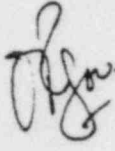




UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 18 1983

MEMORANDUM FOR: George Lear, Chief
Structural and Geotechnical Engineering Branch
Division of Engineering

THRU:  Pao-Tsin Kuo, Leader
Structural Engineering Section B
Structural and Geotechnical Engineering Branch
Division of Engineering

FROM: Frank Rinaldi, Structural Engineer
Structural Engineering Section B
Structural and Geotechnical Engineering Branch
Division of Engineering

SUBJECT: EVALUATION OF EVIDENCE ON DIESEL GENERATOR BUILDING -
MIDLAND PROJECT FOR DETERMINATION OF NEED TO REOPEN HEARINGS

Pursuant to your request of November 8, 1983, for my evaluation of any new evidence related to the structural adequacy of the Diesel Generator Building (DGB), I have evaluated the report by the NRR Task Group dated October 21, 1983, for the test conditions provided by your management (Enclosure 1) and expanded by the staff attorney (Enclosure 2).

Foremost, I like to state that the NRC staff decision to reopen the hearings on the DGB lies on the NRC legal staff. The NRC legal staff is aware of the official staff position and personal technical positions of staff members and consultants, as stated in written and oral testimony during the ASLB hearing of December, 1982. In addition, the NRC legal staff is aware of the questions raised by the Region III-IE inspector as well as the answers provided by all concerned parties. Indeed the NRR Task Group Report of October 21, 1982, documents the conclusions, discussions, and specific answers to the questions raised by Region III-IE inspector. The NRR Task Group report includes their findings, those of their consultant staff from Brookhaven National Laboratory (BNL), as well as the replies by NRR Structural and Geotechnical staff and their consultants to the questions raised by the Region III-IE inspector. Please note that errata has been pointed out to the Task Group. The need for corrections has been acknowledged by the Task Group and errata pages have been issued.

Recognizing the fact that my recommendations on the subject of reopening the hearing for the DGB are needed for the final decision making, I will identify the important facts stated by the Task Group and state if they constitute, from the structural engineering point of view, new evidence or if they impact on the previous conclusions reached by the structural engineering staff. The major points are the following:

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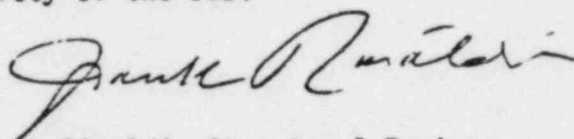
1. The Task Group used the same facts and evidence used by the review staff in their evaluation of the DGB.
2. The Task Group reached the same bottom line conclusion, "that there is reasonable assurance that the structural integrity of the DGB will be maintained and its functional requirements fulfilled."
3. The Task Group concluded that, "The most reasonable estimate of stress due to settlement is based on the crack width data. However, the calculations that have been done in this area need to be completely documented."
4. The Task Group stated, "That a more accurate and reliable crack monitoring program be established," and that sufficient stress margins for Action Level and specific repairs be established for Alert Level of crack/s width/s. Also, they recommended a general repair program prior to plant operation.

The first two items are self-explanatory and from a structural engineering technical point of view should be the major reasons that no additional hearings are required to establish the structural adequacy of the DGB. The third item asks for the documentation of the calculations used in the determination of the conservative stress values utilizing the crack width data. The approach has been discussed, the results have been documented, and the data used for the calculations has been identified. Therefore the requested documentation will consist of nothing more than presenting the information related to the assumptions made, formula used, input data, calculations, and results. The actual calculations require basic skills and engineering judgment. The resulting stress values can be easily verified with the stress results identified in the written and oral testimony of the applicant and the staff. I do not consider this documentation to be new evidence because the facts do not change. The fourth item recommends a modification to the monitoring program previously proposed by the applicant and accepted by the staff and a general repair program. The Task Group does not provide specific approaches that would fulfill these recommendations. BNL report recommends the extensive use of Whitmore strain gages in place of the three crack monitoring windows currently accepted by the staff, but recommends the same general approaches as the Task Group for requirements on the general repairs and the requirements on the Alert and Action Levels. The Task Group was aware of the BNL recommendation related to the Whitmore strain gages, but did not make such firm recommendation. The above stated facts lead me to the conclusion that the Task Group is leaving the structural review staff and the applicant with the task of resolving these concerns.

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I conclude from my review of the Task Group report that the NRC staff needs to start discussions with the applicant concerning the documentation of the rebar stresses as determined from all available crack-width data, the usefulness and effectiveness of the strain gages proposed by BNL, and if more specific actions should be established now, or as results of meetings with the applicant after the alert and/or action levels are reached. The applicant has contracted with Portland Cement Association (PCA) to review and evaluate all field data (cracks and deflections) to evaluate potential and specific problems identified by the monitoring program. The staff was relying on this independent monitoring and evaluation by PCA in the acceptance of the monitoring requirements.

I understand the fact that some people may not fully understand the structural engineering technical aspects of this case and may consider the availability of any new document as solid ground for reopening the hearings on the DGB. However, based on the fact that no new evidence was uncovered in the preparation of the conclusions of the Task Group, that the structural adequacy of the DGB was assured, and that no specific detailed recommendations were made other than generic suggestions which the staff can request the applicant to resolve and then inform the board of the resolutions; I do not recommend, from the structural engineering technical point of view, to reopen the hearing on the structural safety of the DGB.



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Enclosures:
As stated

cc: R. Vollmer
J. Knight
T. Novak
T. Sullivan
E. Adensam
D. Hood
W. Paton
P. Kuo
L. Heller
J. Kane
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Test to apply in deciding whether to recommend that the hearing be reopened.

- Is there new evidence that modifies the evidence of record?
For example, does the new evidence affect what was said by the witnesses (any or all) in such a way that something different would have been said if the information had been available before the testimony was given?

- The issue is one of "fairness to the board". If our feeling is that the evidence would not change our conclusions but that the board nevertheless, should have the benefit of reviewing this new evidence to reach its conclusions, then we should recommend for reopening the record.

ENCLOSURE 1

Are the facts or expert opinions in the 'DGB Task' Report that are different from facts or expert opinions now in evidence before the Licensing Board. (The facts and expert opinions referred to are significant facts and expert opinions, i. e. - facts and expert opinions that could effect a conclusion with respect to the structural adequacy of the Diesel Generator Building)