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Mr. Victor Stello, Jr.	Florida Power & Light Company Miami, Florida Robert E. Uhrig	4/20/77
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PLANT NAME:

Turkey Point Unit No. 4

RJL

ENCLOSURE

Consists of additional information concerning Steam Generator Inspection Program....

(2-P)

ACKNOWLEDGED

FOR ACTION/INFORMATION

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NRC FORM 195 (2-76)

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FLORIDA POWER & LIGHT COMPANY

April 20, 1977
L-77-117

Director of Nuclear Reactor Regulation
Attn: Victor Stello, Jr., Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Stello:

Re: Turkey Point Unit 4
Docket No. 50-251
Supplemental Information

On April 11, 1977, Florida Power & Light Company submitted a Steam Generator Inspection Program for Turkey Point Unit 4 (L-77-112).

This letter forwards additional information concerning the inspection program.

Very truly yours,

Robert E. Uhrig
Vice President

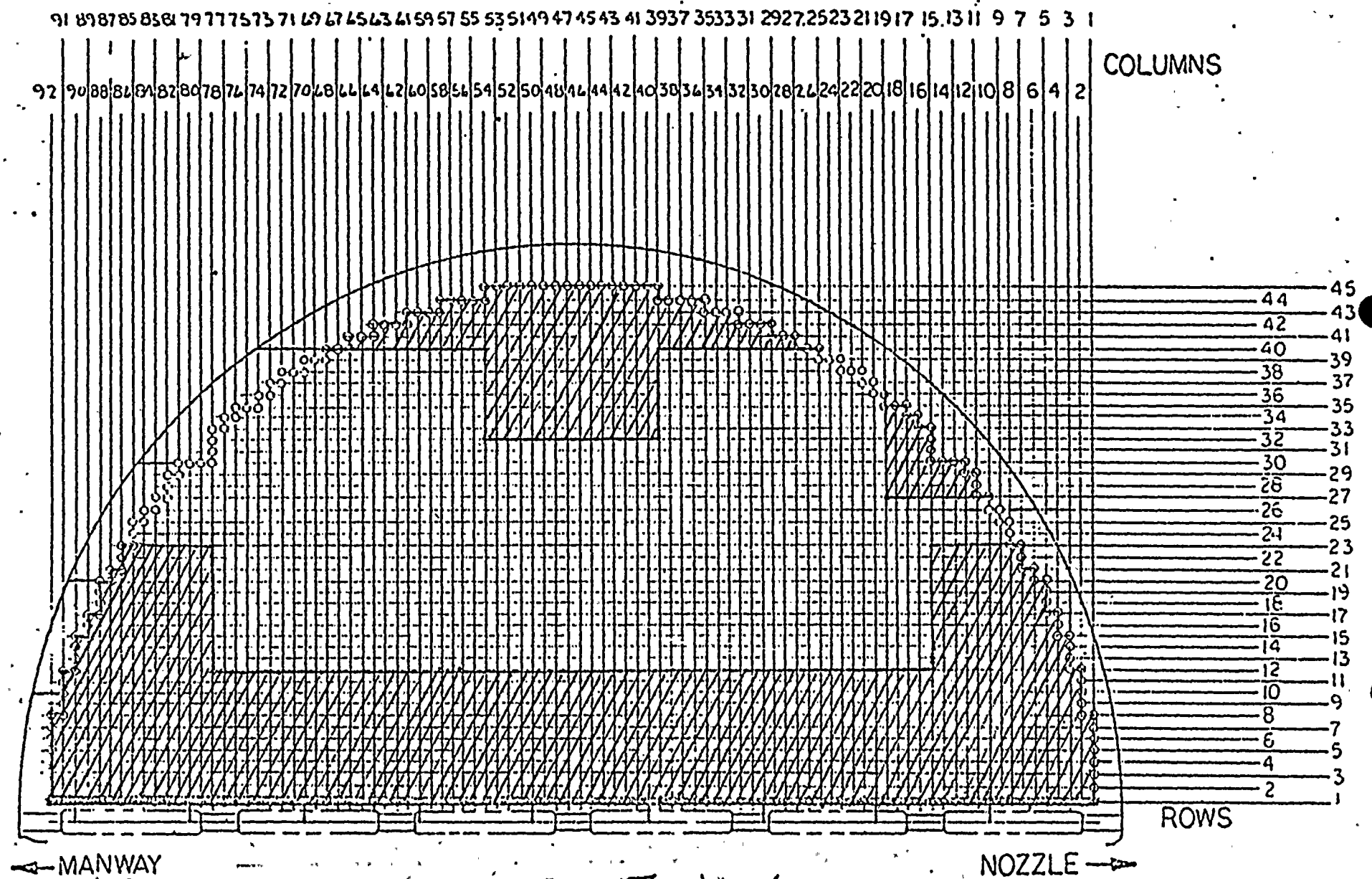
REU/GDW/hlc
Enclosure

cc: Norman C. Moseley, Region II
Robert Lowenstein, Esq.

7711160381

ATTACHMENT 1

SERIES 44



TURKEY POINT NO. 4

TUBE I.D. GAUGING PROGRAM

[CROSS HATCHED AREAS, ALL UNPLUGGED TUBES]

(L-77-117)

TUBE PLUGGING CRITERIA FOR TURKEY POINT 4

Formation and implementation of plugging criteria for suspect steam generator tubing will be based on recognition of the probable causes that lead to possible tube degradation and the manner in which they occur. Analysis and inspections resulted in the following basis which was implemented to establish a plugging pattern and criteria in the recent Surry 2 shutdown.

1. The area of the plate which encompasses the high strain increases as the flow slots close.

2. The strain in the plate is expected to be correlated to hoop strain in the tubes in the affected regions.

3. Analysis indicates that plate strain may be correlated to tube leakage events (associated with a tube diameter reduction).

4. Limited data for the Surry Units indicates that leaking in a dented region is most probable when tube diameter is reduced below approximately .500 inch.

5. A rate of future strain increase can be estimated by engineering analysis of inspection results.

6. Actual gauging of the tube can be used to provide a correlation for the analysis results.

In the case of Turkey Point 4, inspections and measurements of the flow slots will be done as a measure of the strain in the plates. From these inspections and previous measurements, a plate strain rate can be determined. This plate strain rate will be used in conjunction with gauging of the tubes to determine the extent of severe strain and deformation of the tubes.

Since the rate of growth of the severely strained area will then be estimated from inspection results and computer analysis and the boundaries of this area determined, the expected boundary of the strained area can be calculated for the next period of full power operation. Tubes in the boundary growth area that are expected to become severely strained and deformed during this period can be identified and plugged as a preventative measure. Those tubes identified by gauging as severely deformed will also be plugged.

The steam generators in Turkey Point 4 have, to this date, experienced mild consequences of the tube diameter reduction as evidenced by the number and frequency of leaking tubes. The plugging criteria developed and used for Surry 2 may therefore be overly restrictive for the actual conditions of the Turkey Point 4 steam generators. Final criteria, for the anticipated period of operation, will be developed and implemented specifically for Turkey Point 4, as the results of the inspection program become evident.