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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Edwin I. Hatch Nuclear Plant - Unit 2
Post Accident Monitoring Instrumentation Report
Drywell Temperature Indicator
Inoperable for Greater Than Thirty Days

Ladies and Gentlemen:

In accordance with Unit 2 Technical Specifications Limiting Condition for Operation 3.3.3.1, Required Action B.1, Southern Nuclear Operating Company is submitting this report on post accident monitoring instrumentation.

Should you have any questions in this regard, please contact this office.

Respectfully submitted,

A handwritten signature in cursive script that reads "Lewis Sumner".

H. L. Sumner, Jr.

OCV/eb

Enclosure: Post Accident Monitoring Instrumentation Report

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
NORMS

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. L. N. Olshan, Project Manager - Hatch

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

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Edwin I. Hatch Nuclear Plant Post Accident Monitoring Instrumentation Report Drywell Temperature Indicator Inoperable for Greater Than Thirty Days

A. REQUIREMENT FOR REPORT

This report is required by Unit 2 Technical Specifications Limiting Condition for Operation 3.3.3.1, Required Action B.1. This action must be taken if the plant has less than the required number of operable post accident instrumentation channels for a period greater than 30 days. When 30 days have elapsed, the action requires that a report be submitted to the Nuclear Regulatory Commission within the following 14 days per Unit 2 Technical Specifications section 5.6.6 and 10 CFR 50.4. In this event, a temperature monitoring device required by Unit 2 Technical Specifications Table 3.3.3.1-1, item 10, was inoperable for a period greater than 30 days. Therefore, this report is required.

B. DESCRIPTION

On 01/30/2001 at 1630 EST, Unit 2 was in the Run mode at a power level of 2763 CMWT (100 percent rated thermal power). At that time, licensed Operations personnel declared drywell temperature instrument 2T47-N001A, a resistance thermal device, inoperable. This instrument is one of six temperature instruments required by Unit 2 Technical Specifications Limiting Condition for Operation 3.3.3.1 and Table 3.3.3.1-1, item 10, to be operable while the unit is in Mode 1 or 2. Operations personnel declared this instrument inoperable based upon the results of an assessment of the instrument's qualified life performed by Architect/Engineer personnel.

This assessment, forwarded to plant personnel in a letter dated 12/13/2000, stated that drywell temperature instrument 2T47-N001A would become inoperable on 01/30/2001 because its qualified life would expire on that day. Architect/Engineer personnel determined the instrument's qualified life had decreased from 5.6 years to 322 days because of higher-than-normal temperatures in the area of the drywell in which this instrument is located. The temperatures in this area of the drywell, that is, the 188-foot elevation near the 10-degree azimuth, since the beginning of the current operating cycle (04/2000) had been approximately 30 to 50 degrees Fahrenheit higher than previous operating cycles. The higher-than-normal temperatures caused the instrument's Arrhenius equivalent temperature to increase to approximately 230 degrees Fahrenheit, significantly higher than the Arrhenius equivalent temperature of 180.66 degrees Fahrenheit upon which its 5.6-year qualified life is based. Architect/Engineer personnel calculated a new qualified life of only 322 days based upon the higher Arrhenius equivalent temperature and the resulting increase in the instrument's aging rate. Because the temperature instrument had been replaced prior to the start of the current operating cycle, its shortened qualified life expired on 01/30/2001. Consequently, drywell temperature instrument 2T47-N001A was declared inoperable on 01/30/2001 in accordance with the results of the Architect/Engineer assessment.

With one required instrument channel inoperable, Operations personnel entered Unit 2 Technical Specifications Limiting Condition for Operation 3.3.3.1, Condition A. Required Action A.1 of Condition A requires that the inoperable instrument be restored to an operable status within 30 days. If the instrument can not be restored to an operable status within the specified time, Condition B of Limiting Condition for Operation 3.3.3.1 must be entered. On 03/01/2001 at 1630 EST, drywell temperature instrument 2T47-N001A remained inoperable because it could not be accessed to allow replacement. Therefore, Condition B was entered and Required Action B.1 was taken, resulting in this report.

C. CAUSE OF EVENT

The direct cause of this event is higher-than-normal temperatures in the vicinity of drywell temperature instrument 2T47-N001A. The higher-than-normal temperatures experienced by this instrument since the beginning of the current operating cycle in April 2000 have resulted in a decrease of its qualified life to less than one operating cycle. The cause of the higher-than-normal temperatures in the area of the drywell in which this instrument is located cannot be determined at this time because the unit is in power operation, making entry into the drywell impossible. However, it is believed that the high temperatures are not the result of a steam leak inside the drywell. No other instruments are showing a similar elevated temperature and there has been no increase in unidentified leakage in the drywell floor drain sump.

D. PLANT RESPONSE TO THIS EVENT

1. Preplanned Alternate Methods: Drywell temperature instrument 2T47-N001A has only one automatic function associated with it: input to an annunciator for high temperature. This function also is performed by other drywell temperature instruments, including five qualified post accident monitoring instruments similar to instrument 2T47-N001A, one of which is located at the same drywell elevation. These instruments provide input to a high temperature annunciator and will be used to detect high temperature in the drywell should it occur.

The inoperable drywell temperature instrument also is used for predicting reactor water level instrument error in post accident conditions and detecting a loss of drywell cooling. Plant procedure 34AB-B21-002-2S, "RPV Water Level Corrections," uses groups of temperature instruments located in approximately the same areas and/or elevations of the drywell to provide ambient temperature data for correcting water level instrument readings. Instrument 2T47-N001A is only one of five instruments in two groups used to provide temperature data to correct the reading of water level instrument 2B21-R610. Because there are four operable instruments to provide temperature correction data, Architect/Engineer personnel concluded in a letter dated 02/08/2001 that no substitution for temperature instrument 2T47-N001A was necessary due to the redundancy already existing in the procedure. Therefore, procedure 34AB-B21-002-2S was revised on 01/30/2001 to indicate that temperature instrument 2T47-N001A was inoperable and that water level instrument corrections should be based on the readings of the four operable temperature instruments.

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Plant procedure 34AB-T47-001-2S, "Complete Loss of Drywell Cooling," uses four temperature indicators, 2T47-N001A, 2T47-N001K, 2T47-N002, and 2T47-N010, in responding to a loss of cooling in the drywell. Using historical data, Architect/Engineer determined that adding 41.1 degrees Fahrenheit to the reading of instrument 2T47-N002 resulted in a temperature reading about the same as that indicated by instrument 2T47-N001A. Therefore, they concluded that the reading of instrument 2T47-N002 plus 41.1 degrees Fahrenheit could be substituted for the reading of inoperable instrument 2T47-N001A. Consequently, plant personnel revised procedure 34AB-T47-001-2S on 02/16/2001 to require that 41.1 degrees Fahrenheit be added to the reading from instrument 2T47-N002 and this result substituted for the reading from instrument 2T47-N001A when responding to a loss of drywell cooling.

2. Schedule for Restoring Instrumentation to Operable Status: Drywell temperature instrument 2T47-N001A will be replaced during the next Unit 2 refueling outage, currently scheduled to begin in September 2001, per Maintenance Work Order 2-01-0049. The area around this instrument will be inspected during the same outage to determine and correct the reason for the higher-than-normal temperatures. This latter action is being tracked via the Plant Hatch Corrective Action Program under Significant Occurrence Report CO0004268 and Action Item 2000200409.