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

AUG 1 3 1979

Docket No. 50-440
Docket No. 50-441

The Cleveland Electric Illuminating
Company
ATTN: Mr. Dalwyn R. Davidson
Vice President - Engineering
P. O. Box 5000
Cleveland, OH 44101

Gentlemen:

The enclosed IE Bulletin No. 79-21 is forwarded to you for information. No written response is required. If you desire additional information reg rding this matter, please contact this office.

Sincerely,

Glen W. Roff
for James G. Keppler
Director

Enclosures:
1. IE Bulletin No. 79-21
2. List of IE Bulletins Issued in the Last 6 Months

cc w/encls:
Central Files
Director, NRR/DPM
Director, NRR/DOR
PDR
Local PDR
NSIC
TIC
Harold W. Kohn, Power
Siting Commission
Mr. Daniel D. Wilt,
Attorney

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Accession No: 7908090193
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

August 13, 1979

IE Bulletin No. 79-21

TEMPERATURE EFFECTS ON LEVEL MEASUREMENTS

Description of Circumstances:

On June 22, 1979, Westinghouse Electric Corporation reported, to NRC, a potential substantial safety hazard under 10 CFR 21.

The report, Enclosure No. 1, addresses the effect of increased containment temperature on the reference leg water column and the resultant effect on the indicated steam generator water level. This effect would cause the indicated steam generator level to be higher than the actual level and could delay or prevent protection signals and could, also, provide erroneous information during post-accident monitoring. Enclosure No. 1 addresses only a Westinghouse steam generator reference leg water column; however, safety related liquid level measuring systems utilized on other steam generators and reactor coolant systems could be affected in a similar manner.

Actions To Be Taken By Licensees:

For all pressurized water power reactor facilities with an operating license:*

1. Review the liquid level measuring systems within containment to determine if the signals are used to initiate safety actions or are used to provide post-accident monitoring information. Provide a description of systems that are so employed; a description of the type of reference leg shall be included, i.e., open column or sealed reference leg.

2. On those systems described in Item 1 above, evaluate the effect of post-accident ambient temperatures on the indicated water level to determine any change in indicated level relative to actual water level. This evaluation must include other sources of error including the effects of varying fluid pressure and flashing of reference leg to steam on the water level measurements. The results of this evaluation should be presented in a tabular form similar to Tables 1 and 2 of Enclosure 1.

3. Review all safety and control setpoints derived from level signals to verify that the setpoints will initiate the action required by the plant safety analyses throughout the range of ambient [illegible] instrumentation, including accident [illegible] these setpoints.

*Boiling water reactors have been reques[illegible] NRC to provide similar information.

79-136-000

Westinghouse Electric Corporation Power Systems

June 22, 1979

NS-TMA-2104

Mr. Victor Stello
Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
East West Towers Building
4350 East West Highway
Bethesda, Maryland 20014

Dear Mr. Stello:

Subject: Steam Generator Water Level

This is to confirm my telephone conversation of June 21, 1979 with Mr. Norman C. Moseley, Director, Division of Reactor Operation and Inspection and Mr. Samuel E. Bryan, Assistant Director for Field Coordination. In that conversation, I reported that Westinghouse had informed its utility customers of corrections that should be applied to indicated steam generator water level and recommended that they incorporate those corrections in the steam generator low water level protection system setpoints and emergency operating procedures for operating plants as appropriate.

High energy line breaks inside containment can result in heatup of the steam generator level measurement reference leg. Increased reference leg water column temperature will result in a decrease of the water column density with a consequent apparent increase in the indicated steam generator water level (i.e., apparent level exceeding actual level). This potential level bias could result in delayed protection signals (reactor trip and auxiliary feedwater initiation) which are based on low-low steam generator water level. In the case of a feedline rupture, this adverse environment could be present and could delay or prevent the primary signal arising from declining steam generator water level (low-low steam generator level). The following is a list of backup signals available in those Westinghouse plants which take credit in their Final Safety Analysis Reports for steam generator water level trip with an adverse containment environment: overtemperature delta T; high pressurizer pressure; containment pressure and safety injection. For other high energy line breaks which could introduce a similar positive bias to the steam generator water le
level does not provide the primary
would not interfere with needed pro