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TO: Mr. George Lear

FROM: FPL
Miami, Fl. 33101
Robert E. Uhrig

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PLANT NAME: TURKEY POINT UNIT # 4
jcm 07-18-77

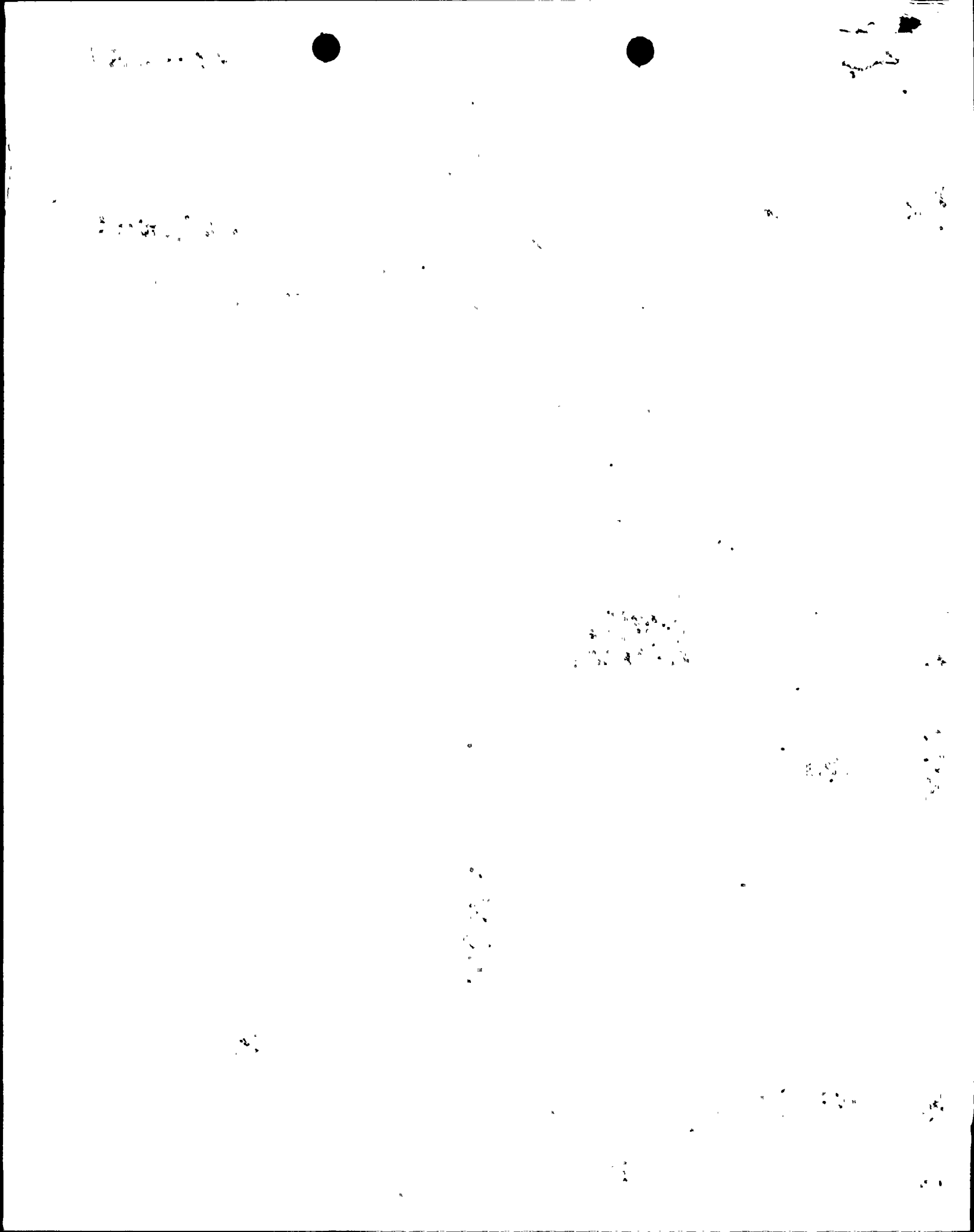
ENCLOSURE Consists of Status of the Examination of Turkey Point Unit 4, Steam Generator Tubes R2-C49 and R42-C53...

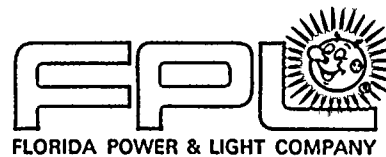
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	771990134





July 15, 1977
L-77-224

Regulatory

File Copy

Office of Nuclear Reactor Regulation
Attention: Mr. George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Lear:

Re: Turkey Point Unit 4
Docket No. 50-251
Steam Generator Tube Samples
Laboratory Analysis

Samples of two tubes were removed from steam generator "4C" during the current refueling outage and analyzed by our NSSS vendor. The results of the analysis are attached for your information.

Very truly yours,

Robert E. Uhrig
Vice President

REU/MAS/ms

Attachment

cc: Mr. Norman C. Moseley, Region II
Robert Lowenstein, Esquire

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STATUS OF THE EXAMINATION OF TURKEY POINT UNIT 4

STEAM GENERATOR TUBES R2-C49 and R42-C53

Two hot leg tubes were removed from FPL Unit 4 S/G C and sent to the Westinghouse Research and Development Center for examination.

Tube R2-C49 contained five support plate locations. The non-destructive phase of the examination consisting of photo documentation, eddy current examination, radiography, and dimensional characterization is complete. Eddy current examination indicates large amounts of tube distortion at most intersections. Radio-graphic examination shows apparent cracking at the fourth support plate region. All support regions show slight material density variations.

Destructive examination to date has concentrated on the fourth support plate intersection in the area of crack indications. Preliminary metallographic examinations revealed OD initiated intergranular cracking to a depth of approximately 0.010 inches and ID cracking to a depth of approximately 0.003 inches. Work is continuing to further document these findings.

Numerous metallographic samples have also been cut and mounted from other areas on this tube. Examination has not been completed on these samples due to an urgency to obtain data at the fourth support locations.

Tube R42-C53 was removed to some distance above the tube sheet but not including the first support. Eddy current findings show a 35% low volume, OD initiated indication in the area which corresponds to above but near the top of the tube sheet. Radiographic examination shows slight wall loss associated with that area. OD dimensional traces also show a reduction of the diameter by approximately .010" at the top of the tube sheet.

Tube wall thickness measurements taken in what appears to be the thinned region (35% E.C. indication) show a wall loss of approximately 0.013" in a very localized area.

Metallographic examination in the area near the thinned region shows wall loss of approximately .005". It is possible that to date we have not polished into the area of deepest attack. This area, along with the immediately surrounding area, is covered with black corrosion products, suggesting that active corrosion was taking place sometime ago. Examination of the corroded area is continuing.

The corrosion attack of this tube at a location just above the tube sheet is analogous to the incidence of phosphate thinning attack which has been confirmed in the Turkey Point and other plants. This corrosion has occurred during the period when phosphate chemistry control was maintained in the steam generators and also for some period after the units converted to AVT control. After conversion to AVT, residual phosphates in the sludge have been responsible for continued thinning, although diminishing in incidence.

