11/14/80

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 MOTION FOR SUMMARY DISPOSITION

I. THE MOTION

Pursuant to 10 CFR 2.749 of the Commission's Rules of Practice, the NRC Staff moves the Atomic Safety and Licensing Board for summary disposition in the affirmative of the basic issue in this proceeding: whether for an earthquake up to magnitude 5.5 with a peak ground acceleration of .12g or less, the soils under pile-supported structures at the LACBWR site are safe against liquefaction. In support of its motion, the Staff will show by affidavit and argument that no material issue of fact exists to require litigation of this issue and that summary disposition should be granted as a matter of law.

II. PROCEDURAL SETTING

The proceeding was initiated on February 25, 1980, when the Director of the Office of Nuclear Reactor Regulation (NRR) issued an Order to Show Cause under 10 CFR 2.202 to the licensee, Dairyland Power Cooperative (DPC). The Order was issued on the basis of the NRC Staff's concern over potential liquefaction of soils at the La Crosse Boiling Water Reactor (LACBWR) if an earthquake up to magnitude 5.5 with a peak acceleration of 0.12g occurred. 45 Fed. Reg. 13,850 (Mar. 3, 1980). Based on its preliminary analyses, the Staff concluded tentatively in February 1980 that liquefaction of soil might

occur at the LACBWR site to such a degree that DPC should be required to take mitigating measures to assure future safe operation of the LACBWR. Because a site dewatering system was conceived by the Staff as a possible method for precluding liquefaction at the LACBWR site, the Order required DPC to show cause why it should not design and install a dewatering system for the site.

The licensee answered the Order to Show Cause on March 25, 1980, by submitting reasons why it believed it should not be required to design and install a dewatering system. The licensee's answer contained a contingent request for a hearing in the event that the Director of NRR did not find that the licensee had shown good cause. The Coulee Region Energy Coalition (CREC) and Frederick M. Olsen III filed requests for a hearing within the time prescribed by the Order to Show Cause. As part of its evaluation of the licensee's answer, the Staff submitted requests for additional information to the licensee pursuant to 10 CFR 50.54(f). In submittals dated July 14, 1980, and July 25, 1980, the licensee formally responded to the Staff's requests for additional information.

On July 29, 1980, the Commission designated an Atomic Safety and Licensing Board to consider and rule on the requests for a hearing and, if a hearing was required, to conduct such hearing solely on the issues identified in the Order to Show Cause. 45 Fed. Reg. 52,290 (August 6, 1980). In its Memorandum and Order of August 5, 1980, the Licensing Board asked for the views of the Staff and the licensee on the requests for a hearing filed by CREC and Mr. Olsen. The Staff indicated in its response to the requests for a hearing that the Staff's position had changed with respect to imposition of an order

requiring the licensee to design and install a dewatering system. Based on the Staff's evaluation of the licensee's answer and further evaluations and information, the Director of NRR determined that the licensee had shown good cause why it should be not required to design and install a site dewatering system.[1/]

At the prehearing conference held in La Crosse, Wisconsin, on September 11, 1980, the Licensing Board ruled that both CREC and Mr. Olsen had established a right to a hearing on the Order.[2/] The Board consolidated the two parties.

Under the Order to Show Cause, the Board must determine whether the licensee should design a site dewatering system and whether the licensee should make such a system operational by February 25, 1981, or place the reactor in a cold shutdown condition.[3/] The consolidated parties have not been required as yet to specify particular contentions. The Board has established a discovery schedule and has provided the opportunity to file motions for summary disposition.[4/] Pursuant to the Board's discovery schedule,

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1/ The Director's finding was contained in a letter of August 29, 1980, to F. Linder of DPC, which enclosed a safety evaluation prepared by NRR. The Director's letter and the accompanying safety evaluation were attached to the NRC Staff's Response to Requests for Hearing (Aug. 29, 1980). The Director's finding was based on the Staff's evaluation of the licensee's answer to the Order to Show Cause and the licensee's responses to the Staff's additional request for information pursuant to 10 CFR 50.54(f).

2/ Transcript at 33. Prehearing Conference Order Granting Requests for a Hearing and Certifying Question to Appeal Board, LBP-80-26, at 3, 12 (Sept. 30, 1980).

3/ 45 Fed. Reg. at 13,852.

4/ Transcript at 65-66; Prehearing Conference Order at 14; the schedule was slightly modified by subsequent Orders dated October 20, 1980 and November 10, 1980.

the Staff filed discovery requests with the consolidated parties on October 2, 1980. On October 28, 1980, the consolidated parties filed responses to the Staff's interrogatories.

III. LEGAL STANDARDS FOR SUMMARY DISPOSITION

The procedures relating to motions for summary disposition are found in 10 CFR 2.749. These procedures are analogous to those in rule 56 of the Federal Rules of Civil Procedure, which relate to motions for summary judgment. Alabama Power Co. (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 6 AEC 210, 217 (1974). Both the Commission and the Appeal Board have encouraged the use of summary disposition to resolve issues where the intervenor has failed to establish that a genuine issue exists. Northern States Power Co. (Prairie Island Nuclear Generating Station, Units 1 and 2), CLI-73-12, 6 AEC 241, 242 (1973); Mississippi Power & Light Co. (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424-25 (1973). The Appeal Board has explained that a motion for summary disposition "enables the court to go beyond the complaint itself and to determine, on the basis of extrinsic matter such as affidavits submitted by one or more of the parties, whether there is warrant for an evidentiary trial, i.e., whether there is 'a genuine issue as to any material fact' bearing upon the claim or claims as to which summary disposition is sought." Alabama Power Co., supra.

Where no evidence exists to support a claim asserted, it is appropriate to dispose of that claim without a formal hearing. The Commission has made clear that intervenors must show that a genuine issue exists prior to hearing,

and if none is shown to exist, the Board may summarily dispose of the contentions on the basis of the pleadings. Prairie Island, CLI-73-12, supra at 242. This obligation of intervenors is reflected in 10 CFR 2.749(b) which states therein:

> When a motion for summary decision is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

As the Supreme Court has pointed out, the Federal Rule of Civil Procedure governing summary disposition, Rule 56, does not permit plaintiffs to get to a jury on the basis of the allegations in the complaints coupled with the hope that something can be developed at trial in the way of evidence to support the allegations. First National Bank of Arizona v. Cities Service Co., 391 U.S. 253, 289-290 (1968). Moreover, a plaintiff is not allowed to defeat a motion for summary disposition on the hope that on cross-examination the defendants will contradict their respective affidavits. Such an approach is purely speculative and to permit trial would nullify the purpose of Rule 56 which provides summary judgment as a means of putting an end to useless and expensive litigation where no genuine issues exist. Orvis v. Brickman, 95 F. Supp. 605, 607 (1951), aff'd, 196 F.2d 762 (D.C. Cir. 1952); see also Radio City Music Hall Corp. v. U.S., 135 F.2d 715, 718 (2d Cir. 1943).

To defeat summary disposition an opposing party must present material, substantial facts to show that an issue exists Conclusions alone will not suffice. See Gulf States Utilities Co. (River Bend), LBP-75-10, 1 NRC 246, 248 (1975). If the statement of material facts required by 10 CFR 2.749(a)

is unopposed, the uncontroverted facts are deemed to be admitted. Pacific Gas and Electric Co. (Stanislaus Nuclear Project, Unit No. 1), LBP-77-45, 6 NRC 159, 163 (1977).

In light of these principles and for the reasons set forth below, summary disposition should be granted on the Staff's motion.

IV. ARGUMENT

The consolidated parties have not been required to set forth particular contentions which they intend to advance in this proceeding. Generally, all matters which the consolidated parties wish to litigate must be fairly within the scope of the issues set forth in the Order to Show Cause: i.e., whether the licensee should design a site dewatering system for the LACBWR site and whether the licensee should make such a system operational.[5/] Through its initial interrogatories, the Staff has asked the consolidated parties to identify their particular points of disagreement with the Staff's position in this proceeding. While they have indicated a few disputes with statements in the Staff's August 1980 safety evaluation and have generally averred that a site dewatering system is necessary, the consolidated parties have identified no facts, documents, or other data on which they rely in support of their points of disagreement with the Staff's position. In light of the following discussion, the accompanying affidavit, and consolidated parties' failure to identify any particular factual data as a basis for

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5/ Consideration of issues related to the appropriate seismic parameters for the LACBWR site have been deferred pending a finding that such issues are within the Board's jurisdiction or until the Board's jurisdiction has been expressly expanded to include such matters.

their allegations, it is clear that no genuine issue of material fact exists which would warrant litigation of the allegations raised by the consolidated parties with respect to the following matter:

> Whether for an earthquake up to magnitude 5.5 with peak ground acceleration of 0.12g or less, the soils under pile-supported structures at the LACBWR site are safe against liquefaction.

Accordingly, the Board should grant summary disposition on the basis of the pleadings with respect to this issue.

Based on the results of Standard Penetration Tests on borings taken under the stack foundation and the turbine building in July 1980, the Staff has concluded in its August 1980 safety evaluation that soils beneath the pile-supported turbine building, reactor containment building, and stack foundation are safe against liquefaction if these soils were to be subjected to an earthquake up to magnitude 5.5 with a peak ground acceleration of 0.12g or less.[6/] The test boring program is described in a Dames & Moore report of July 25, 1980, which was submitted to the NRC by Dairyland Power Cooperative in response to the Staff's request for information under 10 CFR 50.54(f).[7/] The Dames & Moore report and the Staff's safety evaluation provide the results of the Standard Penetration Tests on the test borings.

6/ See Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to Liquefaction Potential at the La Crosse Site at 4-6 (Aug. 29, 1980) (hereinafter Safety Evaluation), which is attached to a letter from H. R. Denton (NRC) to F. Linder (DPC) sent on the same date.

7/ M. Nataraja & B. Cook (Dames & Moore), Final Assessment of Liquefaction Potential at LACBWR Site at 5-6 (July 25, 1980). The report was submitted in hard copy under cover of a letter from F. Linder (DPC) to the Director of NRR, dated August 14, 1980.

On the basis of the test results, the Staff has concluded that the soils under the pile-supported structures show improved density and have a low liquefaction potential. John T. Greeves, who is a geotechnical engineer employed in the NRC's Office of Nuclear Reactor Regulation, observed portions of the field testing program conducted in July 1980 and assisted in the preparation of the Staff's August 1980 safety evaluation. In Mr. Greeves' professional judgment, which is based on his own observations, his experience, and his review of information submitted to the NRC regarding the test borings, Mr. Greeves concludes that the test borings were taken and evaluated in accordance with accepted engineering practices and that the results of the tests show that the soils under the pile-supported structures are safe against liquefaction.[8/] Mr. Greeves agrees with the conclusions stated in the Staff's safety evaluation.

The Staff has appended to this motion a statement of material facts as to which there is no genuine issue to be heard. The following discussion responds specifically to several matters identified by the consolidated parties in response to the Staff's interrogatories.

The Staff's second interrogatory asked the consolidated parties to identify each statement in the Staff's safety evaluation of August 1980 with which the consolidated parties disagreed. In their answer, the consolidated parties state that the "Staff neglects to mention that the piles do not touch and therefore are not supported by the bedrock."[9/] The consolidated parties do not state why they believe this fact has any significance with

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8/ See Affidavit of John T. Greeves, which is attached to this motion.

9/ Response to NRC Staff Interrogatories at 2.

respect to liquefaction potential under the pile supported structures at the LACBWR site. In fact, the consolidated parties' statement raises no issue at all. The Staff is well aware that the piles driven under the foundations of various LACBWR structures do not rest on bedrock. For example, the December 1978 report submitted by the U.S. Army Corps of Engineers' Waterways Experiment Station, consultant to the Staff on the liquefaction issue, specifically notes that the piles do not touch bedrock.[10/]

More importantly, however, the fact that the piles do not touch bedrock is of no consequence to resolution of the liquefaction issue for the LACBWR. As stated in the attached affidavit of Mr. Greeves, the Staff does not rely on the structural capacity of the piles under the structures as a measure to preclude liquefaction of site soils. Rather, the significance of the piles is that the driving of the piles had the effect of densifying the soils underneath the pile-supported structures. The greater density of soils under pile-supported structures has been borne out by the results of the test borings taken beneath the turbine building and stack foundation.[11/] The Staff relies on this improved soil density caused by the driving of piles, not on the structural characteristics of the piles themselves, to support a finding that the soils under pile-supported structures are safe against liquefaction. Therefore, the consolidated parties' reference to the

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10/ See W. F. Marcuson III & W. A. Bi[illegible]sky, Liquefaction Analysis for LaCross Nuclear Power Station, at 1 (Dec. 1978) (prepared for NRC by Geotechnical Laboratory, U.S Army Engineer Waterways Experiment Station).

11/ See Safety Evaluation at 5, Figs. [illegible]; M. Nataraja & B. Cook, Final Assessment of Liquefaction Potential at LACBWR Site, supra note 7, at 6-7, Plates 2 to 5, Plates A-1 to A-6.

fact that the piles do not touch bedrock raises no genuine issue of material fact to be heard in this proceeding.

The consolidated parties also take issue "with Staff's assumption [in the safety evaluation] that the borings are representative for other adjacent structures that are pile supported."[12/] No factual basis is offered for this allegation, even though the consolidated parties were required to identify and describe all factual matters on which they relied in response to the Staff's interrogatories. As stated in Mr. Greeves' affidavit, the borings are indeed a conservative representation of soil conditions below the pile supported structures. As indicated in Figure 1 to the Staff's August 1980 safety evaluation, two of the 1980 borings (DM-12 and DM-13) were taken in the northwest corner of the turbine building, in the portion of the building closer to the Mississippi River. The two other 1980 borings (DM-14 and DM-15) were drilled under the stack foundation.

As Mr. Greeves points out in his affidavit, and as indicated in Figure 2d-2-1 of the Dames and Moore report dated July 11, 1980,[13/] the piles under the turbine building are spaced relatively widely apart compared to those under other pile-supported structures at the LACBWR site. Thus, Mr. Greeves states, minimum improvement in soil densification due to pile-driving can be expected, as compared to other structures, under the turbine building at the points where the test borings were taken. In addition, Mr. Greeves notes,

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12/ Response to NRC Staff Interrogatories at 2.

13/ H. Singh & M. Nataraja (Dames & Moore), Response to NRC Review Questions (July 14, 1980), submitted under cover of a letter of July 14, 1980, to the Director of NRR from F. Linder (DPC) in response to the NRC Staff's request for information under 10 CFR 50.54(f).

soil density generally increases with the distance from the river bank. As indicated above, the borings DM-12 and DM-13 are located in the portion of the turbine building closer to the Mississippi River. The location of the turbine building borings is representative of low initial soil density and wide spacing of piles, and therefore, Mr. Greeves concludes, the borings are a conservative representation of other pile-supported foundations on the LACBWR site.

The borings under the stack foundation are a conservative representation of soil conditions under the reactor building. As indicated in Figure 2d-2-1 of the July 11th Dames and Moore report, spacing of piles under the reactor building is denser than under the turbine building and is similar to the spacing under the stack (referred to as the chimney in the Figure 2d-2-1) foundation.[14/] Mr. Greeves also points out in his affidavit that the reactor building is founded at a lower elevation than the stack and turbine building, an elevation that is below the hydraulic fill soils.[15/] In sum, then, the borings under the stack foundation and the turbine building constitute a conservative representation of the range in soil conditions below the pile-supported structures, including the reactor building. The consolidated parties have indicated no facts to show that the borings are not representative.

The consolidated parties challenge the Staff's evaluation by stating, "Are there voids under containment? We don't know."[16/] The consolidated

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14/ Id.

15/ See Fig. 2d-2-1 in id.; Safety Evaluation at Fig. 2; Affidavit at 4.

16/ Response to NRC Staff Interrogatories at 2.

parties provide no facts which would indicate that there are indeed voids under the reactor building. As discussed in the preceding paragraph, the borings under the stack foundation are a conservative representation of conditions under the reactor building. No voids were encountered under the stack foundation. Mr. Greeves concludes in his affidavit that the results of the borings under the stack foundation indicate that no voids are under the structures supported by more densely spaced piles.

In response to the Staff's third interrogatory, which asked the consolidated parties to state their position with respect to the effects of pile-driving under the reactor and turbine buildings, the consolidated parties state, "Driven piles increase pore pressure as well as soil density. We have not as yet decided the significance of increased pore pressure vs. increased density."[17/] Again, beyond their mere speculation that they may have hit upon something of significance to this proceeding, the consolidated parties offer no facts or data which would indicate the thrust of their concern. Mr. Greeves' affidavit acknowledges that pore pressure as well as soil density will increase during pile-driving. However, Mr. Greeves indicates, increased pore pressure dissipates shortly after the piles are driven and has no significance after this dissipation. The consolidated parties' unsupported musings about the effects of increased pore pressure raise no material issue of fact in this proceeding.

The consolidated parties raise a question concerning the stability of soils under pile-supported structures if adjacent soils in the free field

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17/ Response to NRC Staff Interrogatories at 3.

undergo liquefaction.[18] Mr. Greeves states in his affidavit that the denser soils will remain stable even if less dense adjacent soils undergo liquefaction. Mr. Greeves points to the experience in the area of Ishinomaki, Japan, during an earthquake that occurred in June 1978. Mr. Greeves' affidavit incorporates a study of liquefaction characteristics at an oil tank site during the earthquake.[19] As the study indicates, the oil tanks had been constructed on sand stabilized by the compaction pile technique. The oil tanks were not damaged though soil liquefaction occurred in the surrounding area. The denser soils under the LACBWR's pile-supported structures can be expected, therefore, to remain stable even if free field soils liquefy.[20]

V. CONCLUSION

As demonstrated by the results of the test borings taken beneath the stack foundation and turbine building, the soils beneath the pile-supported structures at the LACBWR site have densified as a result of pile-driving to the extent that the soils are safe against liquefaction in the event of an earthquake up to magnitude 5.5 with a peak ground acceleration of 0.12g or less. In view of the results of the boring program, the Staff's August 1980 safety evaluation, and the attached affidavit of Mr. Greeves, the consolidated

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18/ See answers to Staff interrogatories 2 and 3, in Response to NRC Staff Interrogatories at 2-3.

19/ K. Ishihara, Y. Kawase, & M. Nakajima, Liquefaction Characteristics of Sand Deposits at an Oil Tank Site During the 1978 Miyagiken-Oki Earthquake, 20 Soils & Foundations No. 2 (June 1980) (Japanese Soc'y. of Soil Mechanics & Foundation Engineering).

20/ Affidavit of John T. Greeves.

parties have raised no genuine issue of material fact with respect to the safety against liquefaction of soils under pile-supported structures at the LACBWR site in the event of an earthquake up to magnitude 5.5 with a peak ground acceleration of 0.12g or less. The consolidated parties point to no facts that would support the allegations made in their response to the Staff's interrogatories. They are not entitled to get to hearing in this proceeding on the hope that something may be developed in the hearing to support their allegations or that the Staff may contradict itself. See First National Bank of Arizona v. Cities Service Co,. 391 U.S. 253, 289-90 (1968); Radio City Music Hall Corp. v. United States, 135 F.2d 715, 718 (2d Cir. 1943). In the absence of a showing by the consolidated parties that there are substantial material facts to show that an issue exists, summary disposition is appropriate. Accordingly, the Staff moves that the Board grant summary disposition and find that:

> For an earthquake up to magnitute 5.5 with peak ground acceleration of 0.12g or less, the soils under pile-supported structures at the LACBWR site are safe against liquefaction.

Respectfully submitted,

Stephen G. Burns

Stephen G. Burns

Karen D. Cyr

Karen D. Cyr

Attachments:
1. Statement of Material Facts.
2. Affidavit of John T. Greeves.

Dated at Bethesda, Maryland
this 14th day of November, 1980.

APPE

Material facts as to which there is no genuine issue to be heard:

1. The foundations of the reactor building, stack, and turbine building are supported by piles.

2. The driving of piles increased the density of soils under pile-supported buildings.

3. Test borings were made for Dairyland Power Cooperative of soils beneath the turbine building and the stack foundation.

4. The results of the Standard Penetration Tests on borings under the stack foundation and the turbine building confirm the densification of soils under the pile-supported structures at the LACBWR site.

5. Test borings under the turbine building and the stack foundation are a conservative representation of soil conditions under the reactor building.

6. Densification of soils has occurred under pile-supported structures such that the soils under these structures are safe against liquefaction. In the event of an earthquake up to magnitude 5.5 with a peak ground acceleration of 0.12g or less.