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J. T. Beckham, Jr.
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Georgia Power

THE SOUTHERN POWER SYSTEM

HL-1682
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June 14, 1991

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

PLANT HATCH - UNIT 1
NRC DOCKET 50-321
OPERATING LICENSE DPR-57
SPECIAL REPORT 1-91-005
FIRE BARRIER ASSEMBLIES INOPERABLE
FOR A PERIOD LONGER THAN 14 DAYS

Gentlemen:

In accordance with Plant Hatch Unit 1 Technical Specifications section 6.9.2 and Appendix B of the Fire Hazards Analysis, Georgia Power Company is submitting the enclosed Special Report concerning fire barrier assemblies which were inoperable for a period greater than 14 days.

Sincerely,

J. T. Beckham, Jr.

OCV/cr

Enclosure: Special Report 1-91-005

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebnetter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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ENCLOSURE
PLANT HATCH - UNIT 1
NRC DOCKETS 50-321
OPERATING LICENSE DPR-57
SPECIAL REPORT 1-91-005
FIRE BARRIER ASSEMBLIES INOPERABLE FOR LONGER
THAN 14 DAYS RESULTS IN A SPECIAL REPORT
AS REQUIRED BY THE FIRE HAZARDS ANALYSIS

A. REQUIREMENT FOR REPORT

This report is required by Unit 1 Technical Specifications section 6.9.2 which states that Special Reports shall be submitted as required by the Fire Hazards Analysis (FHA) and its Appendix B requirements.

Appendix B of the FHA, section 1.1.1 states that fire-rated assemblies and sealing devices in fire-rated assembly penetrations separating fire areas must be operable. Action statement (b) requires that inoperable fire-rated assembly(s) and/or sealing device(s) must be restored to operable status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days per Technical Specifications section 6.9.2. In the event described in this report, a cable penetration seal was found to be inoperable. Investigations showed that this condition had existed for longer than 14 days; therefore, this Special Report is required.

B. UNIT STATUS AT TIME OF EVENT

On 5/15/91, at 0900 CDT, Unit 1 was in the Run mode at a power level of 2436 CMWT (100 percent of rated thermal power).

C. DESCRIPTION OF EVENT

On 5/15/91, at approximately 0900 CDT, nonlicensed personnel reviewing Design Change Request (DCR) 84-217 determined that cable penetration seal 1T54-22A12 was inoperable. Specifically, the cable penetration seal assembly, known as a Nelson frame, was not installed in accordance with the manufacturer's instructions. The penetrations are sealed with Nelson blocks, mechanical devices which slip over the cables and seal the penetration. In place of four of thirty-five Nelson blocks, a silicone sealant known as RTV-106 was used in approximately a 0.4 square foot area of the penetration. Even though the RTV-106 has fire resistive characteristics, the material has not been tested as a substitute for the Nelson blocks in the seal assembly. Consequently, the three-hour fire rating of the penetration seal assembly was jeopardized.

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ENCLOSURE (Continued)

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Investigations into the event revealed that a walkdown of Nelson frame penetration seal assemblies had been performed in November of 1983 at which time deviations regarding the installation of Nelson frame penetration seal assemblies were identified. At that time, appropriate compensatory actions were taken in accordance with the plant's Technical Specifications. These deviations were noted by the Commission during an inspection in August of 1984 and addressed in Report 50-321, 306/84-32, dated 9/17/84. One of the deviations noted in the 1983 walkdown involved the improper use of silicone in the Nelson frame for penetration 1T54-Z2A12. DCR 84-217 was developed to address the noted discrepancies including that associated with penetration 1T54-Z2A12. The DCR was implemented during the Fall 1984 Unit 1 Refueling outage. During implementation of the DCR, it was determined that a permanent repair to penetration 1T54-Z2A12 seal assembly could not be completed by the end of the outage. The number of cables being routed through the penetration was more than the Nelson assembly could accommodate using the Nelson insert blocks. Four of the thirty-five Nelson blocks could not be properly installed without one of the cables being removed and rerouted through another penetration. Consequently, a temporary resolution was incorrectly approved and implemented. The Nelson frame was reassembled and RTV-106 was used to provide a fire barrier around five of the cables routed through the penetration. The RTV was used to fill an area of approximately 0.4 square feet. A permanent repair was planned for the following Unit 1 Refueling outage; however, actions were not taken to ensure the change was implemented.

Upon discovery of the condition on 5/15/91, Deficiency Card (DC) 1-91-2262 was written and licensed personnel were notified. Subsequently, an hourly fire watch was established for the affected areas in accordance with the requirements of FHA, Appendix B, section 1.1.1.

D. CAUSE OF EVENT

The cause of the event was cognitive personnel error on the part of nonlicensed personnel in that they failed to adequately evaluate the temporary repair to penetration 1T54-Z2A12 seal to ensure that the three-hour fire rating of the seal was not jeopardized. Specifically, per the manufacturer's instructions, RTV-106 is recommended for use as a sealant between Nelson blocks and cable conduit with irregular

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surfaces. It is apparent that the involved engineering personnel concluded from this that it was acceptable to use RTV-106 as a fire barrier material in place of the Nelson blocks. Consequently, the involved personnel did not perform an adequate evaluation to ensure that RTV-106 itself actually had a three-hour fire rating.

E. ANALYSIS OF EVENT

Fire-rated cable penetration seal assemblies are designed to prevent the propagation of a fire from one fire area to another. In the event described in this report, a fire-rated penetration assembly was rendered inoperable because it was assembled in an untested configuration. When this condition was discovered, licensed shift personnel implemented the compensatory actions of FHA, Appendix B, section 1.1.1, which requires verification that the applicable fire detection equipment was operable and the establishment of an hourly fire watch.

This fire-rated assembly is located on the west wall of the Unit 1 Reactor Building, and separates the Reactor Building (fire area 1104) from the east cableway (fire area 1205F) of the Unit 1 Turbine Building. Both fire areas are equipped with fire detection and suppression systems. Fire area 1205F is equipped with both linear thermal detectors and smoke detectors, and fire area 1104 is equipped with smoke detectors. Both fire areas are equipped with wet pipe automatic fire suppression systems, water hoses, and portable carbon dioxide fire extinguishers. In the unlikely event of a fire in either of these areas, it would be promptly detected and subsequently extinguished by the automatic fire suppression systems and/or the site's trained fire brigade.

Based on the above analysis, it is concluded that this event had no adverse affect on nuclear safety.

F. CORRECTIVE ACTIONS

- 1) The affected penetration was declared inoperable and the required hourly fire watch for the appropriate fire area was initiated.

ENCLOSURE (Continued)

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- 2) The affected penetration has been covered with a thermolag fire barrier material in accordance with approved plant procedures. The material provides a three-hour fire rated barrier for the penetration.
- 3) The Nelson frame seal assembly for the affected penetration will be restored in conformance with the manufacturer's instructions which will restore its three-hour fire rating. This will be performed during the next Unit 1 refueling outage. At that time, the thermolag fire wrap will be removed. This action is currently scheduled to be completed by 12/10/91.
- 4) GPC will review the Nelson frame seal assemblies modified during implementation of DCR 84-217, and will submit a revision to this special report if further problems are identified. This action is currently scheduled to be completed by 12/10/91.

No disciplinary action will be taken within Georgia Power Company because the engineer responsible for approving the temporary repair is no longer employed by the Company. Current administrative controls governing the design change process and the fire protection program should be sufficient to help preclude a recurrence of this event.