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June 18, 1985

NUCLEAR LICENSING & SAFETY DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
License No. NPF-29
File: 0260/L-860.0
Appendix R to 10CFR50, Proposed
Exception Related to Safe Shutdown
Systems
AECM-85/0194

The NRC conducted a site inspection of Grand Gulf Nuclear Station (GGNS) during the week of May 20, 1985 in the area of fire protection. During the inspection questions were raised regarding the Mississippi Power & Light's (MP&L) revised listing of the minimum number of systems required to achieve safe shutdown (SS/D). Supplemental information regarding the NRC's questions as discussed in the inspection and briefing on May 24, 1985 has been provided to the NRC by MP&L letter to AECM-85/0174, dated May 30, 1985.

As stated in AECM-85/0174 and subsequent telephone calls with the NRC, MP&L feels an exception to the literal requirements of certain portions of Appendix R is appropriate. Attachment 1 to this letter provides MP&L's formal request for exception to 10CFR50 Appendix R Sections III.L.1 and III.L.2(b). Attachment 2 pertains to suppression pool level monitoring capability and provides summary information supporting MP&L's position that level indication is not a required safe shutdown process variable. Attachment 3 is the GGNS, plant unique fire protection analysis performed by General Electric for MP&L and is provided in support of the exception request submitted via this letter.

In accordance with 10CFR170, an application fee of \$150.00 is enclosed. Please contact this office if you require further information.

Yours truly,

L. F. Dale
Director

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PDR ADOCK 05000416
F PDR

JGC:vog
Attachments

cc: (See Next Page)

Handwritten notes:
A006 w/check
1/40 #150
#05-0059

cc: Mr. J. B. Richard (w/a)
Mr. O. D. Kingsley, Jr. (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
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Mr. James M. Taylor, Director (w/a)
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Dr. J. Nelson Grace, Regional Administrator (w/a)
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EXCEPTION REQUEST

Section III.L.1 of Appendix R to 10CFR50 states that system process variables shall be maintained within those predicted for a loss of normal a.c. power. Further, section III.L.2.(b) of Appendix R states in part that, "The reactor coolant makeup function shall be capable of maintaining the reactor coolant level above the top of the core."

MP&L requests exception from the literal requirements of that stated above based on the following discussion.

SUMMARY AND BASIS FOR EXCEPTION

Grand Gulf Nuclear Station Unit 1 safe shutdown systems (as defined in FSAR changes transmitted to NRC by the MP&L letter AECM-85/0164) do not maintain the reactor coolant level above the top of the core for a brief interval after blowdown initiation. This is discussed in detail in the attached site specific GE analysis (See Attachment 3). In that coolant level is not maintained above the top of the core, certain process variables are not maintained within those predicted for a loss of normal a.c. power. However, the site specific GE analysis concludes that no fuel clad damage will occur as a result of this postulated brief and partial core uncover, and therefore, the "intent" of Appendix R and GGNS license condition 2.C.(23) requirements are satisfied for this exception.

SUPPRESSION POOL LEVEL MONITORING CAPABILITY

Given the design basis fire, Grand Gulf Nuclear Station Unit 1 safe shutdown systems do not include capability to provide direct indication of suppression pool level. However, this indication is not required to achieve and maintain safe shutdown conditions as a result of a design basis fire. Justification for not providing suppression pool level indication is summarized as follows:

Upon the initiation of a design bases fire, the suppression pool level is assumed to be within that required by GGNS Technical Specification limits. This is consistent with Appendix R criteria in that no other design basis events are postulated concurrent with the design basis fire.

As part of the Grand Gulf Nuclear Station Unit 1 Appendix R review program, the equipment required to maintain suppression pool integrity was reviewed and protection afforded where required, i.e. potential leakage pathways were evaluated during the associated circuits analysis for spurious operation. Those of concern were included on the Safe Shutdown Equipment/Device List. The detailed associated circuit analyses which included treatment of potential suppression pool leakage pathways were provided to the NRC in a meeting held on April 25, 1985 in the NRC Region II offices. These analyses were reviewed by the NRC staff and their consultants during the Appendix R fire protection audit of GGNS held May 20 through 24, 1985.

When the plant is aligned for alternate shutdown cooling utilizing RHR-LPCI to flood the vessel, a closed loop is established through the SRVs to the suppression pool. The resulting decrease in pool level, based on conservative engineering estimates, has been determined to be less than two (2) feet. With this closed system and small level decrease, RHR pump suction is assured.

Based on the associated analysis work on potential leakage paths, there is assurance that the appropriate circuits have been protected to prevent pool leakage given a design basis fire event. Further, the maximum pool decrease during the event represents no adverse effects on RHR pump operation. Therefore, it can be concluded that the need for direct suppression pool level indication is not required to support safe shutdown of GGNS in the event of a design basis fire.