Entergy Operations

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Grand Gulf Nuclear Station

February 27, 1991

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Modification of Regulatory Guide 1.97 Commitment for Flux Monitoring; Proposed Amendment to Operating License Condition 2.C(36) PCOL-91/01, Revision 0

GNRO-91/00031

Gentlemen:

The issue of Regulatory Guide (RG) 1.97 neutron flux monitoring has been under discussion between the BWR Owners' Group (BWROG) including Entergy Operations and the NRC Staff for several years. The BWROG had provided alternate requirements on flux monitoring capability for RG 1.97 in Licensing Topical Report NEDO-31558, which was endorsed by Entergy Operations for Grand Gulf Nuclear Station (GGNS) on April 28, 1988 (AECM-88/0083). The NRC Staff rejected the BWROG positions by a Safety Evaluation Report on January 29, 1990, and the GGNS positions by letter on February 2, 1990 (MAEC-90/0025).

On August 16, 1990, the BWROG filed an appeal of the NRC Staff's position on NEDO-31558. In a September 13, 1990, letter to the BWROG Chairman, Dr. Thomas E. Murley of the NRC indicated that his decision on the appeal would be made within two months and also stated that licensees could defer plant-specific actions until his decision was reached. As of this date, the NRC has not yet reached a decision on the appeal.

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As discussed in our series of quarterly status reports, Entergy Operations has worked in good faith to meet our commitment of upgrading existing GGNS flux monitoring capability by start-up from the fifth refueling outage (RFO5). In order to ensure that the highly customized equipment involved is ordered, fabricated, and delivered in time for RFO5 installation, a purchase agreement is needed with the equipment supplier by approximately March 1, 1991. We anticipate large penalties for cancellation once an agreement has been executed; therefore, Entergy Operations would face significant financial risk without the NRC decision on the BWROG appeal. As discussed in our quarterly status report dated February 6, 1991 (GNRO-91/00006), Entergy Operations will not enter into such a purchase agreement for this reason until after the appeal decision is reached. We believe this approach to be consistent with Dr. Murley's statement regarding the deferral of plant-specific actions in the September 13, 1990, NRC letter to the BWROG Chairman.

Based on discussion with the NRC Project Manager which indicated that the NRC decision on the appeal will not be made until after March 1, 1991, Entergy Operations is by this letter submitting a proposed change to the GGNS Operating License. This change will incorporate the developments discussed above into our commitment for RG 1.97 flux monitoring, and allow for the GGNS implementation of the final resolution of the BWROG appeal without additional change to the operating license.

In accordance with the provisions of 10CFR50.4 the original of the requested amendment is attached. The attached OLCR-NL-91/01 provides the technical justification and discussion to support the requested amendment. This request for amendment has been reviewed and accepted by the GGNS Plant Safety Review Committee and the Safety Review Committee. Based on the guidelines present in 10CFR50.92, Entergy Operations has concluded that this proposed amendment involves no significant hazards.

If you have any questions or desire additional information, please advise.

Yours truly,

WTC/HEK/ams
attachment:
cc: (See Next Page)

cc: Mr. D. C. Hintz (w/a)
Mr. J. Mathis (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
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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 27 day of February, 1991.

(SEAL)

Patricia Heaghegan
Notary Public

My commission expires:
My Commission Expires July 1, 1993

G9102141/SNLICFLR - 5

OLCR - NL-91/01 Modification of Regulatory Guide 1.97 Commitment for Flux Monitoring

I. SUBJECT

Facility Operating License No. NPF-29; Operating License Condition 2.C(36) - Emergency Response Facilities; Attachment 1, Item (c)(4).

II. DISCUSSION

The specific requirements necessary for BWRs to meet Regulatory Guide (RG) 1.97 for neutron flux monitoring have been discussed for some time between the NRC Staff and various licensees. Entergy Operations has been involved in many of these discussions, both as an individual licensee and as a member of the BWR Owners' Group (BWROG). The BWROG's positions were formalized and submitted to the NRC Staff in Licensing Topical Report NEDO-31558 dated April 1, 1988 (Reference 1). Entergy Operations followed with the submittal of a Grand Gulf Nuclear Station (GGNS) plant-specific design evaluation for NEDO-31558 (Reference 2). The NRC Staff rejected both these submittals in January and February 1990 (References 3 and 4).

After some discussion with the NRC Staff (References and 6), the BWROG filed an appeal of the Staff's position on NEDO-31558 on August 16, 1990 (Reference 7). The decision on this appeal is still pending (Reference 8) and is not now expected to be made until after March 1, 1991. Final resolution of the appeal will determine the BWR requirements necessary for compliance with RG 1.97 for flux monitoring.

As discussed in the latest GGNS quarterly status report on flux monitoring (Reference 9), Entergy Operations is faced with the need to enter into a purchase agreement by approximately March 1, 1991, in order to have the highly customized excore neutron flux monitoring system (NFMS) equipment available for installation in the fifth refueling outage (RF05) per our existing commitment. There is a significant financial risk involved in entering into such an agreement without the NRC decision on the BWROG appeal. Therefore, Entergy Operations has not done so. We feel this is consistent with the September 13, 1990, letter by Dr. Thomas E. Murley of the NRC (Reference 8), which stated that licensees could defer plant-specific actions until an appeal decision was reached.

The current operating license condition specifies that GGNS will implement the requirements of RG 1.97 for flux monitoring prior to start-up from RF05, and GGNS has previously committed to accomplish this by the installation of a new excore NFMS (References 10 & 11). The proposed change will continue to commit GGNS to implementing the requirements of RG 1.97 for flux monitoring, and will allow flexibility for GGNS and the NRC Staff as noted below:

1. The GGNS implementation schedule will be removed from the Operating License to allow for a resolution of the pending BWROG appeal, and

2. The specific GGNS implementation actions and associated schedules to meet RG 1.97 for flux monitoring requirements will be removed from the Operating License to allow for the implementation of RG 1.97 requirements consistent with the final resolution of the BWROG appeal (which might be different from the existing GGNS commitment of a new excore NFMS). The GGNS implementation actions and schedules would be submitted to the NRC Staff for review and approval within 90 days after the final resolution of the BWROG appeal.

III. JUSTIFICATION

As discussed above, the specific requirements necessary to meet RG 1.97 for flux monitoring for BWRs have not been conclusively determined. The BWROG and Entergy Operations feel that the positions in NEDO-31558 and the related GGNS evaluation are adequate, while the NRC Staff has not previously agreed with these positions. The final resolution of the BWROG appeal will establish these necessary requirements for RG 1.97 flux monitoring for BWRs including GGNS.

Therefore, the GGNS implementation of an excore NFMS as currently committed may result in the expenditure of considerable resources on an effort which could subsequently prove to be unnecessary. Entergy Operations feels that this may potentially result in an overall negative impact on GGNS by reducing the resources available for other activities which might have a more positive benefit on plant operations.

The proposed change will continue to require GGNS to implement necessary RG 1.97 flux monitoring requirements, but only after these requirements are established by the final resolution of the BWROG appeal. The proposed change also provides for NRC review and approval of GGNS actions and schedules for the implementation, which will ensure that the NRC Staff agrees that these actions are in accordance with the final BWROG appeal resolution before their implementation.

IV. SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed amendment would modify the GGNS Operating License Condition 2.C(36) Attachment 1, Item (c)(4) to allow for the final resolution of the BWROG appeal of the NRC Staff's position on NEDO-31558 (and the final determination of necessary BWR requirements for RG 1.97 flux monitoring) before the implementation of these requirements at GGNS. The proposed amendment includes a requirement for the submittal of future GGNS actions and schedules for RG 1.97 flux monitoring implementation to the NRC Staff for review and approval.

In accordance with the requirements of 10CFR50.92, the following discussion is provided in support of the determination that no significant hazards are created or increased by the changes proposed in this amendment request.

1. No significant increase in the probability or the consequences of an accident previously evaluated results from this proposed change because:

   A change in the existing GGNS commitment to install an excore NFMS before start-up from RFO5 does not involve a significant increase in the probability of an accident previously evaluated since the previously proposed excore NFMS would not affect reactor operation and is not an initiator for any previously evaluated accidents. The previously proposed excore NFMS would provide post-accident indication of reactor power and would not have provided any signals to actuate engineered safety systems or to trip the reactor. Furthermore, reactor trip signals from the currently installed neutron monitoring system to the reactor protection system would not have been changed by the addition of the proposed excore NFMS.

   The change in the existing GGNS commitment to install an excore NFMS before start-up from RFO5 would not cause the consequences of an accident previously analyzed to increase significantly since:

   a. The NRC Staff has recognized (References 3 and 6) that an upgraded or new flux monitoring system would be of value primarily for currently undefined accidents which are outside the design basis.

   b. The existing SRM/IRM system is expected to function during at least the initial phase of an accident (including a LOCA) to indicate subcritical reactor power. Long term post-LOCA monitoring is available through the APRM channels where operator action is required at the APRM downscale alarm. In addition, other measures and indications can provide the operator with reactor power information as discussed below:

      i. The present control rod position indication system provides the reactor operator with information that all rods are inserted.

      ii. Qualified instrumentation such as reactor pressure, suppression pool temperature, and safety relief valve (SRV) actuation provide the reactor operator with post-accident information for assessment of reactor power.

c. Under a potential event as considered in the NRC Safety Evaluation Report on NEDO-31558 (Reference 3), the GGNS symptom based Emergency Procedures (EPs) provide appropriate conservative actions if reactor power cannot be directly measured in a post-accident condition. The EPs contain action steps which mitigate the symptomatic effects of design basis events (such as LOCA) and beyond design basis events (such as ATWS) along with potential degraded core events.

Therefore, the probability or the consequences of an accident previously evaluated will not be significantly increased by this change from the existing commitment to install an excore NFMS before start-up from RF05. GGNS implementation of RG 1.97 flux monitoring under the proposed change would be required as determined necessary by the final resolution of the issue, as reviewed and approved by the NRC Staff.

2. This proposed change will not create the possibility of a new or different kind of accident than any previously evaluated because:

The excore NFMS previously committed to would provide supplemental post-accident monitoring capability only, by providing additional operator information in order to perform possible mitigative actions during undefined, beyond-design-basis events. Its installation would not preclude or prevent any action. As such, the proposed change (which would allow GGNS implementation of RG 1.97 flux monitoring after the final determination of necessary BWR RG 1.97 flux monitoring requirements) will not create the possibility of a new or different kind of accident. During the evaluation period to determine the conclusive RG 1.97 flux monitoring requirements and any period necessary for implementation, the existing SRM/IRM neutron monitoring system will remain unchanged from the configuration that was previously evaluated in the FSAR.

Therefore, the possibility of a new or different kind of accident than any previously evaluated would not be changed by the proposed change from the existing commitment to install an excore NMS prior to start-up from RF05. GGNS implementation of RG 1.97 flux monitoring under the proposed change would be required as determined necessary by the final resolution of the issue, as reviewed and approved by the NRC Staff.

3. This proposed change does not involve a significant reduction in the margin of safety because:

   The current GGNS margin of safety is established by the existing SRM/IRM neutron monitoring system and the shutdown margin of the control rod system. The design, function, and operation of the existing GGNS IRM/SRM neutron monitoring system will remain the same as that described in the UFSAR. No additional reactor protection trip functions would be performed by the excore NFMS previously committed to for RF05 installation. EP actions are conservative with respect to the use of the existing neutron monitoring system for verification that the reactor is shutdown. Given that the excore NFMS previously committed to has not been determined to provide necessary information to operators for any defined accident scenario (References 1, 2, 3, 5, 6, and 7), GGNS operation with current procedures and the existing neutron monitoring system maintains the existing margin of safety.

   Therefore, the margin of safety is not significantly reduced by the proposed change from the existing commitment to install an excore NFMS prior to start-up from RF05. GGNS implementation of RG 1.97 flux monitoring under the proposed change would be required as determined necessary by the final resolution of the issue, as reviewed and approved by the NRC Staff.

V. REFERENCES

1. BWROG/GE NEDO-31558 dated April 1, 1988; "BWR Owners' Group Topical Report Position on NRC RG 1.97 Rev. 3 Requirements for Post-Accident Neutron Monitoring System"

2. AECM-88/0083 dated April 28, 1988; GGNS Plant Specific Design Evaluation for NEDO-31558

3. NRC letter dated January 29, 1990 (MAEC-90/0025); issuing the NRC Safety Evaluation Report on BWROG NEDO-31558

4. NRC letter dated February 2, 1990; regarding Denial of Entergy Operations OL Amendment Request of December 20, 1989

5. BWR Owners' Group Letter (BWROG-9025/MFN-008-90) dated February 21, 1990 entitled "Position on NRC Regulatory Guide 1.97 Rev. 3 Requirements for Post-Accident Neutron Monitoring System"

6. NRC letter dated May 21, 1990 to the BWROG entitled, "Position on the Regulatory Guide 1.97 Rev. 3 Requirements for Post Accident Neutron Monitoring System"

7. BWR Owners' Group letter (see BWROG-90107) dated August 16, 1990 entitled "Appeal of Staff Position on Upgraded Neutron Flux Monitoring Systems"

8. NRC letter dated September 13, 1990 to the BWROG Chairman; regarding the BWROG Appeal of the Staff's Position on Post-Accident Neutron Flux Monitoring Systems

9. GNRO-91/00006 dated February 6, 1991; Quarterly Status Report for RG 1.97 Neutron Monitoring System for the Period Ending December 31, 1990

10. AECM-90/0118 dated June 22, 1990; Modification of RG 1.97 Compliance Schedule for Neutron Monitoring; Proposed Amendment to the Operating License Condition 2.C(36) - PCOL-90/01, Revision 2

11. NRC letter dated November 7, 1990 (MAEC-90/0281); issuing Amendment No. 72 to Facility Operating License No. NPF-29 (As corrected by NRC letter dated November 14, 1990, MAEC-90/0284).