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NG-04-0003

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

DUANE ARNOLD ENERGY CENTER  
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SUBJECT: Clarification of Assumptions Regarding Reactor Building Crane  
REFERENCE: NG-01-1428, Letter dated December 21, 2001

The referenced letter provided a summary of seismic analyses regarding the Duane Arnold Energy Center (DAEC) reactor building crane. The referenced letter stated the assumption that the lifted load and lower load block are assumed decoupled from the bridge and trolley with respect to horizontal earthquake accelerations. The purpose of this letter is to provide the basis for that assumption.

The fundamental building frequency of the reactor building structure is much higher than that of the crane/load system. The response spectra for the building peak at a period of less than 1/3 second. An informal review of the crane/load system indicates that the shortest expected period would be greater than 3 seconds. Therefore, the horizontal seismic forces exerted on the suspended load would have no appreciable effect on the crane or the building structure.

In summary, horizontal seismic forces exerted on the crane and support structure by a lifted load are negligible. This assumption is appropriate since the period of oscillation for a suspended load is long in comparison to the response spectra of the reactor building.

This letter contains no new commitments.



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DAEC Site Vice-President

cc: Regional Administrator, USNRC, Region III  
Project Manager (NRC-NRR)  
NRC Resident Inspector (DAEC)

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