



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENCLOSURE 1

SUPPLEMENTAL SAFETY EVALUATION BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO REQUEST FOR RELIEFS FROM
INSERVICE TESTING REQUIREMENTS
FLORIDA POWER & LIGHT COMPANY, ET AL.
ST. LUCIE PLANT, UNIT NO. 2
DOCKET NO. 50-389

INTRODUCTION

By letter dated January 13, 1986 (A. C. Thadani to C. O. Woody), the staff forwarded its inservice testing Safety Evaluation for the St. Lucie Plant, Unit No. 2. For completeness and continuity, the January 13, 1986 letter with the Safety Evaluation is enclosed as Enclosure 2. The staff's evaluation addressed the Florida Power and Light Company's (FP&L, the licensee) inservice testing program and relief requests for pumps and valves. The licensee's program is applicable for the period from August 8, 1983 to August 8, 1993. The letter and Safety Evaluation completed the staff's efforts for the first 10-year inservice testing interval.

By letter dated April 4, 1988, the licensee determined that additional reliefs were necessary. Three revised valve relief requests and one new valve relief request were made. In addition, the licensee provided a listing of changes made to the program since the staff's initial review.

The following Supplemental Safety Evaluation addresses the three revised valve relief requests and one new valve relief request. Since the licensee did not request staff review of the changes made to the program since issuance of the staff's initial Safety Evaluation, it is not addressed in this Supplemental Safety Evaluation. Changes made to inservice testing programs after a staff review was performed will be the subject of a planned Generic Letter. The applicable ASME Section XI Code edition and addenda used for this review is the 1980 edition with addenda through Winter 1980.

The staff's evaluation of the licensee's additional relief requests will use the same numbering scheme and format as the staff's January 13, 1986 Safety Evaluation. Three relief requests deal with the safety injection system and one relief request deals with the containment spray system. The safety injection system reliefs will be numbered 4.c and the containment spray system relief will be numbered 4.h.

8910060114 891002
PDR ADOCK 05000389
P PDC

4. Specific Requests for Relief

c. Safety Injection (SI)

(3) Relief Request

The licensee originally requested specific relief for Category C valves V-3401 and V-3410 from the quarterly full-stroke exercise required by IWV-3520 and proposed to full-stroke exercise these valves during refueling shutdowns and also to part-stroke them quarterly during the performance of associated pump tests.

Evaluation

Although the licensee states that the relief request is revised, it is materially no different from the relief previously requested and granted in the staff's January 13, 1986 evaluation. The staff's evaluation stated that the licensee had demonstrated that the valves could not be full-stroke exercised during operation or at cold shutdown and that they were partially opened to provide flow from the Refueling Water Tank (RWT) to the High Pressure Safety Injection (HPSI) pumps during the quarterly tests of the pumps. Therefore, no additional relief is needed.

(4) Relief Request

The licensee originally requested specific relief for Category C valves I-V07000 and I-V07001 from the quarterly full-stroke exercise requirements of IWV-3520. The licensee proposed to full-stroke exercise these valves during cold shutdown and to part-stroke them during the quarterly performance of associated pump tests. The licensee is revising the relief request to the extent that full-stroke testing will be performed during refueling outages instead of during cold shutdown.

Licensee's Basis for Requesting Relief

The licensee's original basis for relief was that these 14-inch check valves cannot be tested during plant operation because the Low Pressure Safety Injection (LPSI) pumps do not develop sufficient discharge head to establish a flow path to the Reactor Coolant System. The licensee is revising the relief requested to the extent that these valves cannot be tested during cold shutdown because the shutdown cooling system has insufficient flow capacity to provide for both a flow path from the RWT to the reactor vessel and to provide for the removal of residual heat from the reactor core.

Evaluation

The staff's original evaluation concurred with the licensee's original basis for relief and stated that the valves are partially opened during quarterly tests of the LPSI pumps and are fully tested during cold shutdown. Based on the licensee's statement that these check valves cannot be tested during cold shutdown because the shutdown cooling system has insufficient flow capacity to provide for both a flow path from the RWT to the reactor

vessel and to provide for the removal of residual heat from the reactor core, the staff agrees that these check valves should be tested (full-stroke) during refueling outages and exercised quarterly (part-stroke test) during the performance of the associated pump tests. For the above reasons, the staff agrees that testing of these check valves during the cold shutdown is impractical and the imposition of the Code requirements would create an unreasonable burden for the licensee. The staff approves the requested relief.

(20) Relief Request (New)

The licensee has requested specific relief for Category B valves V-3654 and V-3656 from the quarterly exercising requirement of IWV-3410 and proposed to exercise (full stroke) these valves during cold shutdown and during each refueling outage.

Licensee's Basis for Requesting Relief

These valves provide isolation of the HPSI pump discharge header when the HPSI system is aligned for post-LOCA hot leg injection. Administrative controls require these valves to be positioned open and locked open during normal plant operation. Failure of either of these valves in the closed position, by testing during plant operation, would result in the loss of one of the two required independent emergency core cooling subsystems.

Evaluation

The staff agrees with the licensee's basis and approves the requested relief. The staff also finds that the imposition of the Code requirements is impractical and would create an unreasonable burden for the licensee because if either of the valves would fail closed while testing during plant operation, one of the two required emergency core cooling subsystems would be lost. Paragraph C.1.a of the staff's January 13, 1986 evaluation applies to this relief request; also see C.4.c(18) and C.4.c.(19).

h. Containment Spray

(3) Relief Request

The licensee originally requested specific relief for Category C valves V-07119 and V-07120 from the exercise test frequency requirements of IWV-3520. The licensee proposed to exercise these valves during cold shutdown and every 3 months during the performance of the safety injection system pump tests. The licensee is revising the relief request to the extent that the valves will be flow tested during refueling shutdowns instead of during cold shutdown.

Licensee's Basis for Requesting Relief

The licensee's original basis for relief was that the 24-inch check valves cannot be tested during plant operation because neither the RWT, HPSI pumps, nor the LPSI pumps develop sufficient discharge head to establish a flow path to the Reactor Coolant System. The licensee is revising the relief request to the extent that these valves cannot be tested during cold shutdown as follows. If the licensee used the HPSI pumps, this could subject the RCS to transient conditions exceeding the pressure-temperature limits specified in plant Technical Specification 3.4.9.1. In addition, the licensee stated that they cannot use the LPSI pumps because the shutdown cooling system has insufficient flow capacity to provide for both a flow path from the RWT and to provide for removal of residual heat from the reactor core.

Evaluation

The staff's original evaluation concurred with the licensee's original basis for relief and approved the requested relief. Based on the licensee's reasons for not testing these valves during cold shutdown, the staff agrees that these check valves should be flow tested (full stroke) during refueling shutdowns and that they will be exercised quarterly during the performance of the HPSI and LPSI pump tests. Imposition of the Code requirements is impractical and would create an unreasonable burden for the licensee because (1) using HPSI pumps for testing could create a transient resulting in exceeding the Technical Specification limit of Section 3.4.9.1 and (2) using LPSI pumps for testing the shutdown cooling system has insufficient flow capacity for flow path from the RWT and for removal of residual heat from the reactor core. The staff approves the requested relief.

CONCLUSION

Based upon the above evaluation, pursuant to 10 CFR 50.55a(g)(6)(i), the staff has determined that the code requirements are impractical and that the relief requests are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the code requirements were imposed on the facility. In each instance where relief has been granted, compliance with the code would require redesign or replacement of the affected component. The additional relief requested for Category C valves V-3401 and V-3410 is not needed.

Date: October 2, 1989

Principal Contributors:

E. Tourigny
J. Norris