



April 21, 1983
L-83-251

Mr. James P. O'Reilly
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, GA 30303

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NRC REGION II
ATLANTA, GA

Dear Mr. O'Reilly:

RE: St. Lucie Plant - Unit #2
Docket No. 50-389/10 CFR 50.55(e) 83-009
Condensate Storage Tank Damage

On March 22, 1983, Florida Power & Light Company notified NRC, Region II, of a potential 10 CFR 50.55(e) condition at the site involving damage incurred to the Condensate Storage Tank.

Pursuant to the requirements of 10 CFR 50.55(e), a final report is attached.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

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I. Summary

On March 20, 1983, the Condensate Storage Tank (CST) was being drained subsequent to its use as a heated source of water for hydrostatic testing of certain secondary systems prior to construction completion signoffs. During the draining process, site personnel in the CST area noticed indentations on the upper sections of the tank and closed the drain valve. A non-conformance report (NCR 6950ME) was generated and reviewed by the site NCR review group, resulting in notification to NRC, Region II of a potentially reportable condition. This report summarizes the extent of damage, the ongoing repairs and the scheduled completion date.

II. Description

Condensation of steam formed within the CST coincident with the tank draining most likely caused local vacuum conditions leading to the tank damage.

The tank vendor, Chicago Bridge and Iron Company, was brought onsite to perform a detailed inspection, recommend appropriate repairs and effect such repairs on a timely basis. The CST suffered indentations and creases in portions of the upper rings and roof plates. There was no damage to the anchorage system, lower two shell rings and compression bar, and only superficial cracks in the foundation concrete were found.

III. Corrective Action

The indentations were pulled out from the affected rings and roof plates and slightly creased areas, edges and raised areas flattened to conform to tank dimensional controls and aesthetic appearances. Two areas of the tank in the 5th ring were cut out and double butt welded plates were installed. In addition, three external horizontal stiffener rings are welded around the complete circumference of the tank and a horizontal stiffener with a 10-foot radius is installed and welded to the roof. All repairs, welding, and non-destructive examinations are performed to approved procedures and in accordance with the applicable QA manuals. Inspections verify that the repaired tank conforms to the original requirements. Cracks in the concrete were verified to be superficial and are sealed to prevent moisture ingress. The interior of the tank was sand-blasted and, following repairs, painted with Plasite 7156, which exceeds the original design specification. Finally an improved CST vent design incorporating a backup vacuum breaker replaces the original design. The tank will be hydrostatically tested and ready for service prior to entering into Mode 3. All pertinent documentation concerning this incident is maintained at the site.

IV. Safety Implications

During normal plant operations, there is no conditions whereby steam could be present in the CST and the abnormal vacuum condition could not occur. The tank buckling, which occurred during pre-operational testing, did not affect the CST integrity; i.e., no cracks, holes or leaks were discovered. The CST could have performed its intended safety function at any time during the plant lifetime (i.e., provide a water source for AFW pumps). FPL is, however, judging this incident as reportable under 10CFR 50.55(e)

since the demonstration of such analyses if left uncorrected, could require extensive evaluations and analyzes which could potentially jeopardize scheduled tests and operations. The repaired tank meets or exceeds its original criteria and bases as set forth in the St. Lucie Unit 2 Final Safety Analysis Report.

V. Conclusion

Following the corrective actions outlined above, this item is considered closed.

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Following the corrective actions outlined above, this item is considered closed.