

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF

MISSISSIPPI POWER & LIGHT COMPANY
and
SYSTEM ENERGY RESOURCES, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
and
ENTERGY OPERATIONS, INC.

AFFIRMATION

I, W. T. Cottle, being duly sworn, state that I am Vice President, Operations GGNS of Entergy Operations, Inc.; that on behalf of Entergy Operations, Inc., System Energy Resources, Inc., and South Mississippi Electric Power Association I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this application for amendment of the Operating License of the Grand Gulf Nuclear Station; that I signed this application as Vice President, Operations GGNS of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

W. T. Cottle
W. T. Cottle

STATE OF MISSISSIPPI
COUNTY OF CLAIBORNE

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 30 day of May, 1991.

(SEAL)

Patricia McLaughlin
Notary Public

My commission expires:
~~My Commission Expires July 1, 1993~~

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A. SUBJECT

1. NPE-90/02 Removal of References to the Non-Loop Manual Flow Control Mode of the Reactor Recirculation System
2. Affected Technical Specifications:
 - a. Figure 3.2.3-1, MCPR_f, Page 3/4 2-5
 - b. Figure 3.2.4-2, LHGRFAC_f, Page 3/4 2-7b
 - c. LCO 3.4.1.1.b.2, Page 3/4 4-1
 - d. Action Statement 3.4.1.1.g, Page 3/4 4-1a
 - e. Surveillance Requirement 4.4.1.1.3, Page 3/4 4-1a
 - f. Bases 3/4.2.3. Pages B 3/4 2-4, 2-4a, and 2-6
 - g. Bases 3/4.2.4, Page 3/4 2-7
 - h. Bases 3/4.4.1, Page B 3/4 4-1

B. DISCUSSION

1. Entergy Operations, Inc. is requesting revisions to the Technical Specifications (TS) and Bases which make reference to or infer operation of the Reactor Recirculation System in the Non-Loop Manual mode of flow control. This mode of operation has been permanently disabled by a control circuit design change implemented during the fourth refueling outage.
2. Prior to the design change, the reactor recirculation flow control system was capable of controlling the two loop flow control valves either individually in Loop Manual (manual) control or in unison via Non-Loop Manual (automatic) flow control. The automatic mode was comprised of circuitry which adjusted total core flow via simultaneous signals to both valves. This maintained either an established turbine-generator demand, a desired reactor neutron flux level, or a set total recirculation drive flow, depending upon operator preference. The Non-Loop Manual mode was removed by permanently installing wiring which prevents transferring the flow control system out of the Loop Manual mode under any circumstances.
3. This design modification was made because it was determined that operation in the automatic flow control mode, while originally intended for operational flexibility, provided little or no benefit compared to manual operation. In fact, having the capability to employ Non-Loop Manual flow control resulted in several inconvenient and costly requirements being placed on plant operation and maintenance. It was also necessary to perform additional plant transient analyses specifically addressing this mode for each reload.

4. Marked-up TS and Bases pages reflecting the desired changes are attached.
5. A minor editorial change is also being made to Bases Page B 3/4 2-7a. This change deletes the continuation heading atop the page to correct an editorial error made in Amendment No. 73 to NPF-29.

C. JUSTIFICATION

1. The Non-Loop Manual flow control mode of the Reactor Recirculation System was permanently disabled during the fourth refueling outage in order to accommodate the plant operating staff's preference for system operation exclusively in the Loop Manual mode. A number of reasons were identified for this preference, including compatibility with core monitoring software, reduction in I&C maintenance and calibration efforts, and increased operating margin thermal limits gained through less restrictive reload licensing analyses.

A design change was implemented to accomplish the required circuit modifications. Prior to installation, this design change was reviewed against the criteria of 10CFR50.59 and determined not to be an unreviewed safety question. It was also determined that a TS revision was not required prior to making the change since no operating conditions or actions in the TS require that the system be placed into the Non-Loop Manual mode.

2. In the determination of the Cycle 5 thermal limits for Linear Heat Generation Rate (LHGR) and Minimum Critical Power Ratio (MCPR), analyses were performed for both Loop Manual and Non-Loop Manual operation. TS Figures 3.2.3-1 (MCPR_f) and 3.2.4-2 (LHGRFAC_f) each contain curves reflecting both modes. The curves in each TS Figure for Non-Loop Manual mode are being deleted by this change. These curves are not required since this mode of flow control is no longer possible. This change in no way affects the basis or availability of the correct thermal operating limit information. In fact, deletion of the curves reduces the possibility of unintentional use of an incorrect curve, as well as removing superfluous, unnecessary information.

Additionally, Non-Loop Manual operation after Cycle 5 will not be supported by reload analyses and the curves cited above will likely be inaccurate.

3. The Bases discussions of the above thermal operating limits curves (Bases 3/4.2.3 and 3/4.2.4) are also being modified to reflect the disabling of the Non-Loop Manual mode. This is necessary to ensure that the description of the derivation and basis of these curves is accurate and complete.

4. TS 3.4.1.1.b.2 requires that single recirculation loop operation be conducted in the Loop Manual flow control mode only. In addition, Action g of TS 3.4.1.1 states the steps to be taken in the event flow control is determined not to be in the manual mode, and Surveillance Requirement 4.4.1.1.3 specifies the criteria for determining that flow control in the operating loop is in manual. This change will delete these portions of TS 3.4.1.1.

The design modification discussed in C.1 above permanently disabled the Non-Loop Manual mode of flow control. This was done by installing wiring which electrically prevents transferring out of the manual mode with the controls available to the operator. Intentional or inadvertent operation in the automatic mode is thus not credible without physical hardware changes to the control circuitry.

Since it is now not physically possible to operate in other than the manual mode, stipulations requiring Loop Manual flow control while in single recirculation loop operation are no longer necessary. This is also true of the surveillance verifying manual flow control. This change does not affect the validity of the analyses supporting single loop operation, or in any way relax the requirements which must be met in order to operate with one recirculation loop out of service.

5. Bases 3/4.4.1 must also be revised to reflect the above changes. This is necessary to ensure that the description of the analysis of single recirculation loop operation is accurate and complete.
6. There are currently no TS which require or rely on operation of the Reactor Recirculation System exclusively in the Non-Loop Manual mode. The ability to operate in this mode is not needed to ensure that the assumptions of any applicable safety analyses remain valid. The changes requested are intended only to enhance the clarity and accuracy of the affected Specifications and Bases by deleting references to automatic flow control which may prove confusing or misleading now that this mode is no longer available. Thus, these changes are considered to be administrative.

D. NO SIGNIFICANT HAZARDS CONSIDERATION

1. Entergy Operations, Inc. is proposing that TS 3.2.3, 3.2.4 and 3/4.4.1.1 be revised to reflect administrative changes caused by the elimination of the Non-Loop Manual flow control mode of the Reactor Recirculation System. These revisions remove references to the Non-Loop Manual flow control mode which state or imply that this mode is available for use.

2. The Commission has provided standards for determining whether a no significant hazards consideration exists as stated in 10CFR50.92(c). A proposed amendment to an operating license involves no significant hazards if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.
3. GGNS has evaluated the no significant hazards considerations in its request for a license amendment. In accordance with 10CFR50.91(a), GGNS is providing the following analysis of the proposed amendment against the three standards in 10CFR50.92. The hardware modifications made to the flow control circuitry have also been evaluated separately and found acceptable as part of the GGNS design change process per the provisions of 10CFR50.59.
 - a. No significant increase in the probability or consequences of an accident previously evaluated results from this change.

The Non-Loop Manual mode of operation has been permanently removed and it is no longer possible to operate the Reactor Recirculation System in automatic flow control. Thus, only those plant transient safety analyses which assume manual recirculation flow control prior to and during Reactor Recirculation Flow Controller Failure events now apply. The proposed TS changes simply remove references to the use of the automatic flow control mode throughout the TS. The proposed changes in no way increase the likelihood of a Flow Controller Failure event occurring or make the results of the event analyses more severe. Continuous operation in the Loop Manual mode only may actually decrease the probability and consequences of the analyzed events. This is due to less active equipment involved in the manual mode, as well as only one recirculation loop being postulated to fail instead of two as when operating in the Non-Loop Manual mode. The changes are administrative in nature since they are only removing information and requirements that are no longer consistent with plant design.

Thus, the probability or consequences of previously analyzed accidents are not increased.

- b. The change would not create the possibility of a new or different kind of accident from any previously analyzed.

Both the Loop Manual and Non-Loop Manual modes of operation have been previously analyzed/evaluated and approved. The proposed changes make the TS consistent with current plant design, and no new operating or failure modes are created. The scope of these TS changes is strictly limited to removal of extraneous references to automatic Reactor Recirculation System flow control, which is no longer available. There are no new or different surveillance tests or actions required by the revisions. No TS requirements associated with operation in the manual flow control mode are affected, and there is no change in the degree of protection currently afforded by existing surveillances. There is also no addition, deletion, or modification of any Class 1E component or circuit involved.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from those previously analyzed.

- c. The change would not involve a significant reduction in the margin of safety.

Both Loop Manual and Non-Loop Manual modes of flow control have been separately evaluated and approved. No assumptions, methods, or results of applicable safety analyses are changed. The proposed changes do not alter the margin of safety currently realized by implementation of the existing TS for operation in the Loop Manual mode of flow control. Since operation in automatic flow control is no longer possible, there are no margins of safety related to this mode of operation which must be implemented by the TS. Removal of references to the Non-Loop Manual mode only makes the TS consistent with plant design and avoids potential confusion.

These changes thus do not involve a significant reduction in the margin of safety.

4. Based on the above evaluation, Entergy Operations has concluded that operation in accordance with the proposed amendment involves no significant hazards considerations.