

FLORIDA POWER & LIGHT COMPANY

January 6, 1975

Mr. Edson G. Case, Acting Director
Office of Regulation
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Case:

ABNORMAL OCCURRENCE NO. 251-74-9
JANUARY 6, 1975
OCCURRENCE DATE: DECEMBER 27, 1974
TURKEY POINT UNIT NO. 4

FEEDWATER TEMPERATURE RECORDER
INCORRECT CALIBRATION PROCEDURE



A. Conditions Prior to Occurrence

The reactor was in routine, steady-state power operation at an indicated power level of 99.9%.

B. Description of Occurrence

Comparison of the results of a routine secondary system calorimetric calculated by plant personnel with the results of a similar secondary system calorimetric performed by the newly installed Digital Data Processing System revealed that the feedwater temperature reading used by the Digital Data Processing System was about 10 F lower than the feedwater temperature shown on the feedwater temperature recorder. Calculation of the secondary system calorimetric using a lower feedwater temperature results in a higher thermal power level. At an indicated thermal power of 100%, this 10 F error in feedwater temperature results in approximately 101.8% thermal power.

When it was confirmed that the feedwater temperature measured by the Digital Data Processing System was correct, operator action was to reduce thermal power level to 100% thermal power as determined by the Digital Data Processing System calorimetric.

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C. Cause of Occurrence

The use of an incorrect calibration procedure for the feedwater temperature recorder system was the cause of this occurrence.

The feedwater temperature recorder uses a resistance temperature detector (RTD) to measure feedwater temperature. An error of approximately 2.5 ohms was found when the overall resistance of the RTD circuit was measured. Analysis of the error concluded that the additional 2.5 ohms was equal to the resistance of one conductor between the recorder amplifier and the RTD. The effect of this resistance had not been considered in the RTD calibration procedure. Therefore, when the feedwater temperature was calibrated using this procedure, the recorder indicated a feedwater temperature that was approximately 10 F high.

D. Analysis of Occurrence

The incidents analyzed and presented in the Turkey Point Unit Nos. 3 and 4 Final Safety Analysis Report assumed conservative values for instrument calibration error, instrument drift, and calorimetric test error. A value of two percent was assumed for calorimetric test error.

Review, analysis, and evaluation of the operating conditions during the time that the incorrect feedwater temperature recorder calibration procedure caused an error of approximately 10 F in recorded feedwater temperature, concludes the calorimetric test error was approximately 1.8%. This error is within the 2% value assumed in these safety analyses. Therefore, neither reactor safety nor the health and safety of the public were jeopardized by this occurrence.

E. Corrective Action

The procedure for calibrating the feedwater temperature recorder has been revised to include the resistance of the conductor between the temperature sensor and the recorder amplifier. Calibration of the feedwater temperature recorder using the revised calibration procedure will prevent recurrence of this and similar incidents.

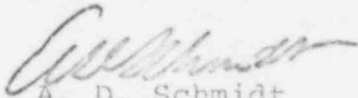
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The calibration of other RTD installations at Turkey Point Unit Nos. 3 and 4 were checked and it was determined that the correct calibration procedures were used.

F. Failure Data

This is the first abnormal occurrence of this type experienced at Turkey Point Plant. However, the feedwater temperature recorder for Unit No. 3 was calibrated using the same procedure used for Unit No. 4 recorder. Therefore, a separate abnormal occurrence report will be issued to cover this incident for Unit No. 3.

Very truly yours,



A. D. Schmidt
Vice President
Power Resources

VTC/cpc

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