



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640 JACKSON, MISSISSIPPI 39205

J. B. RICHARD
SENIOR VICE PRESIDENT - NUCLEAR

August 3, 1984

U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket No. 50-416/417
License No. NPF-13
File 0260/15525/15526/16694.4
PRD-84/10, Final Report for
Units 1 and 2, G. H. Bettis
Valve Actuator EPR Seals
Swelling
AECM-84/0405

On July 30, 1984, Mississippi Power & Light Company notified Mr. Bob Carroll, of your office, of a Reportable Deficiency at the Grand Gulf Nuclear Station (GGNS). The deficiency concerns the possible swelling of G. H. Bettis valve actuator Ethylene Propylene Rubber (EPR) elastomer seals which have come in contact with hydrocarbon lubricant (Mobilgrease 28).

This deficiency was determined to be reportable under the provisions of 10CFR21 for Unit 1 and 10CFR50.55(e) for Unit 2. Mr. Bob Carroll was notified on August 3, 1984, of the Unit 2 reportability.

Attached is our Final Report.

Yours truly

J. B. Richard

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ATTACHMENT

cc: See page 2

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Mr. J. P. O'Reilly
NRC

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U. S. Nuclear Regulatory Commission
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Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

FINAL REPORT FOR PRD 84/10

1. Name and address of the individual ... informing the commission:

J. B. Richard
Senior Vice-President, Nuclear
P.O. Box 1640
Jackson, Mississippi 39205

2. Identification of the facility ... which ... contains a deficiency:

Grand Gulf Nuclear Station (GGNS) Units 1 and 2
Port Gibson, Mississippi 39150

This deficiency is reportable under the provisions of 10CFR21 for Unit 1 and 10CFR50.55(e) for Unit 2.

3. Identification of the firm ... supplying the basic component which ... contains a deficiency:

Valve actuators were manufactured by G. H. Bettis and installed on the valves by the Henry Pratt Co. The valves were supplied to MP&L by Bechtel Power Corporation, Gaithersburg, MD.

4. Nature of the deficiency ... and the safety hazard which ... could be created by such a deficiency ...:

A. Description of the Deficiency

GGNS Unit 1 has Bettis actuators which utilize the Ethylene Propylene Rubber (EPR) elastomer seals in contact with Mobilgrease 28. G. H. Bettis has determined that Mobilgrease 28 interacts with EPR elastomer seals causing the seals to swell; thus, increasing stroke times on certain isolation valves which could exceed Technical Specification limits.

G. H. Bettis recommends replacement of the seals and use of Molykote 44 lubricant. Valves that are not reworked with Molykote 44 and are not experiencing closing time difficulties are to be stroked every 15 days while monitoring initial stroke times.

None of the affected valves at GGNS have exceeded their maximum stroke time as a result of swollen EPR elastomer seals. However, Mobilgrease 28 is used with EPR elastomer seals at GGNS. Thus, the potential for this deficiency exists at GGNS Unit 1.

B. Analysis of Safety Implications

The affected valves are used for: (1) containment isolation and purge, (2) control room isolation; and (3) drywell isolation and vacuum relief.

Per the FSAR, the containment isolation valve closure times were established by determining the isolation requirements necessary to keep radiological effects from exceeding the guideline values established in 10CFR100. Valve stroke time surveillance periods at GGNS were 3 months for all valves in question, except the control room isolation valves which had a valve stroke time surveillance period of 18 months. Exceeding the valve stroke times could provide an open path from containment to the environment. This could result in a failure of containment isolation for a period of time until the valve closes.

Therefore, the potential existed for radiation leakage in excess of the guidelines established by 10CFR100.

5. The date on which the information of such deficiency ... was obtained.

Mississippi Power & Light received information of the deficiency on January 17, 1984. An evaluation to determine substantial safety hazard was completed, and Mr. Bob Carroll, of your office, was notified on July 30, 1984, concerning 10CFR21 reportability on Unit 1. Mr. Carroll was notified on August 3, 1984, concerning 10CFR50.55(e) reportability on Unit 2. The MP&L "Responsible Officer", Mr. J. B. Richard, will be notified when he returns to his office.

6. In the case of the basic component ... the number and location of all such components.

There are 17 Henry Pratt valves with G. H. Bettis actuators at GGNS Unit 1 which utilize the EPR elastomers and the Mobilgrease 28 where stroke times could exceed Technical Specification limits.

As MP&L did not supply the component, we are not aware of locations other than GGNS.

7. The corrective action which has been taken ... the name of the individual ... responsible for the action; and the length of time that has been ... taken to complete the action.

A. Corrective Actions Taken

1) Interim Actions for Unit 1

Affected valves will be stroked every 15 days per a temporary directive procedure which was issued April 9, 1984. Per MNCR 00508-84 (written to track the deficiency) valves that exceed their maximum allowable stroke time will be serviced by installing new seals and relubricating with Mobilgrease 28.

2) Final Actions for Unit 1

Upon qualification of Dow Corning Molykote 44 or substitute lubricant, all of the affected valves will be scheduled for replacement of seals and lubrication with the new grease during the first refueling outage.

3) Actions for Unit 2

Our Architect/Engineer has repositioned a nonconformance document (previously issued as a result of PRD-81/44 concerning environmental qualification of actuators) to delete the reference to Mobilgrease 28 as the replacement lubricant. Our Architect/Engineer's nonconformance document will track the replacement of the Bettis actuators with qualified seals and lubricant.

B. Responsible Individual

J. B. Richard
Senior Vice President, Nuclear
Grand Gulf Nuclear Station
Mississippi Power & Light Company

C. Length of Time to Complete Actions

Permanent corrective actions for Unit 1 will be completed during the first refueling outage.

Unit 2 corrective actions will be completed prior to Unit 2 fuel load.

8. Any advice related to the deficiency ... that has been, is being, or will be given to purchasers or licensees:

As the deficiency did not originate with MP&L, we have no advice to offer.