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 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400  
 50-401 Shearon Harris Nuclear Power Plant, Unit 2, Carolina 05000401

AUTH. NAME AUTHOR AFFILIATION  
 MCOUFFIE, M.A. Carolina Power & Light Co.  
 RECIPIENT NAME RECIPIENT AFFILIATION  
 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Responds to Containment Sys Branch draft SER Open Item 68.  
 Addl failure alarm located within control room unnecessary.  
 Continuous indication will be functioning within 30 minutes  
 of safety injection initiation per TMI Item IFF.1.

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| INTERNAL: ELD/HDS1     | 1 0             | IE FILE                | 1 1             |
| IE/DEPER/EPB 36        | 3 3             | IE/DEPER/IRB 35        | 1 1             |
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| NRR/DSI/AEB 26         | 1 1             | NRR/DSI/ASB            | 1 1             |
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| NRR/DSI/RSB 23         | 1 1             | <u>REG FILE</u> 04     | 1 1             |
| RG2                    | 3 3             | RM/DDAMI/MIB           | 1 0             |

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FEDERAL BUREAU OF INVESTIGATION  
 DEPARTMENT OF JUSTICE  
 WASHINGTON, D. C. 20535

MEMORANDUM FOR THE DIRECTOR  
 FROM: SAC, [illegible]  
 SUBJECT: [illegible]

[The following text is mirrored and largely illegible due to the quality of the scan.]

| DATE     | TIME  | LOCATION  | PERSONS       | REMARKS     |
|----------|-------|-----------|---------------|-------------|
| 11/15/68 | 10:00 | Room 1010 | John Doe      | Interviewed |
| 11/15/68 | 11:00 | Room 1010 | Jane Smith    | Interviewed |
| 11/15/68 | 12:00 | Room 1010 | Bob Johnson   | Interviewed |
| 11/15/68 | 13:00 | Room 1010 | Alice Brown   | Interviewed |
| 11/15/68 | 14:00 | Room 1010 | Charlie White | Interviewed |
| 11/15/68 | 15:00 | Room 1010 | Diana Green   | Interviewed |
| 11/15/68 | 16:00 | Room 1010 | Frank Black   | Interviewed |
| 11/15/68 | 17:00 | Room 1010 | Grace King    | Interviewed |
| 11/15/68 | 18:00 | Room 1010 | Henry Lee     | Interviewed |
| 11/15/68 | 19:00 | Room 1010 | Irene Hill    | Interviewed |
| 11/15/68 | 20:00 | Room 1010 | Jack Scott    | Interviewed |
| 11/15/68 | 21:00 | Room 1010 | Karen Adams   | Interviewed |
| 11/15/68 | 22:00 | Room 1010 | Larry Baker   | Interviewed |
| 11/15/68 | 23:00 | Room 1010 | Mary Clark    | Interviewed |
| 11/15/68 | 00:00 | Room 1010 | Noel Evans    | Interviewed |
| 11/15/68 | 01:00 | Room 1010 | Oscar Foster  | Interviewed |
| 11/15/68 | 02:00 | Room 1010 | Peter Gibson  | Interviewed |
| 11/15/68 | 03:00 | Room 1010 | Quinn Hall    | Interviewed |
| 11/15/68 | 04:00 | Room 1010 | Rachel King   | Interviewed |
| 11/15/68 | 05:00 | Room 1010 | Samuel Lee    | Interviewed |
| 11/15/68 | 06:00 | Room 1010 | Tina Miller   | Interviewed |
| 11/15/68 | 07:00 | Room 1010 | Victor King   | Interviewed |
| 11/15/68 | 08:00 | Room 1010 | Wendy Lee     | Interviewed |
| 11/15/68 | 09:00 | Room 1010 | Xavier King   | Interviewed |
| 11/15/68 | 10:00 | Room 1010 | Yvonne King   | Interviewed |
| 11/15/68 | 11:00 | Room 1010 | Zoe King      | Interviewed |



SERIAL: LAP 83-250

Carolina Power & Light Company

JUL 01 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
United States Nuclear Regulatory Commission  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT  
UNIT NOS. 1 AND 2  
DOCKET NOS. 50-400 AND 50-401  
DRAFT SAFETY EVALUATION REPORT RESPONSES  
CONTAINMENT SYSTEMS BRANCH

Dear Mr. Denton:

Carolina Power & Light Company hereby transmits one original and forty copies of the response to the Shearon Harris Nuclear Power Plant Draft Safety Evaluation Report (DSEER) Open Item 68.

Carolina Power & Light Company will be providing responses to other Open Items in the DSEER shortly.

Yours very truly,

M. A. McDuffie  
Senior Vice President  
Engineering & Construction

PS/ccc (6729PSA)  
Attachment

cc: Mr. Yun-Seng Huang (NRC-CSB)  
Mr. N. Prasad Kadambi (NRC)  
Mr. G. F. Maxwell (NRC-SHNPP)  
Mr. J. P. O'Reilly (NRC-RII)  
Mr. Travis Payne (KUDZU)  
Mr. Daniel F. Read (CHANGE/ELP)  
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Mr. Wells Eddleman  
Dr. Phyllis Lotchin  
Mr. John D. Runkle  
Dr. Richard D. Wilson  
Mr. G. O. Bright (ASLB)  
Dr. J. H. Carpenter (ASLB)  
Mr. J. L. Kelley (ASLB)

8307060095 830701  
PDR ADCK 05000400  
E PDR

*Boo!*  
*1/1*

JUL 10 1961

[Faint, mostly illegible text, possibly a letter or report, with some words like "Dear Sir" and "Yours faithfully" visible.]

Shearon Harris Nuclear Power Plant (SHNPP)  
Draft Safety Evaluation Report (DSER)  
Containment Systems Branch  
Open Item 68 (DSER Section 6.2.5, pages 6-27 and 6-30)

Two redundant, independent, full capacity electric (thermal) hydrogen recombiners are permanently located inside containment to control the containment hydrogen concentration. The hydrogen recombiners are designed to seismic Category I and Safety Class 2 standards and are powered from separate safeguard buses. No single active failure, coincident with the loss of offsite power, will prevent the hydrogen recombiners from performing their intended design function. When required, the hydrogen recombiners are manually actuated from the hydrogen recombiner control panels, which are located in an area within the control room environmental envelope adjacent to the main control room. Because the hydrogen recombiner control panels are not located in the main control room, it is the staff's position that a hydrogen recombiner failure alarm should be provided in the main control room.

#### Response

The Applicant does not believe that an additional failure alarm located within the control room is necessary. The operation of each hydrogen recombiner is manually controlled from the panel located within the control room envelope and is therefore readily accessible following a postulated accident. All hydrogen recombiner supervisory instrumentation including trouble alarms are located in the panels.

Operating procedures require that both of the redundant recombiners be started when hydrogen concentrations reaches 3 volume percent following a postulated accident. Since only one of the two recombiners is required to perform the system's safety function the operators may then selectively remove one recombiner from operation. If one recombiner is selected to be removed from operation, the operator will base the selection upon the concentration of hydrogen in various locations in the containment and upon the performance characteristics of the recombiner.

Per the requirements of NUREG-0737 Item II.F.1., continuous indication and recording of hydrogen concentration will be functioning within 30 minutes of safety injection initiation. The continuous indication and recording of hydrogen concentration will be monitored on the hydrogen analyzer remote control panel located in the main control room envelope. The hydrogen analyzer alarm, located on the main control board, annunciates and is set at a 3 percent by volume hydrogen level concentration.

Post loss-of-coolant accident (LOCA) hydrogen accumulation at 3 percent occurs approximately 7 days after an accident as shown in Final Safety Analysis Report (FSAR) Figure 6.2.5-6. FSAR Section 6.2.5 indicates that the recombiners will be manually started when the hydrogen concentration in the containment atmosphere, as monitored by the hydrogen concentration in the containment atmosphere, as monitored by the hydrogen analyzer system, reaches 3 volume percent.

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated processes. The goal is to ensure that the information is both reliable and up-to-date.

The third part of the report focuses on the results of the analysis. It shows a clear trend of growth over the period studied. This is supported by several key indicators and statistical data points.

Finally, the document concludes with a series of recommendations for future actions. These are based on the findings of the analysis and are designed to help the organization continue to improve its performance.

Open Item 68 Response (Continued)

This very conservative assumption was made in order to demonstrate that once a 3 volume percent concentration is reached either one of the two 100 percent capacity recombiners is sufficient to maintain containment hydrogen concentration beneath the 4 volume percent flammability limit.

Following a LOCA the control room operators will monitor the performance of the recombiners and other back panels at specific intervals (e.g., every hour). Since the recombiners will be placed in operation before the containment hydrogen concentration ever approaches 4 volume percent and since the recombiner operation will be monitored periodically, the main control board high-hydrogen alarm, in addition to the back panel indication and recording described in FSAR Section 6.2.5.2.3 "Containment Hydrogen Monitoring System," will provide adequate control for the safe operation of the hydrogen recombiners. Ample time is available for remedial operator action to compensate for degraded recombiner performance. FSAR Sections 6.2.5.2.1, 6.2.5.2.3 and 7.3.1.4.1 will be revised to reflect this change.

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