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FROM <u>Carolina Power &amp; Light Co.</u> <u>Raleigh, N.C.</u> <u>E.E.Utley</u>		DATE OF DOC <u>8-4-75</u>	DATE REC'D <u>8-18-75</u>	LTR <u>XXX</u>	TWX	RPT	OTHER
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**DESCRIPTION:**

Letter trans the following.....

**ENCLOSURES:**

Abnormal Occurance #75-11 on 5-27-75,  
Concerning the failure to comply with  
Operating Procedure of Hydrogen Concentration  
when reactor is at power.....

(1 Copy Enclosure Received)

PLANT NAME: H. B. Robinson #2

**FOR ACTION/INFORMATION**

SAB 8-19-75

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*J.D.F.*



Carolina Power & Light Company

August 4, 1975

Regulatory

File Cy.

File: NG-3513 (R)

Serial: NG-75-1212

**50-261**

Mr. Norman C. Moseley, Director  
U. S. Nuclear Regulatory Commission  
Region II, Suite 818  
230 Peachtree Street, N.W.  
Atlanta, Georgia 30303

Dear Mr. Moseley:

H. B. ROBINSON UNIT NO. 2

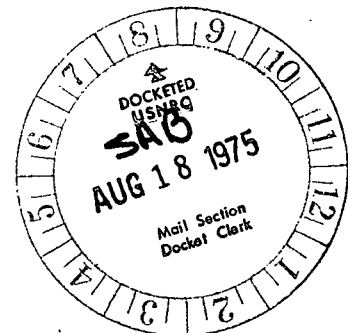
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REACTOR COOLANT SYSTEM OXYGEN CONCENTRATION VIOLATION

Submitted for your information is a revised Abnormal Occurrence Report regarding Occurrence 50-261/75-11 as requested by the Robinson inspector. This revision clarifies the event and addresses the corrective actions taken in more detail.

Yours very truly,

E. E. Utley  
Vice-President  
Bulk Power Supply



DBW:bn

Attachment

cc: Messrs. N. B. Bessac  
P. W. Howe  
J. A. Jones  
R. E. Jones  
W. B. Kincaid  
D. Knuth  
J. B. McGirt  
D. B. Waters

8784

## ABNORMAL OCCURRENCE REPORT

1. Report No. 50-261/75-11 (Revision 1)
- 2a. Report Date August 4, 1975
- 2b. Occurrence Date May 27, 1975
3. Facility H. B. Robinson Unit No. 2  
Hartsville, South Carolina 29550

4. Identification of Occurrence

On May 27, 1975, the Reactor Coolant System (RCS) oxygen concentration was found to be 0.16 ppm. The oxygen concentration is required to be 0.1 ppm or less when the reactor coolant temperature exceeds 250°F. This constitutes an Abnormal Occurrence as defined in facility Technical Specifications, Paragraph 1.8.b (Limiting Conditions for Operation). The limiting condition is established in Paragraph 3.1.6.1 of the Technical Specification. Events leading to this condition involved violation of administrative procedures regarding RCS hydrogen concentration.

5. Conditions Prior to Occurrence

The reactor was operating at 33% power following a maintenance outage. Dilution of RCS to hot shutdown boron concentration was completed at 0028 hours, May 27, 1975. Criticality was obtained at 0222 hours, and the unit synchronized at 0457 hours. Power was then increased to 33%.

6. Description of Occurrence

At 0930 on May 27, 1975, an analysis of the RCS revealed the oxygen concentration to be 0.16 ppm. This constituted a violation of Technical Specification 3.1.6.1 which limits RCS oxygen to 0.1 ppm when the reactor is above 250°F. Prior to this time, at 0645 and 0910 hours on May 27, 1975, hydrogen concentration was determined to be 5.5 and 9.0 cc/kg, respectively. This constitutes a failure to comply with an Operating Procedure, OP-32, Section A.3.5, which requires hydrogen concentration to be maintained at 15 cc/kg or greater when the reactor is at power.

7. Designation of Apparent Cause of Occurrence

To scavenge oxygen from the RCS a minimum of 15 cc/kg is required. At 0645 hours the hydrogen concentration was found to be 5 cc/kg. The volume control tank (VCT) was vented to increase hydrogen purity and hydrogen pressure was increased. At 0910 hours RCS hydrogen concentration was found to be 9 cc/kg. Prior to this time the hydrogen concentration was sampled at 1535 hours on May 26, 1975, and found to be 3.0 cc/kg.

This was prior to going to power operation, and no hydrogen specifications applied at that time. However, the plant was brought critical at 0222 hours on May 27, 1975, and no hydrogen sample was performed until 0645. The plant was thus at power for some four hours without the hydrogen concentration being verified.

The RCS oxygen concentration was not analyzed until 0930 hours on May 27, 1975, at which time it was found to be 0.16 ppm. The oxygen concentration had not previously been sampled since 2230 hours on May 25, 1975, prior to plant heatup. The concentration at that time was 0.015 ppm. Oxygen was not sampled on May 26, 1975, due to this day being a holiday. In fact, Technical Specification Table 4.1-2 only requires oxygen to be sampled 5 days per week with a maximum time of 3 days between tests. This requirement was met.

The inattention to hydrogen concentration and the fact that it was below administrative limits combined with dilution of the RCS to hot shutdown boron concentration and subsequent power ascension dilution resulted in the oxygen concentration above limits. Failure to maintain the proper hydrogen concentration, in this case, constitutes an inadequacy in the implementation of procedural controls which threatens to cause the existence or development of an unsafe condition in the operation of the plant. This situation is addressed in Technical Specifications, Paragraph 1.8.g, and subsequently the condition resulted in violation of a limiting condition for operation.

#### 8. Analysis of Occurrence

Upon determination that the RCS oxygen was above specifications, the VCT was vented several times. Oxygen concentration was brought back into specification within the 24-hour limit, and therefore, power operation continued. Technical Specification, Paragraph 3.1.6.3 provides for corrective action to be taken within 24 hours of the event. When this limit expires, the plant is to be placed in cold shutdown. As noted above, remedial action corrected the concentration within this time limit.

No personnel injuries, undue exposure, releases of radioactive materials, or threat to the public health and safety resulted from this occurrence.

#### 9. Corrective Action

To provide immediate corrective action the VCT was vented several times resulting in a higher concentration of hydrogen. At 1115 hours analysis indicated RCS oxygen to be 0.0 ppm.

Corrective action to prevent a recurrence consists of re-emphasizing to plant operations personnel the plant coolant chemistry procedures and the importance of maintaining administrative limits as well as Technical Specification limits. Additionally, a check off step shall be added to

Overall Plant Operating Procedure GP-1A to assure that oxygen and hydrogen concentrations are within specifications after dilution to hot shutdown boron concentration and prior to criticality. A procedure change shall also be issued to require sampling of oxygen anytime the hydrogen concentration falls below 10 cc/kg. These steps will assure that close controls are maintained regarding oxygen and hydrogen limits and should prevent a recurrence.

10. Failure Data

No previous incident has occurred involving the reactor coolant chemistry out of specification.