



March 11, 1983
L-83-144

Mr. James P. O'Reilly
Regional Administrator, Region II
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), 83-001
PORV Solenoids, Long-Term Reliability Deficiency

On February 10, 1982 Florida Power & Light notified the NRC of a potential 10CFR50.55(e) condition existing at St. Lucie Unit #2 site involving Garrett solenoid valves. Attached please find our final resolution of this issue.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Robert E. Uhrig".

Robert E. Uhrig
Vice President
Advances Systems & Technology

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I. Summary

During qualification testing of a Garrett solenoid valve, the possibility of long-term galling between internal components was identified. This galling could lead to the solenoid valve not closing on demand. For St. Lucie Unit 2 this could lead to release of additional coolant through the reactor coolant system power-operated relief valves (PORVs) during an overpressurization event. Therefore, this issue is reportable according to the criteria of 10 CFR 50.55(e)

II. Description

The solenoid used at St. Lucie Unit 2 which indicated the potential for internal galling is Garrett model 3750028. This solenoid is used on two model 3750010 PORVs and eight model 3750038 safety injection tank (SIT) vent valves. The qualification test included cyclic aging of 10,000 cycles of cold operation and 1000 cycles of hot operation. The models being tested exhibited stem and armature galling after 1000 hot cycles and 2500 cold cycles.

III. Corrective Action

Garrett changed materials and internal clearances and then successfully retested the solenoid for over 11,000 cycles. Replacements for the PORV solenoids and replacement parts for the SIT solenoid vent valves will be supplied for St. Lucie Unit 2. These replacements will be installed prior to the first refueling. (The solenoids installed at St. Lucie Unit 2 will not be cycled prior to the first refueling to the extent that could result in galling.)

IV. Safety Implication

If the SIT vent valves failed to close on demand, safe operation of the plant would not be affected since the valves would only be opened to depressurize the SITs during a cooldown of the reactor coolant system. Subsequent closure of the valves is not necessary to complete the cooldown.

If the PORV solenoid valves failed to close on demand, release of coolant through the PORVs during an overpressurization event would not be terminated as expected. As a result, there would exist the potential for release of additional coolant to the containment building via the quench tank. The amount of coolant released would probably not be significant since redundant PORV position indications are available in the control room, facilitating prompt detection and PORV block valve closure by the plant operator.

V. Conclusions

This issue is reportable according to the criteria of 10 CFR 50.55(e).

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