



MISSISSIPPI POWER & LIGHT COMPANY

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P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

September 13, 1984

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-13
File: 0260/0272/L-860.0
RHR Steam Condensing Mode Testing
AECM-84/0431

The purpose of this letter is twofold:

- (1) To obtain NRC concurrence in a proposed modification to the Mississippi Power & Light (MP&L) commitment not to place the RHR system in steam condensing mode, so that Division 1 of RHR can be operated in this mode to facilitate startup testing during the Startup Test Program.
- (2) To advise the NRC and obtain approval of MP&L's plan to delay testing of the steam condensing mode for Division 2 of the RHR in accordance with License Condition 2.C.(40).

Attachment 1 of this letter provides details on when the steam condensing mode will be used and also provides justification for proceeding with the testing as scheduled, even though all of the Humphrey Containment Concerns are not fully resolved. The Power Ascension Schedule calls for the start of RHR steam condensing mode testing on day 18 of Test Condition 1 (Test Condition 1 starts at 5% power), which should occur the end of September. License Condition 2.C.(40) prohibits MP&L from making any major modification of the Initial Test Program (for example, elimination of a test) unless such modifications have been identified and have received prior NRC approval. It is necessary that MP&L receive concurrence to this request by September 22, 1984 in order to support the GGNS test program effort.

Attachment 2 of this letter provides a discussion of the reasons why MP&L is requesting a delay of the testing of Division 2 of RHR steam condensing mode. MP&L requests NRC concurrence in allowing this test to be delayed until an outage of sufficient duration to allow a repair of the Division 2 RHR system piping. Again, License Condition 2.C.(40) requires that MP&L receive concurrence of this change by September 22, 1984.

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Should the NRC require additional information on these matters, please advise.

Yours truly,

J. H. Hobbs
FOR L. F. Dale
Director

GWS/SHH:rg
Attachments

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. N. S. Reynolds (w/o)
Mr. G. B. Taylor (w/o)

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

Mr. J. P. O'Reilly, Regional Administrator (w/a)
U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30323

REQUEST TO PROCEED WITH STARTUP
TESTING OF RHR STEAM CONDENSING
MODE FOR DIVISION 1

In Reference 1, Mississippi Power & Light Company (MP&L) committed to not use the residual heat removal (RHR) system in the steam condensing mode of operation until all of the Humphrey Containment Concerns relative to this mode of operation are resolved. MP&L has since provided responses to all of the Humphrey concerns and NRC questions with regard to the steam condensing mode of operation in References 2 through 4 except for the evaluation of condensation oscillation loads which could be produced by discharges from the RHR heat exchanger relief valve discharge line. MP&L has been participating in a generic effort by the Mark III Containment Issues Owners Group (CIOG) to define these loads. The final report from this effort has recently been completed and was submitted to the NRC in Reference 5.

The purpose of this attachment is to discuss the request to allow the use and testing of the Division 1 RHR steam condensing mode in order to support the scheduled Startup Test Program. The steam condensing mode is presently scheduled to be tested in the Startup Test Program in Test Condition 1 (10-20% reactor power). This test is briefly described in paragraph 14.2.12.2.34 "Test Number 71 - Residual Heat Removal System," of the FSAR. It is MP&L's intention, if allowed, to operate the system only for brief periods during the test program and not during plant normal operation until the NRC concurs with the resolution of all outstanding issues. We believe that there are direct benefits in this, which in the longer term, would promote safe and efficient system operation once the Humphrey Containment Concerns are resolved.

A breakdown of the testing, by power level is provided below:

- (1) During the initial power ascension testing (10-20% power) in Test Condition 1, the system is tested for control system optimized response and system capacity. This test is performed with the reactor critical, at power and not isolated, and with the turbine/generator off-line. This effort is expected to take approximately four (4) days with periodic system operation.
- (2) At Test Condition 2 (approximately 30% power) a test is performed which requires initiation of a reactor trip and isolation from outside the Main Control Room. Although not specifically a test of steam condensing, it was our earlier intention to utilize the steam condensing capability to reduce the reactor pressure vessel (RPV) pressure and temperature so that we can avoid having to utilize safety relief valve (SRV) cycling. This effort would involve approximately one (1) day of system operation.
- (3) At Test Condition 2, and at a similar power level, we are scheduled to perform the Loss of Turbine/Generator and Off-Site Power Test. This test also results in a reactor trip and isolation. Once again, although not a test of the steam condensing mode, we intended to utilize it to minimize the use of SRV's. Approximately one (1) day operation would be involved with this effort.

- (4) At Test Condition 6, (100% power) a full main steam isolation valve (MSIV) isolation test is scheduled. Immediately following this test the steam condensing mode is retested with a significant decay heat load, and the reactor isolated. This effort is expected to take approximately two (2) days of periodic system operation.

The following considerations have prompted our request to utilize the steam condensing mode of operation during the Startup Test Program. First, the optimization of the control system for steam condensing mode has historically been a difficult effort, one which is best done by the NSSS vendor engineers assigned to the site during the Startup Test Phase. After the testing program, the expertise will not be readily available. Second, the Startup Test Program is an NRC recognized operator training opportunity, in which plant operators gain familiarity with plant operation, thus supplementing their simulator training. The results of the testing will be used to provide input to the simulator for use in future training. Plant operating procedures are also exercised and modified as necessary. The testing is done with ready access to the NSSS Vendor and MP&L Startup personnel assigned to the shift. A third consideration is that the test phase provides a closely structured step by step approach in power ascension. The RHR steam condensing mode is scheduled to be initially "tuned up" at a low power level in order to minimize reactivity effects on the reactor, as well as to prevent impacting turbine/generator operation as steam loads are varied.

Although it is recognized that all issues regarding the steam condensing mode are not resolved, we believe that it is in the best interest of efficient plant operation to allow brief use of the system in the test phase. This use can be done in a safe manner because of the close scrutiny and monitoring the system will have in a controlled test environment. Detailed attention will be paid to the system performance by a dedicated operator and test engineer who can readily respond to unexpected malfunctions which may pose the potential for lifting the heat exchanger relief valve.

As indicated before, MP&L has addressed all of the Humphrey Concerns and NRC questions relative to the steam condensing mode of operation except for the evaluation of condensation oscillation (CO) loads from the RHR heat exchanger relief valve discharge line in References 2 through 4. The report from the CIOG evaluation of these loads has been completed and transmitted to the NRC via Reference 5. It should be noted that due to some questions about the negative pressure generated by the CO loading and the frequency content of the loading, our Architect Engineer is in the process of reviewing the report and addressing these aspects of the CO loading. However, the conclusions of the report state that the potential condensation oscillation loads which could be produced by steam discharge from the RHR relief valves are bounded by the loads which are produced by main steam SRV actuations and that condensation oscillation loads have no design significance. Because of the very conservative nature of the source from which these loads were generated, MP&L agrees with these conclusions and believes that the use of the steam condensing mode of operation will not present any safety concern, even in the unlikely event of an unexpected relief valve discharge.

In order for GGNS to proceed with the current Startup Test Program for RHR Division 1, MP&L requests the NRC's concurrence in clarifying our commitment on the steam condensing mode so that this mode can be used during the Startup Test Program. This will allow MP&L to operate the RHR system in the

steam condensing mode in order to meet startup testing requirements and maintain the current startup testing schedule. Once all tests requiring operation in the steam condensing mode are completed, the operation of this mode would be prohibited until the NRC concurs on the resolution of the related Humphrey Concerns.

- References:
1. Letter Number AECM-82/353, from L. F. Dale to H. R. Denton, dated August 19, 1982
 2. Letter Number AECM-82/497, from L. F. Dale to H. R. Denton, dated October 22, 1982
 3. Letter Number AECM-82/574, from L. F. Dale to H. R. Denton, dated December 3, 1982
 4. Letter Number AECM-83/0146, from L. F. Dale to H. R. Denton, dated March 23, 1983
 5. Letter Number AECM-84/0443, from L. F. Dale to H. R. Denton, dated September 7, 1984

REQUEST TO DELAY DIVISION 2 RHR
STEAM CONDENSING MODE TESTING

In Reference 1, Mississippi Power & Light (MP&L) submitted License Event Report 84-024-0. This LER reported a plant shutdown that was required by the GGNS Technical Specifications due to the inoperability of both independent Containment Spray loops of the Residual Heat Removal (RHR) system. This event was initiated when two cracks were found in a 3 inch diameter branch pipe off the main RHR B loop header and the subsequent discovery of support deficiencies in both RHR loops. In addition to reworking pipe supports to restore the RHR loops to operation, the damaged 3 inch pipe was removed and a temporary, capped 6 inch weld-o-let connection was attached to the main RHR loop header to restore RHR B loop. Reference 2 submitted the final report on this LER.

The replacement of the damaged 3-inch pipe with a capped 6 inch weld-o-let has left the steam condensing mode of RHR B inoperable. Therefore, MP&L is requesting, in accordance with License Condition 2.C.(40), NRC concurrence in the delay of the testing of Division 2 of RHR steam condensing mode. This testing will be delayed until an outage of sufficient length of time to repair the piping occurs. Once the piping is repaired, MP&L will develop a schedule for inclusion of the Division 2 RHR steam condensing mode testing.

- References:
1. Letter Number AECM-84/0290, from L. F. Dale to Document Control Desk, dated May 30, 1984
 2. Letter Number AECM-84/0408, from L. F. Dale to Document Control Desk, dated August 8, 1984