



Duane Arnold Energy Center  
3277 DAEC Road  
Palo, IA 52324  
Telephone 319 851 7611  
Fax 319 851 7611

September 13, 1996  
NG-96-1637

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License No: DPR-49  
Resolution of Single Failure Proof Status of Reactor Building Crane

References: 1) NG-96-1035, dated May 10, 1996, from J. Franz to NRC; IES  
Response to NRC Bulletin 96-02: Movement of Heavy Loads Over Spent  
Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment  
2) Amendment No. 195 to Facility Operating License No. DPR-49, dated  
February 2, 1994, from R. Pulsifer (NRC) to L. Liu (IES)

File: A-101a, T-31

Dear Sir,

Reference 1 transmitted our response to NRC Bulletin 96-02: "Movement of Heavy Loads Over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment." As stated in that letter, a question has been raised concerning the single failure proof status of the Duane Arnold Energy Center (DAEC) reactor building crane. We have discussed this matter with your Staff and are providing additional information so that this issue may be resolved.

As discussed in Reference 1, the DAEC reactor building crane was modified in 1985. A new Ederer single failure proof crane trolley and main hoist system meeting the guidelines of Regulatory Guide 1.104, "Overhead Crane Handling Systems for Nuclear Power Plants," and NUREG-0554, "Single Failure Proof Cranes for Nuclear Power Plants," was installed. The trolley system was installed on the existing bridge; the bridge itself was not replaced. The design of the Ederer hoist and trolley system was evaluated in a Staff Safety Evaluation Report (SER) of the Generic Licensing Topical Report EDR-1, Rev. 3, for Ederer's Nuclear Safety-Related Extra Safety and Monitoring (X-SAM) Cranes, dated August 3, 1983.

IEC  
1/0

9609230166 960913  
PDR ADOCK 05000331  
Q PDR

IES performed a seismic analysis in accordance with the guidance of Regulatory Guide 1.29. Calculation C-85-19, "Static Seismic Analysis of Reactor Building Overhead Crane" was performed in 1985 to verify that the reactor building overhead crane would be capable of safely supporting its rated load during a seismic event after installation of the new single failure proof trolley. This calculation concludes that the combined vertical and horizontal stresses developed in an operational basis earthquake (OBE) and a design basis earthquake (DBE) are within the allowable stress limits defined in Crane Manufacturers Association of America (CMAA) 70 - 1975 (Specification for Electric Overhead Traveling Cranes).

As discussed in Reference 2, while this analysis concluded that seismic requirements were met, the NRC has not reviewed the analysis. Reference 2 questions the single failure proof status of the DAEC reactor building crane because of the lack of an NRC review of this analysis. Since the implementation of Phase II of NUREG-0612 was suspended with the issuance of Generic Letter 85-11, it is unclear whether NRC review of the seismic analysis is required. IES Utilities does not believe such NRC review is required and considers the DAEC reactor building crane to be single failure proof. We request the NRC's concurrence on this issue.

Should you have any questions concerning this submittal, please contact this office.



Kenneth E. Peveler  
Manager, Nuclear Licensing and Emergency Planning

KEP/CJR/cjr

n:\iowa\lic\NG-96\NG-96-1637.doc

cc: C. Rushworth  
L. Liu  
G. Kelly (NRC-NRR)  
A. B. Beach (Region III)  
NRC Resident Office  
Docu