



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

JAMES P. McGAUGHY, JR.
ASSISTANT VICE PRESIDENT

82 MAY 14
May 6, 1982 4:50

Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416/417
File 0260/15525/15526
PRD-82/18, Final Report,
Sample Probe - Recirculation
Loop Piping
AECM-82/201

On April 6, 1982, Mississippi Power & Light Company notified Mr. Ross Butcher, of your office, of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns a sample probe located on the recirculation loop "A" discharge riser spool which was broken off and found in the reactor vessel bottom head area. MP&L has determined that this deficiency is reportable under the provisions of 10CFR50.55(e) and 10CFR21.

On May 3, 1982, MP&L notified Mr. Floyd Cantrell, of your office, of the applicability of Part 21 and confirmed that the time requirements for the 10CFR50.55(e) written report would apply to the Part 21 report. Our Final Report is attached.

Yours truly,

J. P. McGaughy, Jr.
For J. P. McGaughy, Jr.

ACP:dr
ATTACHMENT

cc: See page 2

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Member Middle South Utilities System

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Mr. J. P. O'Reilly
NRC

AECM-82/201
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cc: Mr. N. L. Stampley
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

FINAL REPORT FOR PRD-82/18

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

J. P. McGaughy, Jr.
Assistant Vice-President, Nuclear Production
P.O. Box 1640
Jackson, Mississippi 39205

Notification of Part 21 applicability made to Mr. J. P. O'Reilly, NRC, Region II by letter AECM-82/201, May 6, 1982.

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

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

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

Supplied to Grand Gulf by General Electric Company, San Jose, California.

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

A. Description of the Deficiency

During an inspection of the reactor pressure vessel (RPV) bottom head for loose parts, and prior to the installation of the access cover, a broken section of the sample probe from recirculation loop "A" was found in the RPV bottom head. The sample probe when originally installed in the loop A discharge riser spool consisted of a 20 inch section of 3/4 inch stainless steel, double extra strong seamless pipe. The broken section is approximately 11 to 11 1/2 inches long and passed through several 90° elbows and a jet pump to reach the bottom head area of the RPV.

B. Analysis of Safety Implications

It is postulated that the broken section of the sample probe, if carried into the core support plate area, could have restricted coolant flow through a fuel support piece nozzle orifice and could have adversely affected thermal safety margins during operation of the nuclear plant at some time throughout the life time of the power plant.

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

Mississippi Power and Light received information of the deficiency on April 6, 1982. The deficiency was reported to Mr. R. Butcher, of your office as a Potentially Reportable Deficiency on that date. An evaluation for Part 21 has been completed and the MP&L "Responsible Officer," Mr. J. P. McGaughy, Jr., will be notified when he returns to his office.

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

We do not have knowledge of the location of defective equipment located other than at 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

General Electric has performed an engineering and metallurgical evaluation of the broken sample probe. The cause of the failure was determined to be high cycle fatigue due to flow induced vibration.

A direct visual re-inspection of the reactor vessel lower head area was performed for loose parts, damage to loop "A" jet pumps from below the shroud support plate, impact marks on the bottom head below the loop "A" jet pump diffusers and impact marks on control rod drive (CRD) housings and guide tubes in the area adjacent to the loop "A" jet pumps discharge. This re-inspection revealed no damaged or loose parts.

The sample probe for Unit 1 is being replaced with a modified sample probe. Hydrodynamic and stress analyses were performed by GE on the new replacement probe and the new configuration was found to be acceptable.

The sample probe for Unit 2 will be modified to the upgraded design or replaced with a probe of the modified design.

B. Responsible Individual

C. K. McCoy
Nuclear Plant Manager
Mississippi Power and Light Company

C. Length of Time to Complete Actions

Corrective actions for Unit 1 were completed on April 23, 1982. The corrective actions for Unit 2 will be completed prior to fuel load for Unit 2.

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.