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 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
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 RECIP. NAME RECIPIENT AFFILIATION
 THADANI, A. C. PWR Project Directorate 8

SUBJECT: Suppls 860617 ltr re steam generators. Comparison of eddy current testing results demonstrates that bobbin coil performed better than 8x1 re detection & sizing of flaws.

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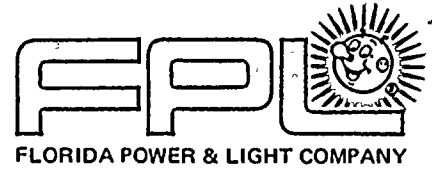
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Table with multiple columns containing regulatory information, including dates and numerical values.



L-86-263
June 25, 1986

Office of Nuclear Reactor Regulation
Attention: Mr. Ashok C. Thadani, Director
PWR Project Directorate # 8
Division of PWR Licensing - B
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Thadani:

Re: St. Lucie Unit 1
Docket No. 50-335
Steam Generators

The following information is submitted to supplement Florida Power and Light Company (FPL) letter L-86-259 dated June 17, 1986.

A reactor coolant system pressure test was conducted on December 22, 1985, prior to returning St. Lucie Unit 1 to service after refueling. The primary to secondary (steam generator) differential pressure during this test was approximately 1400 psi. The normal operating primary to secondary differential is also approximately 1400 psi. We believe the probability for an accident or operational transient in which the primary to secondary differential pressure significantly exceeds 1400 psi is acceptably low to justify continued operation over the remainder of the operating cycle, when considered in conjunction with the supporting details outlined below.

Despite the low probability of this event we have examined the limiting accident for radiological consequences (MSLB) which shows that the predicted primary to secondary differential is approximately 200 psi above normal operating differential. This slightly higher than normal primary to secondary pressure differential is present only for approximately 20 seconds (differential pressure of approximately 200 psi above normal exists for only several seconds) of the MSLB. After 20 seconds, the differential pressure falls below the normal 1400 psi value.

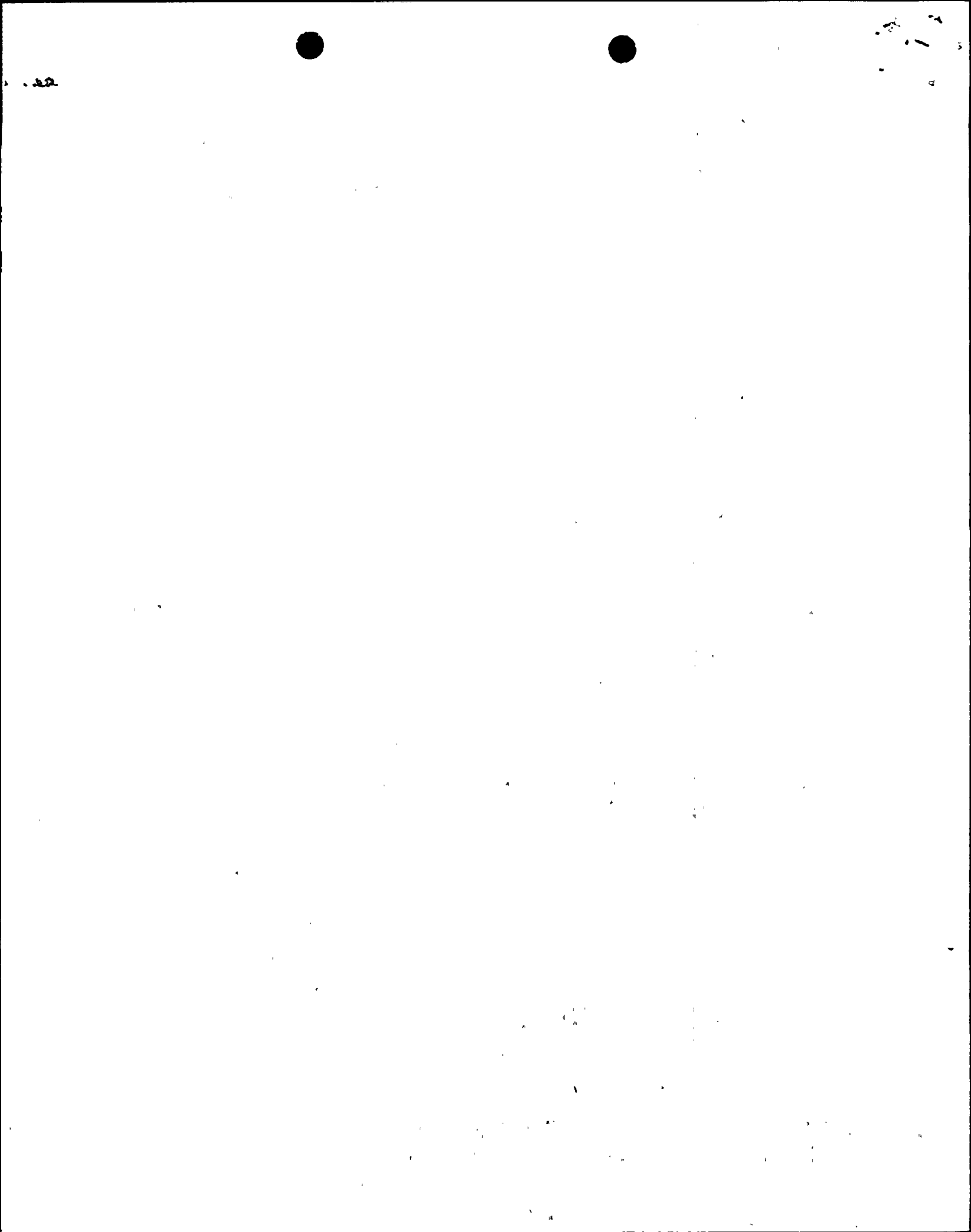
Calculations in accordance with ASME Section III show that the minimum wall thickness for sustaining the MSLB accident loading is 10 mils (20.8% remaining wall). Further, calculations in accordance with Regulatory Guide 1.121 show that accident loading is not controlling for tube wall thickness but rather the maintenance of a safety margin of three (3) against tube rupture for normal operating differential pressure is controlling. This provides for a minimum tube wall thickness of 18 mils (37% remaining wall) which is significantly exceeded by the 40% plugging limit minimum thickness of 29 mils (60% remaining wall). FPL has performed 100% eddy current testing of the St. Lucie Unit 1 steam generators and plugged all tubes with indicated defects equal to or greater than 40% (60% remaining wall).

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FPL tube burst tests, which are consistent with industry tube burst tests, show a burst pressure of > 6000 psig for 50% thru wall defects and over 3000 psig for 80% thru wall defects.

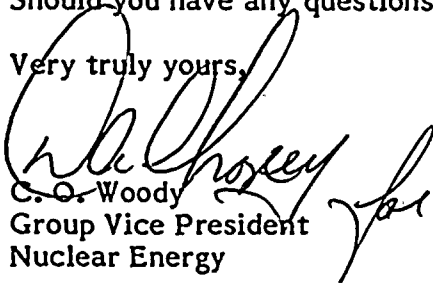
Additionally, FPL has instituted procedures that can detect very small primary to secondary tube leaks. As stated in our June 17, 1986 letter L-86-259, we have established a leakage limit of 0.3 gpm for administrative shutdown of the unit during the remainder of cycle 7.

The preliminary results of the statistical analysis of the flaw growth measurements from Spring 1984 to Fall 1985 show the growth rate to be insignificant. This further supports a conclusion that safe margins will be maintained over the remainder of the operating cycle.

The preliminary results of the comparison of the ECT results between the 8 x 1 probe and the bobbin ECT probe are also available. The conclusion from this comparison is that the bobbin coil showed some flaws that the 8 x 1 failed to show and that there were no advantages demonstrated by the 8 x 1 over the bobbin coil. In fact as mentioned above the comparison demonstrated that the bobbin coil performed better than the 8 x 1 regarding detection and sizing of the flaws.

Should you have any questions regarding this material, please contact us.

Very truly yours,


C. O. Woody
Group Vice President
Nuclear Energy

COW/JJZ:de

cc: Dr. J. Nelson Grace, USNRC, Region II
Harold F. Reis, Esquire, Newman & Holtzinger
PNS-LI-86-202

