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FLORIDA POWER & LIGHT COMPANY

February 25, 1983
L-83-96

Mr. James P. O'Reilly
Regional Administrator, RegionII
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

RE: St. Lucie - Unit 2
Docket No. 50-389, 10CFR50.55(e), 82-030
ITT BARTON PRESSURE TRANSMITTERS

On December 21, 1982 Florida Power and Light notified the NRC of a potential 10CFR50.55(e) condition existing at St. Lucie Unit #2 site involving ITT Barton pressure transmitters. Attached please find our final resolution of this issue.

Very truly yours,

Robert E. Uhrig

Robert E. Uhrig
Vice President
Advanced Systems & Technology

IE 27

I. SUMMARY

Testing of ITT Barton pressure transmitters revealed that they could exhibit signal drift uncertainties larger than design specifications. These unexpected uncertainties are believed to be the result of (1) temperature conditioning (stress relieving) which occurs only during initial use of the transmitters and (2) intermittent current leakage through a metallic washer at elevated temperatures. In addition to these uncertainties, four narrow range (0-750 psia) pressure transmitters exhibited unexpected "pressure shift" uncertainties due to use in the 0-750 psia range after operating at pressures (2300-2400 psia) approximating those for normal operation.

If the above uncertainties had gone undetected it could have been possible to experience delayed or unexpected safety system actuation or leakage of radioactive coolant through Shutdown Cooling System (SDCS) relief valves. Therefore, the anomalous behavior of the ITT Barton pressure transmitters is reportable with respect to 10CFR50.55(e).

II DESCRIPTION

The affected pressure transmitters (Models 763 and 764) can exhibit temperature drift uncertainties about 1.5% larger than the design criterion ($\pm$0.5%) for temperatures up to 130°F. The four narrow range transmitters also exhibited "pressure shift" uncertainties of about 3% in addition to the above "drift" uncertainties. For accident temperature conditions (420°F), the Model 763 and 764 transmitters can exhibit uncertainties about 3% - 4% above the ITT Barton design criterion ($\pm$ 10%).

The affected pressure transmitters provide input for the following applications:

MODEL	TAG NUMBER	DESCRIPTION
763	PT-1103, -1104, -1105, -1106	SDCS Initiation Interlock, Coolant System Pressure-Temperature Limit Compliance
763	PT-1102A, B, C, D	Pressurizer Pressure (Thermal Margin-Low Pressure Trip)
763	PT-8013A, B, C, D	Steam Generator Pressure
763	PT-8113, 8123	Steam Generator Pressure on Hot Shutdown Panel (Post Accident Monitoring)
763	PT-1107, 1108	Wide Range Pressurizer Pressure (Post Accident Monitoring)
763	PT-21-8A, P-21-88	Intake Cooling Water Header Pressure
764	P-1158, -1168, -1178 -1188	Component Cooling Water Flow

764	LT-9013A, B, C, D LT-9023A, B, C, D	Steam Generator Water Level
764	LT-1104, -1105	Pressurizer Level on Hot Shutdown Panel (Post Accident Monitoring)
764	LT-1110X, Y	Pressurizer Water Level (Low Level Heater Cutout)
764	LT-9113, -9123	Steam Generator Water Level on Hot Shutdown Panel (Post Accident Monitoring)

III CORRECTIVE ACTION

The four narrow range transmitters (tag number PT-1103, -1104, -1105, and 1106) are being replaced with Rosemount transmitters that have lower uncertainties for normal conditions relative to the ITT Barton transmitters. The remaining transmitters will be calibrated after appropriate temperature conditioning to obtain acceptable uncertainties. Also, if the safety system setpoints being generated for the higher uncertainties indicate that it is necessary to reduce the uncertainty resulting from current leakage, the metallic washer may be replaced with a fiberglass washer.

IV SAFETY IMPLICATION

If all of the four narrow range transmitters indicated reactor coolant system (RCS) pressure based on the highest expected uncertainties, it would be possible for the operator to initiate the SDCS at higher than expected RCS pressures. This could result in some leakage of radioactive coolant from the SDCS relief valves. Even with the higher uncertainties for these four transmitters, the low temperature overpressure protection system and power-operated relief valve setpoints would ensure that the RCS pressure-temperature limits are not exceeded.

If uncertainties occurred which were greater than those assumed in the generation of the safety system setpoints, delayed or unexpected safety system actuations could occur. Therefore, there exists the potential for an impact on safe operation of the plant. However, this impact would not be expected to be significant since the highest uncertainties would have been only a few percent (see Section II) above ITT Barton design criterion.

V CONCLUSION

This issue is reportable with respect to 10CFR50.55(e).

This report is final and completes requirements for reporting to the NRC.