



Westinghouse  
Electric Corporation

Water Reactor  
Divisions

Box 355  
Pittsburgh Pennsylvania 15230

NS-EPR-2931

June 15, 1984

Mr. R. C. DeYoung, Director  
Division of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Phillips Building  
7920 Norfolk Avenue  
Bethesda, Maryland 20014

Dear Mr. DeYoung:

This is to confirm the telephone conversation of June 15, 1984, between Messrs. C. Draughon and D. Rawlins of Westinghouse and Mr. G. Lanik of the NRC. In that conversation, Westinghouse notified the NRC of a reportable item associated with the Barton Lot 1 transmitters supplied by Westinghouse to several NSSS customers. This item was reported under 10CFR 21 for three operating plants (Farley 1, D. C. Cook 2, and Sequoyah 1) as discussed below. Westinghouse has advised these utilities of this issue.

In addition to these plants which have installed Lot 1 transmitters that do not meet the required accuracy, Westinghouse has shipped a number of other Lot 1 transmitters that could result in a similar condition if they were installed in an operating plant. Our information currently indicates that these devices are no longer installed in the plants to which Westinghouse shipped them. The affected transmitters as well as those installed in operating plants are listed in Table 1.

On October 13, 1983, in letter NS-EPR-2837, Westinghouse reported the issue of "thermal non-repeatability" as it affected Westinghouse customers of Barton transmitters from the manufacturing Lots 2 through 7. As noted, Barton discovered excessive errors at both abnormal and accident temperature conditions and determined two separate causes. Barton's calibration technique for temperature compensation was found to result in previously undefined errors at both abnormal and accident temperatures. Barton also discovered that an electrical leakage path thru the wiper arm and shaft of the zero and span calibration potentiometers to the instrument case creates significant errors at high temperatures. Transmitters procured by Westinghouse from Barton Lots 1, 2, 4, 5, and 7 were potentially affected. In the October 13, 1983 letter, Westinghouse committed to supply the results of the ongoing evaluation of the Lot 1 transmitters to the NRC as necessary.

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Westinghouse has recently received information on Barton Lot 1 transmitters and has evaluated the thermal non-repeatability issue and other calibration errors and has found that for some plants there is insufficient margin in all function setpoints to absorb the additional errors identified. The additional calibration errors determined on Lot 1 were due to special temperature compensation techniques employed by Barton only on Lot 1 Transmitters. The Westinghouse evaluation has concluded that these techniques caused the error for initiating trip functions to exceed the tolerance specified if the transmitter internal temperature is in the range of 200-250°F.

Based on a review of the calibration data from Barton on each Lot 1 transmitter supplied to Westinghouse, we have calculated the expected error deviations and discussed the effect of any additional deviations on the functions performed by these transmitters with the affected utilities. The containment high pressure trip provides a backup to the safety injection, reactor trip and auxiliary feedwater pump initiation functions for which steam generator narrow range level is the primary trip so the utility may want to demonstrate the adequacy of this trip rather than change the steam generator lo-lo level setpoint.

If you have any questions or would like to discuss this issue further, please contact Clarence Draughon of my staff at 412-374-5761.

Very truly yours,

*for DH Lawrence*  
E. P. Rahe, Manager  
Nuclear Safety Department

CGD/KEG

Table 1

<u>Plant</u>	<u>Function</u>	<u>Serial Number</u>
<u>A. Operating plants with installed affected Lot 1 transmitters.</u>		
D. C. Cook 2	Pressurizer Pressure	763-316
	Pressurizer Pressure	763-317
	SG NR LVL	764-193
	SG NR LVL	764-194
	SG NR LVL	764-195
	SG NR LVL	764-196
	SG NR LVL	764-200
	SG NR LVL	764-342
	SG NR LVL	764-197
	SG NR LVL	764-198
Farley 1	SG NR LVL	764-128
	SG NR LVL	764-129
	SG NR LVL	764-130
	SG NR LVL	764-132
	SG NR LVL	764-137
	SG NR LVL	764-162
	SG NR LVL	764-163
Sequoyah 1	SG NR LVL	764-221
	SG NR LVL	764-223
	SG NR LVL	764-225
	SG NR LVL	764-226
	SG NR LVL	764-228
<u>B. Plants to whom affected Lot 1 transmitters were shipped by Westinghouse, but which our best information indicates that the devices are no longer installed.</u>		
Salem 2	SG NR LVL	764-151
	SG NR LVL	764-152
	SG NR LVL	764-153
	SG NR LVL	764-155
	SG NR LVL	764-156
	SG NR LVL	764-159
Diablo Canyon 1	SG NR LVL	764-138
	SG NR LVL	764-139
	SG NR LVL	764-140
	SG NR LVL	764-143
	SG NR LVL	764-145
	SG NR LVL	764-146
	SG NR LVL	764-147
	SG NR LVL	764-149

Table 1

<u>Plant</u>	<u>Function</u>	<u>Serial Number</u>
Diablo Canyon 2	SG NR LVL	764-119
	SG NR LVL	764-123
	SG NR LVL	764-124
	SG NR LVL	764-122
	SG NR LVL	764-126
North Anna 1	Pressurizer Pressure	763-137
North Anna 2	Pressurizer Pressure	763-311
	Pressurizer Pressure	763-312
	Pressurizer Pressure	763-313