FPL

Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

August 3, 2000

L-2000-145
10 CFR 50.55a
10 CFR 50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Unit 2
Docket No. 50-389
Revised Refueling Outage SL2-11
Steam Generator Tube Inservice Inspection Special Report

Attached is the revised ASME Form NIS-BB required by Sections 4.4.5.5.b and 6.9.2 of the St. Lucie Unit 2 Technical Specifications for the Fall 1998 refueling outage (SL2-11). The report was originally submitted by FPL letter L-99-19 on January 27, 1999, and informed you that 100% of all in-service tubes in steam generator (S/G) 2A and 2B were examined from tube end to tube end. The report is being resubmitted to address an incomplete examination of the S/G 2B tube bundle due to encoding errors. These errors were identified during the April 2000 SL2-12 refueling outage.

The error, which was evaluated under the St. Lucie corrective action program (CR 00-0725), resulted in 32 tubes not being inspected in S/G 2B during the November 1998 SL2-11 outage. Based on SL2-11 sample inspection results, inspection of 100% of in-service tubes in S/G 2B was not required by the Technical Specifications. All open tubes in S/G B were inspected, however, with the exception of the 32 tubes that were missed as a result of the encode error. These 32 tubes did not contain any degradation that would require surveillance during the November 1998 SL2-11 outage by the Technical Specifications. Therefore, the tube inspections completed for S/G 2B exceed Technical Specification requirements, and the error did not result in a missed surveillance inspection.

Detection of the error is a result of process improvements that were implemented prior to the SL2-12 inspection, which include improved operating procedures and training, data analysis process improvements and data management process improvements. A root cause analysis was completed under the corrective action program to identify and address further corrective actions. The root cause was determined to be an inadequate software interface between the Genesis robot and the data acquisition software, as well as too much reliance on human performance during repetitive tasks. Additional corrective actions include further software and procedure improvements and independent verification of tube locations.

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The report of the inservice inspection follows:

1. One hundred percent of all in-service tubes in S/G 2A were examined from tube end to tube end. However, only 99.6% (8111) of the tubes in S/G 2B were examined from tube end to tube end. This incomplete examination was the result of encoding errors detected during the April 2000 SL2-12 examination. These numbers are shown under *Total Tubes Inspected* on the attached FORM NIS-BB, *OWNERS' DATA REPORT FOR EDDY CURRENT EXAMINATION RESULTS*. A total of thirty-two (32) tubes were not tested during the 1998 refueling outage (SL2-11).

2. All previously installed plugs were verified for correct location and general condition.

3. The location and percent of wall thickness penetration is also summarized on the attached FORM NIS-BB under *Location of Indications*. Only mechanical wear damage was sized for through-wall depth using qualified sizing techniques. Depth sizing techniques for other damage mechanisms (i.e. corrosion/cracking) have not been validated for St. Lucie Plant. Therefore, a plug on detection approach was used during this examination when such indications were not traceable to prior inservice or preservice examinations, or when evidence of change, or potential growth was reported.

4. The examination results for both steam generators were classified as category C-2 according to the Technical Specification Section 4.4.5.2. Therefore, the next examination shall be performed within 24 calendar months.

Should there be any questions, please contact us.

Very truly yours,

Rajiv S. Kundalkar
Vice President
St. Lucie Plant

RSK/GRM

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

Revised

Steam Generator Tube Inservice Inspection

St. Lucie Unit 2

SL2-11 Special Report

FORM NIS-BB OWNERS' DATA REPORT FOR EDDY CURRENT EXAMINATION RESULTS
As required by the provisions of the ASME CODE RULES

EDDY CURRENT EXAMINATION RESULTS
Revision 1 5/16/00 (see Remark 6)

PLANT: St. Lucie Unit 2

EXAMINATION DATE: November 13, 1998 thru November 20, 1998

STEAM GENERATOR	TOTAL TUBES INSPECTED	TOTAL TUBES 20%-39%	TOTAL TUBES >= 40%, VOL, Circ. & Axial	TUBES PLUGGED AS PREVENTIVE MAINTENANCE	TUBES PLUGGED THIS OUTAGE	TOTAL PLUGGED TUBES IN S/G
A	8104	199	8(1)	2	12(3)	319
B	8111(6)	133	10(2)	0	11(4)	279

LOCATION OF INDICATIONS
(20% - 100%, VOL, Circ. & Axial)

STEAM GENERATOR	U BENDS DHB to DCB	EGGCRATES 1 to 7		PARTIAL SUPPORTS 8 AND 9		TOP OF TUBE SHEET TO #1 EGGCRATE		Total Indications 20%-39%	Total Indications >= 40%, VOL, Circ. & Axial
		H/L	C/L	H/L	C/L	H/L	C/L		
A	194	0	1	5	1	6	0	199	8
B	132	0	2	2	0	7	0	133	10

Remarks:
1. Consisted of two >= 40% wear flaws and six axial flaws at the hot leg tubesheet .
2. Consisted of three >= 40% wear flaws, six axial and one circumfrential at the hot leg tubesheet.
3. Includes two loose part indications (LPI).
4. Includes one loose part indication.
5. VOL – Volumetric Flaw, Percentage values are for wear flaws only.
6. 32 Tubes were not examined in 1998 due to an encode error detected during the April 2000 refueling outage. These tubes showed no imperfections or degraded conditions.