

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

CENTRAL FILES

July 28, 1976

Wisconsin Public Service  
Corporation  
ATTN: Mr. E. W. James, Senior  
Vice President  
Power Generation and  
Engineering  
P.O. Box 1200  
Green Bay, Wisconsin 54305

Docket No. 50-305

Gentlemen:

The enclosed Bulletin, No. 76-07 is forwarded to you for information and action. A similar document entitled Circular No. 76-01, is being transmitted to each holder of a Construction Permit. Therefore, if you have a nuclear power plant in the construction stage, you will also receive a copy of Circular No. 76-01 which will require separate response. You will note that the significant difference between the two documents is the time allowed for response.

Inspection and Enforcement Bulletins have been and will continue to be limited to subjects considered to be of significance and which require prompt response. In the future, Bulletins will be supplemented by Circulars as a communication medium where the subject matter is of lesser significance, immediacy, or for which a longer response time or no response may be acceptable.

Sincerely,

James G. Keppler  
Regional Director

Enclosure:  
IE Bulletin No. 76-07

cc w/encl:  
C. Luoma, Plant  
Superintendent

bcc w/encl:  
Central Files  
IE Files  
PDR  
Local PDR  
OGC, Beth, P-506A  
Reproduction Unit NRC 20b



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## CRANE HOIST CONTROL - CIRCUIT MODIFICATIONS

### DESCRIPTION OF CIRCUMSTANCES:

In response to NRC concerns about the potential for, and consequences of, dropping a spent fuel shipping cask or other heavy load, Commonwealth Edison modified the hoist control system for the fuel cask handling cranes at their Dresden Units 2 and 3 and Quad-Cities Units 1 and 2 to provide additional hoist redundancy and slow speed hoist capability. The original design utilized a General Electric "magspeed" hoist control system. In this system which includes two electro-mechanical brakes in series, spring force holds the brakes engaged while DC solenoids, energized when the hoist motor is energized, disengage the brakes.

The modification which added the slow speed hoist capability included installing additional contactors in the brake solenoid power circuit to energize the solenoids when the low speed hoist motor was energized.

The original hoist control system design utilized a single Size 2 DC contactor (two contacts in series) in the solenoid circuit. The design modification added a circuit in parallel with the original DC contactor which utilized four AC rated Size 1 single contacts in a series-parallel array to distribute current carrying and interrupting burden.

Initial experience with the modified hoist control system at Dresden showed that the circuit interrupting capacity of the series-parallel array was marginal. On several occasions when the low speed motor was stopped in the lowering mode, the solenoid circuit contacts arced resulting in power being supplied to the solenoids long enough so that the load dropped some distance before the brakes engaged. Over travel of as much as 15 inches was reported, but no damage to hoist or load was found.

The crane manufacturer's representatives have advised the NRC that the proposed corrective action is to install a single Size 2 DC contactor (two contacts in series) with arc suppressors, the same as originally provided in the General Electric design, in place of the added four AC-rated contacts. The original contactor in the normal speed control circuit has shown satisfactory service since initial operation of the plant in 1969.

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**ACTION TO BE TAKEN BY LICENSEE:**

1. Determine and report to this office within 20 days the following information:
  - (a) Have you made, or do you plan to make modifications to the hoist control for your installed cranes similar to the described modifications?
  - (b) If such modifications have been made, or are planned, identify changes required in brake power and control circuitry?
  - (c) What steps have been taken or are planned, to provide assurance that brake power contactors are adequate for the service?
2. If modifications are planned, provide the schedule for completion and a brief description of your plans for design review and functional testing.

Your response should be submitted to the Director of this Office, with a copy to the Director, Division of Reactor Inspection Programs, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U. S. C. 3152 from the U. S. General Accounting Office. (GAO Approval B-180255 (R0072), expires 7/31/77).