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May 7, 1997

U.S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29
Request to Revise Technical Specifications: Response Time Testing
Proposed Amendment to the Operating License (PCOL-96/11)

Reference: NEDO-32291-A, ''System Analyses for Elimination of Selected Response Time Testing Requirements,'' October 1995

GNRO-97/00037

Gentlemen:

Entergy Operations, Inc. (EOI) is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License. This request consists of proposed changes to the Technical Specifications (TS) to eliminate selected response time testing requirements. The affected TS are TS 3.3.1.1, ''Reactor Protection System (RPS) Instrumentation''; TS 3.3.6.1, ''Primary Containment and Drywell Isolation Instrumentation''; TS 3.5.1, ''ECCS-Operating''; and TS 3.5.2, ''ECCS-Shutdown.'' The TS Bases supporting the above mentioned changes are also included with this proposal.

With exception of TS 3.5.2, the proposed changes are supported by analyses performed by the Boiling Water Reactor Owners' Group (BWROG) (NEDO-32291-A, ''System Analyses for Elimination of Selected Response Time Testing Requirements,'' October 1995) which demonstrates that other periodic tests required by TS, such as channel calibrations, channel checks, channel functional tests, and logic system functional tests, in conjunction with the actions taken in response to NRC Bulletin 90-01, ''Loss of Fill-Oil in Transmitters Manufactured by Rosemount,'' and Supplement 1, are adequate to ensure that instrument response times are within acceptable limits. By letters dated December 28, 1994 and May 31, 1995 (supplement to December 28, 1994 NRC letter), the NRC staff provided their acceptance of NEDO-32291-A, subject to certain conditions, for

reference in license amendment applications. Elimination of response time testing listed in TS 3.5.2 is supported in the attached justification and no significant hazards consideration (Attachment 2). The elimination of response time testing in TS 3.5.2 has previously been accepted by the NRC for other BWR-6 facilities.

A description of the proposed change and the associated justification (including a Basis For No Significant Hazards Consideration) are provided in Attachment 2. A marked-up copy of the affected pages from the current Technical Specifications is provided in Attachment 3. In addition, a marked-up copy of the affected pages from the Technical Specification Bases is provided in Attachment 4. Upon approval of this request by the NRC, EOI will revise the GGNS TS Bases in accordance with GGNS TS 5.5.11, "Technical Specifications Bases Control Program," to reflect the changes provided in Attachment 4. An affidavit supporting the facts set forth in this letter and its attachments is provided as Attachment 1.

EOI has reviewed the proposed change against the criteria of 10CFR51.22 for categorical exclusion from environmental impact considerations. The proposed change does not involve a: significant hazards consideration; significant change or increase in the types or amounts of any effluents that may be released offsite; significant increase in individual or cumulative occupational radiation exposure. Based on the foregoing, EOI concludes that the proposed change meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

This request is being submitted as part of the cost beneficial licensing action (CBLA) program. Although the proposed change does have safety benefit (e.g., occupational dose reduction due to reduced testing), its major benefit is economic.

In accordance with the provisions of 10CFR50.4, the signed original of the requested amendment is enclosed. Attachment 2 provides the technical justification and discussion to support the requested amendment

Based on the guidelines presented in 10CFR50.92, EOI has concluded that this proposed amendment involves no significant hazards considerations and is requesting action on this submittal.

Yours truly,

JJH/MJL
attachments: 1. Affirmation per 10CFR50.30
2. Discussion and Justification
3. Mark-ups of Affected Technical Specifications Pages
4. Mark-ups of Technical Specifications Bases Pages
cc: (See Next Page)

cc: GGNS NRC Senior Resident Inspector (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
Mr. J. W. Yelverton (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

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

AFFIRMATION

I, J. J. Hagan, 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.

J. J. Hagan

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 7th day of May, ~~1996~~ 5/7/97 1997.

(SEAL)

Richard R Moore IV
Notary Public

My commission expires:
MISSISSIPPI STATEWIDE NOTARY PUBLIC
MY COMMISSION EXPIRES JUNE 5, 1998
BONDED THRU STEGALL NOTARY SERVICE

Attachment 2

Proposed Amendment to the Operating License (PCOL 96/11) for Grand Gulf Nuclear Station

DISCUSSION AND JUSTIFICATION

DESCRIPTION OF PROPOSED CHANGES:

In accordance with 10CFR50.90, the following changes to the GGNS Technical Specifications (TS) are being proposed:

1. With respect to changes for RPS Instrumentation, a new note (Note 2) has been added to Surveillance Requirement (SR) 3.3.1.1.15 to state that the channel sensors may be excluded from the RPS RESPONSE TIME test. This SR is applicable to the Reactor Vessel Steam Dome Pressure: - High (Function 3), Reactor Vessel Water Level - Low, Level 3 (Function 4), and Reactor Vessel Water Level - High, Level 8 (Function 5) instrumentation channels which are listed in TS Table 3.3.1.1-1. (Reference: NEDO-32291-A)

2. With respect to changes for Primary Containment and Drywell Isolation Instrumentation, a new note has been added to SR 3.3.6.1.8 to state that the channel sensors may be excluded from the ISOLATION SYSTEM RESPONSE TIME test. This SR is applicable to the Reactor Vessel Water Level - Low Low Low, Level 1 (Function 1.a), Main Steam Line Pressure - Low (Function 1.b), and Main Steam Line Flow - High (Function 1.c) instrumentation channels which are listed in TS Table 3.3.6.1-1. (Reference: NEDO-32291-A)

3. With respect to changes for ECCS - Operating, a new note has been added to SR 3.5.1.8 that clarifies that the ECCS actuation instrumentation are excluded from the ECCS RESPONSE TIME test for the HPCS System. (Reference: NEDO-32291-A)

4. With respect to changes to ECCS - Shutdown, the requirement to verify ECCS RESPONSE TIME, SR 3.5.2.7, for the High Pressure Core Spray (HPCS) system is proposed for deletion. The 18 month response time test required by SR 3.5.1.8 would identify any system response problems that may exist.

The proposed TS changes are reflected on a marked-up copy of the affected pages from the GGNS TS in Attachment 3. It should be noted that the format of the TS included in Attachment 3, of the proposed changes for Items 1.- 3., are different than that provided in Appendix H (Pages H-15 thru H-18) of NEDO-32291-A since GGNS has adopted TS written in the improved TS format. However, the proposed changes meet the intent of those provided in Appendix H of NEDO-32291-A. In addition, changes to the GGNS TS Bases, which are consistent with the proposed TS changes, have been provided in Attachment 4.

BACKGROUND

This proposed change involves elimination of selected response time testing (RTT) requirements from the Technical Specifications (TS). Specifically, this includes the response time testing of sensors for selected parameters of the:

(1) Reactor Protection System (RPS)
(2) Primary Containment and Drywell Isolation Instrumentation
(3) Emergency Core Cooling System (ECCS) - Operating actuation instrumentation. Elimination of all RTT requirements in MODES 4 and 5 is also proposed.

Analyses have been performed by the Boiling Water Reactor Owners' Group (BWROG) demonstrating that other periodic tests required by TS, such as channel calibrations, channel checks, channel functional tests, and logic system functional tests, in conjunction with actions taken in response to NRC Bulletin (NRCB) 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," and Supplement 1, provide adequate assurance that instrument response times are within acceptable limits. The analyses are documented in NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing," October 1995. The analyses assert that the response time tests proposed for elimination are of little safety significance and result in unnecessary personnel radiation exposure, reduced availability of systems during plant shutdown, increased potential for inadvertent actuations of safety systems, and a significant burden to utility resources.

BASIS

The basis for this request is consistent with Regulatory Guide 1.118, "Periodic Testing of Electric Power and Protection Systems", Revision 2 which endorses IEEE 338-1977 which states:

> "Response time testing of all safety related equipment, per se, is not required if, in lieu of response time testing, the response time of safety system equipment is verified by functional testing, calibration checks or other tests, or both. This is acceptable if it can be demonstrated that changes in response time beyond acceptable limits are accompanied by changes in performance characteristics which are detectable during these routine periodic tests."

NEDO-32291-A identifies the potential failure modes of components in the affected instrumentation loops which could potentially impact the instrument loop response time. In addition, industry operating experience was reviewed to identify failures that affect response times and how they were detected. The failure modes identified were then evaluated to determine if the effect on response time would be detected by other testing requirements contained in TS. The results of this analysis demonstrate that other TS testing requirements (channel calibrations, channel checks, channel functional tests, and logic system functional tests) and actions taken in response to NRC Bulletin 90-01 Supplement 1 are sufficient to identify failure modes or degradation in instrument response times and assure operation of the analyzed instrument loops within acceptable limits. Furthermore, there were no known failure modes identified that can be detected by response time testing that cannot also be detected by other TS-required tests.

The evaluations documented in NEDO-32291-A demonstrate that response time testing can be eliminated for the following:

1. All ECCS actuation instrumentation,
2. Sensors for selected RPS actuation instrumentation, and
3. Sensors for selected main steam line isolation valve (MSIV) closure actuation instrumentation.

By letters dated December 28, 1994 and May 31, 1995 (supplement to December 28, 1994 NRC letter), the NRC staff provided their acceptance of NEDO-32291-A, subject to certain conditions, for reference in license amendment applications.

The basis for elimination of ECCS - Shutdown High Pressure Core Spray (HPCS) system RTT is that there are no design basis events in MODES 4 and 5 for which the ECCS HPCS system is required to initiate within a specified period of time. ECCS response time testing performed during MODES 1, 2, and 3 is adequate to identify any operability problems with the ECCS HPCS system. Therefore, we conclude that response time testing specifically for ECCS - Shutdown can be eliminated.

Additional Information Required by NRC SER to NEDO-32291-A

In accordance with the conditions identified in the NRC staff's Safety Evaluation of NEDO-32291-A, the following information is provided:

EOI has confirmed the applicability of NEDO-32291-A to GGNS. As identified in Appendix A to that report, GGNS was a participating utility in the evaluation. In addition, EOI has confirmed that the components within the scope of this request have been evaluated in NEDO-32291-A. These components are identified in Appendix G (Table G-4) of NEDO-32291-A and Table 1 of the NRC staff's Safety Evaluation of NEDO-32291-A. The current components within the scope of this request for GGNS are Rosemount transmitters models 1152 and 1153; Rosemount trip units model 510DU and 710DU. Future components would be limited to those listed in NEDO-32291-A.

Upon approval of this change, EOI confirms that GGNS will be in conformance with the following recommendations from EPRI NP-7243, "Investigation of Response Time Testing Requirements":

(a) Prior to installation of a new transmitter/switch or following refurbishment of a transmitter/switch (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value[1]. Applicable GGNS procedures and/or the component data base for the affected transmitter/switch will be revised and updated as necessary to address this item upon approval of this request.

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[1] Note: In EPRI NP-7243, the failure modes and effects analysis (FMEA) for Rosemount differential pressure transmitters and pressure transmitters states, "For transmitters without the variable damping feature, no electronic failure modes were found that could affect the sensor response time." Therefore, for transmitters without variable damping, response time testing is not required following replacement of the electronics.

(b) For transmitters and switches that use capillary tubes, capillary tube testing shall be performed after-initial installation and after any maintenance or modification activity that could damage the lines. GGNS currently does not utilize any transmitters or switches that use capillary tubes in any application that requires response time testing. Therefore, this recommendation is not currently applicable to GGNS.

Applicable calibration procedures will be revised as necessary to include steps to input a fast ramp or step change to system components during calibrations to verify that the response of the transmitter to the input change is prompt. The expectation is that a technician will detect a sluggish response before response time exceeds approximately 5 seconds. After approval of this request, the applicable calibration procedures will be revised as necessary prior to the next performance of the procedure or discontinuance of the present response time testing method.

Applicable calibration procedures will be revised to assure that technicians monitor for response time degradation during the performance of calibrations. After approval of this request, the applicable calibration procedures will be revised as necessary prior to the next performance of the procedure or discontinuance of the present response time testing method. Prior to implementing this request, technicians will be appropriately trained to ensure they are aware of the consequences of instrument response time degradation. Operators routinely monitor plant parameters and implement the site corrective action program if instrumentation does not perform as expected.

Surveillance testing procedures currently ensure calibrations are being performed in a manner that allows simultaneous monitoring of both the input and output response of units under test. As stated above, technicians will verify that the response of the transmitter to an input change is prompt. The expectation is that a technician will detect a sluggish response before response time exceeds approximately 5 seconds. EOI's compliance with the guidelines of Supplement 1 to NRCB 90-01 was reviewed and documented in a safety evaluation transmitted to EOI by NRC letter dated February 16, 1994 (reference letter GNRI-94/00041). The NRC's evaluation concluded that EOI's responses to the NRCB 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," and Supplement 1 conformed to the Requested Actions of NRCB 90-01 Supplement 1.

As stated above, the current components affected by this request are limited to Rosemount transmitters models 1152 and 1153, and Rosemount trip units models 510DU and 710DU. EOI has reviewed the vendor recommendations for these devices and confirmed that they do not contain recommendations for periodic response time testing.

JUSTIFICATION:

NO SIGNIFICANT HAZARDS CONSIDERATION:

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 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.

Entergy Operations, Inc. (EOI) has evaluated the no significant hazards consideration in its request for a license amendment. In accordance with 10CFR50.91(a), EOI is providing the following analysis of the proposed amendment against the three standards in 10CFR50.92(c):

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

   The purpose of the proposed Technical Specification (TS) change is to eliminate response time testing (RTT) requirements for selected components in the Reactor Protection System (RPS), Primary Containment and Drywell Isolation Instrumentation, and Emergency Core Cooling System (ECCS) actuation instrumentation. The Boiling Water Reactor Owners' Group (BWROG) has completed an evaluation which demonstrates that response time testing is redundant to the other TS-required testing. These other tests, in conjunction with actions taken in response to NRC Bulletin 90-01, "Loss of Fill-Oil in Transmitters Manufactured by Rosemount," and Supplement 1, are sufficient to identify failure modes or degradations in instrument response time and ensure operation of the associated systems within acceptable limits. There are no known failure modes that can be detected by response time testing that cannot also be detected by the other TS-required testing. This evaluation was documented in NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," October 1995. EOI has confirmed the applicability of this evaluation to Grand Gulf Nuclear Power Station (GGNS). In addition, EOI will complete the actions identified in the NRC staffs Safety Evaluation of NEDO-32291-A.

   Elimination of Emergency Core Cooling System (ECCS) RTT during MODES 4 and 5 is acceptable since there are no design basis accidents in MODES 4 and 5 for which the ECCS High Pressure Core Spray (HPCS) system is required to initiate within a specified period of time. The requirement to maintain Emergency Core Cooling Systems (ECCS) OPERABLE during MODES 4 and 5 is preserved in the affected Technical Specification. The ECCS RTT required by SR 3.5.1.8 (applicable during MODES 1, 2, and 3) is adequate to identify any operability problems with the ECCS HPCS system. In addition, during MODES 4 and 5, the probability and consequences of accidents are reduced due to the pressure and temperature limitations of these MODES.

   Because of the continued application of other TS-required tests such as channel calibrations, channel checks, channel functional tests, and logic system functional tests, the response time of

these systems will be maintained within the acceptance limits assumed in plant safety analyses and required for successful mitigation of an initiating event. The proposed changes do not affect the capability of the associated systems to perform their intended function within their required response time, nor do the proposed changes themselves affect the operation of any equipment.

As a result, EOI has concluded that the proposed changes do not involve a significant increase in the probability or the consequences of an accident previously evaluated.

2. This change would not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed changes only apply to the testing requirements for the components identified above and do not result in any physical change to these or other components or their operation. As a result, no new failure modes are introduced. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. This change would not involve a significant reduction in a margin of safety.

The current TS-required response times are based on the minimum allowable values assumed in the plant safety analyses. These analyses conservatively establish the margin of safety. As described above, the proposed changes do not affect the capability of the associated systems to perform their intended function within the allowed response time used as the basis for the plant safety analyses. The potential failure modes for the components within the scope of this request were evaluated for impact on instrument response time. This evaluation confirmed that, with the exception of loss of fill-oil of Rosemount transmitters, the remaining TS-required testing is sufficient to identify failure modes or degradations in instrument response times and ensure operation of the instrumentation within the scope of this request is within acceptable limits. The actions taken in response to NRC Bulletin 90-01 and Supplement 1 are adequate to identify loss of fill-oil failures of Rosemount transmitters. As a result, it has been concluded that plant and system response to an initiating event will remain in compliance with the assumptions of the safety analysis. Elimination of RTT for ECCS HPCS system in MODES 4 and 5 does not reduce the margin of safety since there are no design basis events in MODES 4 and 5 requiring this system to respond in specified period of time from onset of the event. Response time testing required by SR 3.5.1.8 (applicable during MODES 1, 2, and 3) is adequate to identify any equipment or operability concerns.

Further, although not explicitly evaluated, the proposed changes will provide an improvement to plant safety and operation by reducing the time safety systems are unavailable, reducing the potential for inadvertent safety system actuation, reducing plant shutdown risk, limiting radiation exposure to plant personnel, and eliminating the diversion of key personnel resources to conduct unnecessary testing. Therefore, EOI has concluded that this request will result in an overall increase in the margin of safety.

Based on the above evaluation, in accordance with 10CFR50.92(c), Entergy Operations, Inc. has concluded that operation in accordance with the proposed amendment involves no significant hazards considerations.