

September 19, 2001

MEMORANDUM TO: John A. Zwolinski, Director, DLPM:NRR  
Michael E. Mayfield, Director, DET:RES  
Scott F. Newberry, Director, DRAA:RES

FROM: Thomas L. King, Director */RA/*  
Division of Systems Analysis and Regulatory Effectiveness  
Office of Nuclear Regulatory Research

SUBJECT: DRAFT NUREG-XXXX, TECHNICAL ASSESSMENT, GENERIC  
ISSUE 186: POTENTIAL RISK AND CONSEQUENCES OF HEAVY  
LOAD DROPS IN NUCLEAR POWER PLANTS

Per discussion with Mr. Mel Fields on August 30, 2001, please distribute the attached draft NUREG for peer review to the following nine nuclear facilities using standard distribution lists; (1) Brown's Ferry, (2) Comanche Peak, (3) Diablo Canyon, (4) Dresden, (5) Grand Gulf, (6) Limerick, (7) Oconee, (8) Oyster Creek, and (9) Palo Verde. Each of the nine facilities provided crane operating data which is referenced in the draft NUREG.

This study was initiated in response to candidate generic issue 186, *Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants*. The attached report documents the results of a systematic and comprehensive study of crane operating experience at U.S. nuclear power plants. In addition, the report also contains other crane operating experience data or reviews published by the Navy, the Department of Energy, the Environmental Evaluation Group of New Mexico, the California Crane Unit of the Division of Occupational Safety and Health, and the NRC.

Several performance related observations regarding very heavy load lifts (i.e., loads of approximately 30 tons or more) at nuclear power plants include the following:

1. Since publishing NUREG-0612, Control of Heavy Loads at Nuclear Power Plants, in 1980, there have been no reported very heavy load drops in more than 47400 load lifts at plants with an operating license.
2. The probability of event sequences having risk significance is very small (i.e., less than 6.3 E-07 per reactor year).
3. There have been no crane events classified as Accident Sequence Precursor (ASP) events.

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4. Most deaths or injuries related to nuclear power plant crane operation, during the period 1968 through October 1999, were occupational accidents not related to very heavy loads or to safety-related equipment.
5. Crane performance has greatly improved since NUREG-0612 was issued, as shown by a decrease in the number of slips, drops, injuries, and deaths while the number of operating nuclear power plants has increased during the same time period.

Following a peer review of the draft NUREG, the Office of Nuclear Regulatory Research (RES) will make appropriate changes to the document, submit it for publication, and provide recommendations to the NRC regarding any necessary actions to be taken in addressing Generic Issue 186.

It is intended that the insights from this study assist the NRC and industry ongoing efforts to make NRC's regulations framework and oversight process more risk informed and performance based and to reduce unnecessary regulatory burden.

It is our understanding that NRR will coordinate the review by and receipt of comments from the regions.

Comments on the draft NUREG should be provided by October 19, 2001.

Attachment: As stated

cc w/atts.:

W. Dean, NRR  
A. Blough, R-I  
L. Plisco, R-II  
G. Grant, R-III  
K. Brockman, R-IV  
W. Lanning, R-I  
B. Mallett, R-II  
G. Grobe, R-III  
A. Howell, R-IV

cc w/o atts.:

B. Sheron, NRR  
D. Matthews, NRR  
G. Holahan, NRR  
J. Strosnider, NRR  
B. Boger, NRR

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