

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REG: I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

July 28, 1976

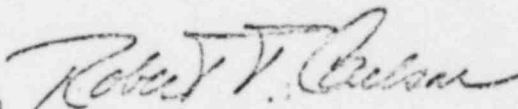
Yankee Atomic Electric Company
Attention: Mr. Robert H. Groce
Licensing Engineer
20 Turnpike Road
Westborough, Massachusetts 01581

Docket No. 50-29

Gentlemen:

The enclosed Bulletin, 76-07 is forwarded to you for information and action. A similar document entitled Circular 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 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.


for James P. O'Reilly
Director

Enclosure:
IE Bulletin 76-07

cc: H. Autio, Plant Superintendent
Donald G. Allen, President

bcc:

IE Mail & Files
Central Files
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
Technical Information Center (TIC)
REG:I Reading Room
Commonwealth of Massachusetts

8011210 531

9

T

NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

IE Bulletin No. 76-07
DATE: July 28, 1976
Page 1 of 2

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 with 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 suppressers, 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.

copy of 7909050197

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).