiary hearing showed in all respects that operation of

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3/ Memorandum and Order Scheduling Evidentiary Hearing and Prehearing Conference at 3 (Nov. 12, 1980). The Order to Show Cause does not require suspension of operation in the absence of installation of a site dewatering system, but rather the Order to Show Cause required a showing why such action should not be required by some additional order. Thus, suspension of operation on February 25, 1981, would require the issuance of an additional order. The uncontroverted evidence of record unequivocally demonstrates that issuance of any such additional order would be without any foundation.

4/ The Staff's witnesses were Dr. Leon Reiter, Mr. Howard A. Levin, and Mr. John T. Greeves, all of the Division of Engineering in the Office of Nuclear Reactor Regulation.

5/ In addition to the prefiled testimony and professional qualifications of the Staff witnesses, the following Staff exhibits were received into evidence at hearing: a memorandum from R. E. Jackson to D. Crutchfield concerning "Initial Review and Recommendations for Site-Specific Spectra and SEP Sites" (Exh. 4, received at Tr. 88); the Staff's August 29, 1980 Safety Evaluation (Exh. 5, which follows Tr. 96); NUREG/CR 1582, Vols. II & III (Exh. 6 & 7, received at Tr. 155); and a chart comparing the initial representation of the La Crosse site specific spectra with a Reg. Guide-anchored .12g curve (Exh. 8, received at Tr. 202).

the LACBWR will not pose an undue risk to public health and safety if a site dewatering system is not made operational by February 25, 1981. This evidence also supports the ultimate determination that should be reached in this proceeding: that installation of a site dewatering system is unnecessary to assure adequate protection of public health and safety. The consolidated parties, who are the only proponents of an order to require a dewatering system, presented no evidence that would support suspension of the LACBWR's operation pending a final determination as to whether a dewatering system is necessary to assure safe operation. Moreover, the consolidated parties have not filed, to the best of the Staff's knowledge, any findings of fact based even on their cross examination at hearing.

The Staff presented testimony and evidence concerning both the liquefaction potential and the seismic hazard at the site because evidence on both matters must be taken into account in determining whether reasonable assurance exists that the LACBWR can be operated safely without a site dewatering system.[6/] As more fully described infra, the Staff's evidence showed (1) that the soils beneath the pile-supported structures on the LACBWR site are safe against liquefaction if an earthquake of magnitude 5.0-5.5 producing a peak ground acceleration of 0.12g occurred, and (2) that the occurrence of a magnitude 5.0 - 5.5 earthquake producing a 0.12g peak ground acceleration is a conservative representation of seismic hazard at La Crosse and has a low probability of occurrence. In setting the framework

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6/ The Staff also responded to the Board's questions, save question 1(b), concerning liquefaction potential set forth in the Board's Memorandum of December 5, 1980.

against which to judge the acceptability of continued operation, the Board instructed the parties that their analyses "should assure a safe shutdown earthquake producing peak ground acceleration of 0.12g."[7/] Since the soils under the pile-supported structures are safe against liquefaction if such an earthquake occurred, the Board must find operation of the LACBWR beyond February 25th poses no undue risk to public health and safety.

While the licensee and its consultant Dames and Moore had conducted earlier investigations of soil properties at the LACBWR site, the results of the July 1980 test boring program led to the Staff's conclusion that the LACBWR's pile-supported structures are safe against liquefaction if a magnitude 5.0 - 5.5 earthquake producing ground acceleration of 0.12g occurred.[8/] The results of the test boring program indicate that the density of the soils beneath the containment building, the turbine building, and the LACBWR stack is greater than the density of the soils in the free field at the site.[9/] This increased soil density is attributable to the driving of piles beneath these structures during their construction.[10/] The density of the soils under the pile-supported structures is such that these soils will not liquefy if a magnitude 5.0 - 5.5 earthquake with a 0.12g peak ground

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7/ Memorandum and Order Scheduling Evidentiary Hearing and Prehearing Conference, at 3 (Nov. 12, 1980).

8/ Safety Evaluation Report, following Tr. 96; Staff's Proposed Finding of Fact Nos. 14-17, 24.

9/ Staff's Proposed Finding of Fact No. 16.

10/ Id., No. 17 & 25. Soil densification is preferable to reliance on a dewatering system to preclude liquefaction. Id., No. 19.

acceleration occurred.[11/] In sum, the experts for both the Staff and the licensee concluded, considering all relevant factors, that the soils under the pile-supported structures are safe against liquefaction.[12/] The consolidated parties presented no evidence to contradict this essential conclusion. Hence, installation of a dewatering system to preclude liquefaction at 0.12g is unnecessary to protect public health and safety. For those structures (i.e., the crib house and underground service water piping) where liquefaction in the free field remains a concern, the licensee has committed to installation of a dedicated safe shutdown system to preclude reliance on these structures in the event an earthquake occurred.[13/]

In addition to testimony and evidence concerning liquefaction potential, the Staff presented testimony concerning the seismic hazard at the LACBWR site. The Staff estimates that the return period for a magnitude 5.0 - 5.5 earthquake producing a peak ground acceleration of 0.12g is on the order of 1,000 to 10,000 and may even be on the longer end of this range.[14/]

Quantification of overall seismic risk at La Crosse requires consideration of many factors, of which seismic hazard is but one.[15/] In addition

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11/ Id., Nos. 17 & 18. Even if such a seismic event occurred simultaneously with flooding conditions at the site, the soils would be safe against liquefaction. Id., Nos. 20-23.

12/ Id., Nos. 17, 24, 36-37.

13/ Id., Nos. 26-27.

14/ Id., Nos. 28-32. The difference between this estimate and the licensee's estimate (Dairyland Findings of Fact Nos. 26-30) of return period is not significant for purposes of the Board's decision here.

15/ Id., Nos. 33-35.

to the probability that a particular seismic event will occur, one must consider for example, whether liquefaction will occur as a result of that seismic event, whether in turn there is some pathologic response of the facility to that liquefaction, and whether that structural or mechanical response results in radionuclide dispersion.16/ Given the low probability that such events will occur and the uncontroverted evidence that the soils at the LACBWR site are safe against liquefaction in the event a magnitude 5.0 - 5.5 earthquake producing a 0.12g ground acceleration occurs, there is reasonable assurance that the LACBWR can operate safely without installation of a dewatering system.

III. CONCLUSION

The evidentiary record in this proceeding clearly demonstrates that installation of a site dewatering system is not necessary to protect public health and safety even if a magnitude 5.0 - 5.5 earthquake producing a 0.12g peak ground acceleration occurred. The record also shows that such an earthquake is a reasonable estimate of seismic hazard at La Crosse and has a low probability of occurrence. On this basis, the Board should find at the very least that, pending the conclusion of this proceeding, operation of the LACBWR poses no undue risk to public health and safety. No order should be entered that would suspend operation of the LACBWR as proposed in the Order

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16/ Id., Nos. 34-35.

to Show Cause pending the conclusion of this proceeding.[17/] Accordingly, the Staff hereby requests that the Board

(1) Adopt the Staff's Proposed Findings of Fact and Conclusions of Law

(2) Enter an order in substantially the form proposed by the Staff.

Respectfully submitted,

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Karen D. Cyr
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Dated at Bethesda, Maryland,
this 30th day of January, 1981.

17/ See note 3 supra.