ATTACHED IS A PART 21 REPORT FROM IE MAIL UNIT - ROOM 359E/W

PART 21 IDENTIFICATION NO. 79-131-00 COMPANY NAME Westinghouse

DATE OF LETTER 6/11/79 DOCKET NO. 50-309, 348, 275, 323, 311, 316, 327, 390

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ACTION:

PRELIMINARY EVUALATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOW-UP AS SHOWN BELOW:

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REV. 3/5/79

79-131-000

Westinghouse Electric Corporation

Water Reactor Divisions

June 11, 1979
NS-TMA-2008

Mr. John G. Davis
Acting Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
1717 H Street
Washington, D. C. 20555

Dear Mr. Davis:

This letter concerns a telephone notification made by Westinghouse to Mr. Norm Mosley of the Office of Inspection and Enforcement on June 8, 1979. The notification, made under 10CFR21, identified a potential substantial safety hazard resulting from a deficiency that has been identified in the procedure used to check the performance characteristics of the Barton Lot 1 transmitters prior to shipping. As a consequence, a maximum of 48 differential pressure transmitters, delivered to the plants identified in Table 1, for use in the Steam Generator Level (narrow range) function, may exhibit a positive inaccuracy in excess of the Westinghouse specification of +10 percent.

Dependent on the magnitude of the inaccuracy of the individual transmitters and the disposition of the units within the plants, the protective actions reliant on the Steam Generator Level (narrow range) initiation signal might potentially be impaired. The Narrow Range Steam Generator Level function is relied upon to provide reactor trip (2/3* on any steam generator) and initiation of auxiliary feedwater (2/3* on any one steam generator for motor driven and 2/3* on any two steam generators for turbine driven). In the event that the initiation signal is not generated, back-up reactor trip signals are available from High Pressurizer Pressure, High Pressurizer Level, Overtemperature ΔT, Containment Pressure and SI initiation. Back-up initiation of motor-driven auxiliary feedwater pumps is available from the Blackout signal, trip of the main feed pumps, SI initiation and manual action. Back-up initiation of the turbine-driven auxiliary feedwater pump is available from a Blackout signal and manual action.

* 2/4 on McGuire

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During the threshold tests on the Barton Lot 1 transmitters, which were reported to you in NS-THA-1950, September 29, 1978, one of the test units (a differential pressure unit) displayed a positive inaccuracy that, when combined with the radiation inaccuracy, exceeded the established acceptance band of +10 percent in the temperature range of 250°F - 280°F. The manufacturer, Barton, was advised of this result and was requested to investigate the cause of the observed inaccuracy and assess the extent to which other production Lot 1 transmitters might be affected. The manufacturer provided a report to Westinghouse on May 21, 1979, describing the process and results of this assessment.

The investigation by Barton confirmed that there was no manufacturing deficiency and that furthermore, the transmitters met the specified accuracy requirements at the established check points of 130, 280 and 320°F. However, for those transmitters requiring temperature compensation in order to meet the -25 percent PAMS accuracy requirement at 320°F, the maximum positive inaccuracy was found to occur at approximately 250°F, the temperature at which the compensation is activated.

The investigation conducted by Barton consisted of detailed measurements of output shift as a function of temperature on a number of available Lot 1 transmitters. These measurements were used to develop a mathematical correlation to relate the measured output shift at the check points to the maximum positive inaccuracy for those transmitters. The mathematical correlation was then used to predict the maximum positive inaccuracy for each transmitter of Lot 1 from the check point values measured prior to shipping the units.

Based upon the Barton results, Westinghouse performed an evaluation of the estimated maximum inaccuracy for each transmitter against the functional requirements of the transmitter as installed. As a result of this evaluation, Westinghouse has determined that 43 of those Lot 1 units in the Steam Generator narrow range level function have excessive positive inaccuracies. This problem is limited to the steam generator narrow range level function due to the short-term accuracy requirement of this function and the special temperature-induced error characteristic of the differential pressure transmitter. Twenty-one (21) of these transmitters are within a few percent (the range of uncertainty) of the +10 percent limit. The remaining twenty-seven (27) have maximum positive inaccuracies up to approximately +30 percent.

The affected plants and number of transmitters are shown in the attached table. None of the plants is currently operating. Farley 1 and D. C. Cook 2 are both licensed and expect to return to power operation in the near future. All affected utilities have been informed and Westinghouse has requested that the affected transmitters shown in Table 1 be

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returned to Barton. The output shift will then be checked over a range of temperature values to confirm whether or not the actual transmitter performance is outside the acceptable band. Where necessary, circuitry modifications will be made to bring the transmitter performance within specification. As necessary, these affected transmitters may be replaced by acceptable units from Lot 1 or any units from Lot 2.

In reviewing this deficiency Westinghouse considered any possible impact on the Lot 2 transmitters. Due to the electronic changes incorporated into Lot 2 units, the uncompensated variation of induced output shift with temperature is almost linear and therefore, unlike the non-linear characteristic of the Lot 1 units. In addition, only approximately 15 percent of the Lot 2 units have been found to require temperature compensation and, even then, only to a maximum of 5 percent shift in output. Based on the predictability of the output characteristic and the limited application of a reduced temperature compensation, Westinghouse has determined that the Lot 2 units will not be affected. In order to verify this, Westinghouse is currently reviewing the measured check points for each temperature compensated Lot 2 transmitter to verify that the maximum positive inaccuracy is within specification.

Should you have any questions on this material, please contact Mr. R. J. Sero (412-373-4189).

Sincerely yours,

T. M. Anderson, Manager
Nuclear Safety