P.O. BOX 3100 MIAMI, FLORIDA 33101

FLORIDA POWER & LIGHT COMPANY

April 19, 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. 250-74-5
APRIL 19, 1974
OCCURRENCE DATE: APRIL 11, 1974
TURKEY POINT UNIT NO. 3
BORON INJECTION TANK BORON
CONCENTRATION BELOW LIMITING CONDITION
FOR OPERATION

A. CONDITIONS PRIOR TO OCCURRENCE

Unit No. 3 reactor was operating at 98% power with normal reactor pressure and temperature.

B. DESCRIPTION OF THE OCCURRENCE

At 11:30 a.m., the routine boron analysis of the Boron Injection Tank contents was completed and the results indicated a boron concentration of 19,900 ppm. This is 100 ppm below the lower Technical Specification limit. Two additional samples were analyzed and they confirmed the low concentration. The boron injection tank contents were then recirculated through the boric acid storage tank to return the boron concentration to a value within the allowable operating limits. A sample taken at 2:30 p.m. showed the concentration to be 21,300 ppm, which is within the allowable limits.

C. CAUSE OF OCCURRENCE

Investigation to determine the exact cause of the dilution has been inconclusive. It is believed that the dilution is related to the performance of the Safety Injection System Periodic Test on the evening prior to the occurrence. When the boron injection tank inlet isolation valves are cycled as part of the

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periodic test, it is possible to create a flow path through the boron injection tank by which dilution water from the refueling water storage tank could enter the system.

D. ANALYSIS OF THE OCCURRENCE

The role of the boron injection tank is to provide a source of negative reactivity to alleviate the consequences of the postulated steam break accident described in the FSAR. The safety analysis is conservative in that credit is only taken for the amount of boron in the boron injection tank itself and no credit is taken for the amount of boron in the safety injection system piping. In addition, the actual rate of boron injection, in the unlikely event of a steam break, would be greater than that utilized in the FSAR because actual safety injection flow rates would be higher than those analyzed in the FSAR. These factors coupled with the very slight amount of dilution that occurred indicate that the consequences of a steam line break would have been within the limits presented in the FSAR. Therefore, this occurrence did not jeopardize reactor safety nor pose any danger to the health and safety of the public.

E. CORRECTIVE ACTION

The immediate corrective action consisted of recirculation of the boron injection tank contents through the boric acid storage tank to return the boron concentration to within the allowable limits. The sampling of the boron injection tank was increased to once per day and continued for five days. The increased sampling revealed no evidence that dilution was occurring. The Safety Injection System Periodic Test procedure has been revised as a result of this occurrence to include precautionary steps to avoid the potential for any dilution caused by performance of the periodic test. The revised procedure requires that isolation valves on the line from the boron injection tank to the boric acid storage tank be closed prior to cycling the boron injection tank inlet isolation valves. This eliminates the flow path from the refueling water storage tank that was previously mentioned. The revised procedure further requires the boron injection tank contents to be sampled and analyzed for boron concentration before and after performance of the periodic test.

F. FAILURE DATA

There was no identification of equipment failure associated with this occurrence.

Very truly yours,

A. D. Schmidt
Director of Power Resources

HNP/kmw

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