

November 22, 1985

Docket No. 50-416

Mr. Jackson B. Richard
Senior Vice President, Nuclear
Mississippi Power & Light Company
Post Office Box 23054
Jackson, Mississippi 39205

Dear Mr. Richard:

Subject: Grand Gulf Unit 1 - Request for License Amendment to Defer
Turbine Disc Inspection

By letter dated November 1, 1985, Mississippi Power & Light Company (MP&L) requested an amendment to License Condition 2.C.(26). The letter attached a discussion, justification, and significant hazards consideration. The proposed license amendment would extend the inspection interval for low pressure main steam turbine discs from one fuel cycle to four fuel cycles (up to 50,000 hours).

The November 1, 1985 application for license amendment is deficient in that it does not provide an analysis as required by 10 CFR 50.91(a)(1) using the three standards of 10 CFR 50.92. The no significant hazards consideration provided simply repeats the three standards and states, as a reason for these findings, that the turbine design and turbine disc cracking and failure producing missiles was considered in the FSAR. The application is also deficient in that an alternate inspection schedule has not been proposed as required in License Condition 2.C.(26). This license condition required inspection of low pressure turbine discs during each refueling outage until the potential for turbine disc cracking has been assessed and an acceptable alternate inspection schedule has been established.

Provide an analysis to support a finding of no significant hazards consideration. The analysis should consider the increase in probability of an accident caused by operation between inspections four times as long (four fuel cycles versus one fuel cycle). Similarly, the analysis should consider the effect on the other two standards of 10 CFR 50.92 of operating four fuel cycles without inspection of the low pressure turbine discs. Provide a proposed change to Technical Specification Section 6.0 "Administrative Controls" to identify a maintenance and inspection program which is mutually acceptable to MP&L and the turbine vendor. Provide also additional information as requested in the enclosure. Supplement the justification by providing a description of the work involved in the inspection if performed during the first refueling outage and the impact on the other work planned for the outage.

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~~Docket No. 50-416~~

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Mr. Jackson B. Richard

- 2 -

The staff has estimated its review of the requested alternate inspection interval will be completed by May 30, 1986, assuming acceptable supplemental information requested herein is provided by December 31, 1985, and any additional information requested during the review is provided on a high priority basis. If you cannot provide the additional information requested herein by December 31, 1985, please advise the NRC Project Manager for Grand Gulf Nuclear Station within 7 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original Signed by

L. L. Kintner for

Elinor G. Adensam, Chief
Licensing Branch #4
Division of Licensing

Enclosure:

Request for Additional Information

cc:

See next page

SLC
DL:LB4
LKintner:15/hmc
11/24/85

SLC
DL:LB4
MDuncan
11/25/85

~~MTER
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Mr. Jackson B. Richard
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Grand Gulf Nuclear Station

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ENCLOSURE
REQUEST FOR ADDITIONAL INFORMATION REGARDING
TURBINE DISC INSPECTION AT
GRAND GULF NUCLEAR STATION UNIT 1

The Licensee submitted, on November 1, 1985, a proposal to amend the existing licensing condition (2.C.26) regarding the turbine disc inspection interval. The NRC staff has discussed this matter with the Licensee on November 12, 1985. The following is a followup of that discussion and a request for additional information.

1. It is unclear in the submittal as to the exact schedule of high pressure (HP) and low pressure (LP) turbine inspection intervals that the Licensee is proposing. The staff understands the inspection intervals as follows:

First Outage - inspect HP turbine,

Second Outage - inspect LP turbine No. 3,

Third Outage - inspect LP turbine No. 2, and

Fourth Outage - inspect LP turbine No. 1.

After the fourth outage, the inspection cycle will repeat itself. Confirm or correct this schedule.

2. The crack growth in LP turbine discs is a function of the yield strength of the disc material and the operating temperature of a disc. Also, the disc that receives moisture first has higher susceptibility to the stress corrosion cracking. The staff requests that the Licensee initially inspect the most vulnerable LP turbine which, according to the Licensee, is LP turbine No. 3. Confirm that LP turbine No. 3 is the most vulnerable.

3. Confirm that the Licensee will inspect the other two LP turbines if cracks are being detected in the inspected LP turbine.
4. There seems to be a discrepancy in the tensile strength of the disc materials between the submittal (Attachment I, page 7) and Grand Gulf Unit 1 FSAR (Appendix 10A, ES-63, page 3). The tensile strength reported in the submittal is from 149 to 156 ksi; whereas, in Appendix 10A of the FSAR, it is from 113 to 135 ksi. Verify the correct tensile strength.
5. Attachment IV of the November 1, 1985 submittal, pages 1E 85.090 to 85.092.

Explain in detail how the failure probability of a disc, $P_i(t)$ and probability of the crack initiation, q_i , are obtained.