P.O. BOX 3100 MIAMI, FLORIDA 33101

FLORIDA POWER & LIGHT COMPANY

August 22, 1974

Mr. John F. O'Leary, Director
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. O'Leary:

ABNORMAL OCCURRENCE NO. 251-74-2
AUGUST 22, 1974
OCCURRENCE DATE: AUGUST 12, 1974
TURKEY POINT UNIT NO. 4
PRIMARY TO SECONDARY LEAK

A. CONDITION PRIOR TO OCCURRENCE

The reactor was in routine operation at 99% power.

B. DESCRIPTION OF OCCURRENCE

At 11:15 a.m. on August 12, 1974, counting of the daily composite steam generator secondary system water sample revealed a significant increase in radiation level. The composite concentration was 2.4×10^{-4} μCi/ml as compared to $<1 \times 10^{-7}$ μCi/ml on the previous day. This increase in concentration was considered to be evidence of a primary to secondary leak.

After the primary to secondary leak was discovered, the steam generators were sampled individually to identify which steam generator contained the leak. From the gross activity level of each steam generator, it was apparent that the leak was in the "A" steam generator.

C. CAUSE OF OCCURRENCE

The specific mechanism of the primary to secondary leakage has not been determined. However, as stated in the corrective action, the reactor was shut down to continue the investigation into the cause.

D. ANALYSIS OF THE OCCURRENCE

Upon detection of the increased activity in the steam generator, the primary coolant leak rate was immediately calculated. The calculation showed a leakage of 0.116 gpm which is considered normal. Subsequent calculations have shown leakages of this same magnitude, indicating that the primary to secondary leak was not increasing.

50-251 inquiry

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Failure of the 4-R-19 radiation detector (AO-251-74-3) to detect the increase in activity resulted in steam generator blowdown being discharged to the cooling canals for a maximum of 27.4 hours. Calculations show that the maximum activity which could have been discharged to the cooling canals was 10.4 mCi. This represents ~.2% of the quarterly limit allowed by the Technical Specifications. After this discharge, the accumulated activity of the total plant discharge to the cooling canals for the month was <.3% of the quarterly limit.

An extensive program of process sampling, radiation monitoring and leak rate calculation was initiated and continued until reactor shutdown. Sampling revealed that there was no detectable airborne activity at the generating station boundary. Thus, no established limits were exceeded, and neither reactor safety nor the health and safety of the public were jeopardized by this occurrence.

E. CORRECTIVE ACTION

The immediate corrective action consisted of:

1) Terminating the steam generator blowdown to minimize the radioactive liquid effluent releases, and 2) Monitoring the secondary system in accordance with the Technical Specifications.

A reactor shutdown was initiated on August 18, 1974. During the shutdown, the reactor vendor will examine the "A" steam generator to identify the source of the leakage and make appropriate repairs.

As part of the permanent corrective action, Florida Power & Light Company and the NSSS Vendor are evaluating alternate methods of steam generator water treatment.

F. FAILURE DATA

This occurrence represents the first primary to secondary leak at the Turkey Point Nuclear Units.

Very truly yours,

for A. D. Schmidt
Director of Power Resources

DWR/cpc

cc: Mr. Norman C. Moseley
Jack R. Newman, Esquire