



ENTERGY

Entergy Operations, Inc.

PO Box 758

Port Gibson, MS 39150

Tel 601 437-6408

W. T. Cottle

Vice President

Operations

Grand Gulf Nuclear Station

June 26, 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
Extension of Instrumentation Surveillance Intervals and
Allowed Outage Times
Proposed Amendment to the Operating License (PCOL-91/12)

- References:
- 1) GE Topical Report NEDC-30936P-A, "BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 1", December 1988
 - 2) GE Topical Report NEDC-30936P-A, "Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 2", December 1988
 - 3) GE Topical Report NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation", October 1988
 - 4) GE Topical Report NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation", March 1989
 - 5) GE Topical Report NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation", July 1990
 - 6) Letter, A. C. Thadani (NRR) to D. N. Grace (BWROG), "General Electric Company (GE) Topical Report NEDC-30936P, 'BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation), Part 1'", dated December 9, 1988

G9105101/SNLICFLR - 1

9107050139 910626
PDR ADOCK 05000416
P PDR

AP01

- 7) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG),
"General Electric Company (GE) Topical Report
NEDC-30936P, 'BWR Owners Group Technical Specification
Improvement Methodology (With Demonstration for BWR ECCS
Actuation Instrumentation) Part 2'", dated
December 9, 1988
- 8) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG),
"General Electric Company (GE) Topical Report
NEDC-30851P, Supplement 1, 'Technical Specification
Improvement Analysis for BWR Control Rod Block
Instrumentation'", dated September 22, 1988
- 9) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG),
"General Electric Company (GE) Topical Report
NEDC-30851P, Supplement 2, 'Technical Specification
Improvement Analysis for BWR Isolation Instrumentation
Common to RPS and ECCS Instrumentation'", dated
January 6, 1989
- 10) Letter, C. E. Rossi (NRR) to S. D. Floyd (BWROG),
"General Electric Company (GE) Topical Report
NEDC-31677P, 'Technical Specification Improvement
Analysis for BWR Isolation Actuation Instrumentation'",
dated June 18, 1990

GNRO-91/00083

Gentlemen:

Entergy Operations, Inc., as encouraged by the NRC in References 6 through 10, is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License. The proposed GGNS Technical Specification (TS) amendment consists of changes to selected TS instrumentation surveillance test intervals and allowed outage times. These TS changes are based upon General Electric Company (GE) Topical Reports (References 1 through 5) previously reviewed and approved generically by the NRC (References 6 through 10).

Attachment 2 of this letter provides a detailed description of the proposed TS changes and justification for the changes. Attachment 2 also details the basis for the Entergy Operations, Inc. determination that the proposed amendment involves no significant hazards considerations based on the guidelines presented in 10CFR50.92.

The affected TS pages marked up indicating the proposed changes are included as Attachment 3.

June 26, 1991
GNRO-91/00083
Page 3 of 5

GE report RE-027, dated December 1986 is submitted as Attachments 4 and 5 to support the proposed TS changes. This document contains information which GE considers confidential and proprietary. Consequently, it is requested that this report (Attachments 4 and 5 to this letter) be withheld from public disclosure in accordance with 10CFR2.790. An executed affidavit by D. J. Robare of GE is included as part of Attachments 4 and 5 in support of this request.

Attachment 5 is an addendum documenting changes in the plant specific model evaluated by GE in report RE-027.

Attachment 6 provides trip unit drift data to support the justification contained in Attachment 2 for the proposed TS changes.

In accordance with the provisions of 10CFR50.4, the signed original of the requested amendment is enclosed. This amendment request has been reviewed and accepted by the Plant Safety Review Committee and the Safety Review Committee.

The proposed changes to the TS conform with the guidance provided by the NRC in References 6 through 10. Therefore, Entergy Operations, Inc. is requesting expeditious review of this submittal in accordance with References 6 through 10.

Yours truly,

W T C

WTC/PRS/be

attachments: 1. Affirmation per 10CFR50.30
2. GGNS PCOL-91/12
3. Mark-up of Affected Technical Specification Pages
4. GE Report RE-027 (Proprietary)
5. Addendum to GE Report RE-027 (Proprietary)
6. GGNS Trip Unit Drift Data in Support of PCOL-91/12
cc: (See Next Page)

June 26, 1991
GNRO-91/00083
Page 4 of 5

cc:

Mr. D. C. Hintz (w/a)
Mr. J. L. Mathis (w/1,2,3,6)
Mr. R. B. McGehee (w/1,2,3,6)
Mr. N. S. Reynolds (w/1,2,3,6)
Mr. H. L. Thomas (w/o)
Mr. F. W. Titus (w/a)

Mr. Stewart D. Ebnetter (w/1,2,3,6)
Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30323

Mr. L. L. Kintner, Project Manager (w/1,2,3,6)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 11D21
Washington, D.C. 20555

Dr. Alton B. Cobb (w/1,2,3,6)
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

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 25 day of June, 1991.

(SEAL)

Patricia McLaughlin
Notary Public

My commission expires:

My Commission Expires July 1, 1993

GGNS PCOL 91/12

A. SUBJECT

1. NL-91/10 Extension of Instrumentation Surveillance Intervals and Allowed Outage Time.
2. Affected Technical Specifications:
 - a. Control Rod Operability, Surveillance 4.1.3.1.4 - Page 3/4 1-5
 - b. Isolation Actuation Instrumentation, Limiting Condition for Operation, 3.3.2 - Page 3/4 3-9
 - c. Isolation Actuation Instrumentation, Table 3.3.2-1 - Pages 3/4 3-10, 3-11, 3-13, 3-14 and 3-15
 - d. Isolation Actuation Instrumentation Surveillance Requirements, Table 4.3.2.1-1 - Pages 3/4 3-22 through 3/4 3-26
 - e. Isolation Actuation Instrumentation Bases, 3/4.3.2 - Page B 3/4 3-1
 - f. Emergency Core Cooling System Actuation Instrumentation, Table 3.3.3-1 - Pages 3/4 3-29 and 3-30
 - g. Emergency Core Cooling System Actuation Instrumentation Surveillance Requirements, Table 4.3.3.1-1 - Pages 3/4 3-34, 3-34a, 3-35, and 3-36
 - h. Emergency Core Cooling System Actuation Instrumentation Bases, 3/4.3.3 - Page B 3/4 3-2
 - i. Control Rod Block Instrumentation Surveillance Requirements, Table 4.3.6-1 - Page 3/4 3-56
 - j. Control Rod Block Instrumentation Bases, 3/4.3.6 - Page B 3/4 3-3a

B. DISCUSSION

1. This license amendment request proposes to revise the Grand Gulf Nuclear Station (GGNS) Technical Specifications (TS) 3/4.3.2, 3/4.3.3, 3/4.3.6 and associated Bases to increase the surveillance test intervals (STIs) and allowed outage times (AOTs). The proposed TS changes have been justified using probabilistic analytical methods and are based on BWR Owners' Group (BWROG), of which Entergy Operations, Inc. is a member, sponsored General Electric Company (GE) generic Topical Reports (References 1 through 5) which have received NRC review and approval (References 6 through 10). This proposed amendment applies those generic Topical Reports to GGNS.

2. Topical Report, "BWR Owners Group Response to NRC Generic Letter 83-28, Item 4.5.3," (Reference 11) provided justification for the acceptability of current Reactor Protection System (RPS) STIs. In addition, Reference 11 established a basis for extending STIs and AOTs for RPS based on reliability analyses which estimate RPS failure frequency.
3. In response to growing concerns over the adverse impact of current testing and maintenance requirements on safety and plant operation, particularly as related to instrumentation systems, the BWROG initiated a program to develop a justification to be used to revise instrumentation TS. Operating plants have experienced many inadvertent reactor trips and safeguards actuations during performance of instrumentation surveillances, causing unnecessary transients and challenges of safety systems. Significant time and effort on the part of operating staffs have been devoted to performing, reviewing, documenting and tracking the various surveillance activities, which in many instances seemed unwarranted based on the high reliability of the equipment. Therefore, significant benefits for operating plants appeared to be achievable through revision of instrumentation test and maintenance requirements.
4. Consequently, the analyses of Reference 11 were further developed in other Topical Reports (References 1 through 5 and 12) to provide justification for extending TS STIs and AOTs for the RPS, Emergency Core Cooling Systems (ECCS), Control Rod Block, and Isolation actuation instrumentation. References 1 through 5 and 12 also included proposed TS changes to facilitate implementation of the analyses results. References 1 through 5 and 12 were submitted to the NRC by the BWROG and subsequently approved as detailed in NRC Safety Evaluation Reports (SERs) (References 6 through 10 and 13). These SERs describe the acceptability of both the analyses and the proposed TS changes provided to the NRC. In addition, References 6 through 10 and 13 provided criteria for plant specific implementation of the generically approved TS changes. GGNS compliance with these criteria is discussed in the Justification section of this Attachment.
5. The NRC has already reviewed and approved the TS changes applicable to the RPS for GGNS in Amendment No. 67 (References 14 through 16).
6. This amendment request proposes TS changes to the actuation instrumentation supporting the ECCS, Control Block function and Isolation function. These changes are specifically discussed and designated in the TS mark ups of References 1 through 5 and therefore are not further discussed here.

7. The proposed TS changes to TS Section 3/4.3.3 on page 3/4 3-30 provide a 24 hour AOT for ECCS instrumentation which is consistent with the analysis in Reference 2. The proposed wording differs from the TS mark up of Reference 2 which implies an allowance of 24 hours before taking the action of TS Table 3.3.3-2. Reference 18 provides a clarification on the intent of the Reference 2 TS mark up and also provides revised wording. The proposed TS change is consistent with Reference 18.
8. The TS pages affected by this proposed amendment are included as Attachment 3 and are marked up to reflect the proposed changes.

C. JUSTIFICATION

1. The effect on safety of the proposed extensions to the STIs and ACTs of the actuation instrumentation supporting the ECCS, the Control Rod Block function (CRBF), and the Isolation instrumentation has been addressed in References 1 through 5. Further, the NRC has detailed their acceptance of the analyses and conclusions of References 1 through 5 in SERs (References 6 through 10). The SERs conclude that implementation of the TS changes proposed in References 1 through 5 would provide an overall enhancement to plant safety and that the proposed changes to TS are acceptable subject to the Licensee documenting 1) plant-specific applicability and 2) that instrument drift is bounded by the generic analysis assumptions. The NRC also issued Reference 17 which provided clarification for the SERs condition concerning instrument drift. These acceptance conditions are addressed below for each generic Topical Report.

NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation" and NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation"

2. NEDC-30851P-A, Supplement 2 provides a basis for extending STIs and AOTs for isolation actuation instrumentation common to RPS and ECCS instrumentation. To gain the full safety benefits of the revised RPS and ECCS instrumentation requirements corresponding STI and AOT extensions for the common isolation actuation instrumentation is necessary. The necessary generic analysis was performed by GE for the BWROG and resulted in this Topical Report. The NRC Staff has reviewed and approved this Topical Report in Reference 9.
3. NEDC-31677P-A provides a basis for extending STIs and AOTs for isolation actuation instrumentation not covered by NEDC-30851P-A, Supplement 2. The necessary generic analysis was performed by GE for the BWROG and resulted in this Topical Report. The NRC Staff has reviewed and approved this Topical Report in Reference 10.

4. The technical basis for the isolation actuation instrumentation TS improvements is based on the reliability approach established in support of changes proposed by the BWROG for RPS, ECCS, Reactor Core Isolation Cooling (RCIC) and Rod Block Instrumentation. In application of the BWROG methodology, the isolation actuation instrumentation fault trees were developed to model the isolation system of each BWR plant line. The affect of the proposed changes in STI and AOTs on the isolation signal could then be compared to the availability of the isolation signal without the proposed changes in the fault tree. The net change in the failure of the system isolation function was then used to determine the acceptability of the proposed changes. As shown in Table 2 of Reference 4 for BWR 5/6 relay plants (ECCS and RCIC instrumentation), the increase in probability of isolation failure due to an STI increase to 92 days is negligible. Further, Reference 4 Section 3.5 provides a sensitivity analysis showing that an AOT increase to 24 hours has a less than 2% effect on the probability of failure of the isolation function given a demand. For Actuation Instrumentation not used for ECCS and RCIC, Reference 5 stated that STI and AOT changes were assessed to be acceptable if the calculated change in isolation failure frequency was less than $1\text{E-}07/\text{year}$ on an absolute basis or 10% on a relative basis. As stated in References 9 and 10, the Staff found the analysis an acceptable basis for extending the STIs and AOTs of the subject instrumentation. Because of more restrictive AOT requirements on RPS instrumentation established in Reference 12, the test and repair AOTs for isolation instrumentation common to RPS is constrained to 6 and 12 hours respectively. AOTs established in Reference 2 for ECCS equipment are 6 and 24 hours (for test and repair AOTs) which are the values proposed by this submittal for th isolation actuation instrumentation. Where an isolation actuation instrument is common to both RPS and the isolation actuation instrumentation, the more restrictive AOT is proposed.

5. Entergy Operations, Inc. has applied the generic analyses to GGNS completing the conditions for plant specific application of the TS changes contained in the NRC's SERs (References 9 and 10). Two conditions must be met:
 - a. Confirm the applicability of the generic analyses to the plant.

NEDC-30851P-A, Supplement 2, Appendix A and NEDC-31677P-A, Appendix A identify GGNS as a participating plant in the development of the generic analyses. Entergy Operations, Inc. confirms that the generic analyses apply to GGNS.

References 4 and 5 provide bounding analyses of the impact of the proposed TS changes for isolation actuation instrumentation. Section 5.5 of Reference 5 provides verification that the results of the generic analyses of the various product lines are applicable to the individual plant TS requirements. This evaluation included a comparison of isolation actuation instrumentation STIs and calibration intervals given in the current plant-specific TS to those evaluated for the four product lines. Identified differences were then evaluated to verify that the product line analyses envelope these differences.

Appendix C-2 of Reference 5 provides a matrix listing of STIs and calibration intervals given in current TS of individual BWR5/6 plants included in this study. The first column lists the isolation trips for GGNS, the plant that was used in the generic analyses. The succeeding columns list the isolation trips for the remaining plants in the product line. Since GGNS was used as the generic model plant, the generic analyses of NEDC-30851P-A and NEDC-31677P-A are applicable to GGNS and provide an adequate basis for TS changes to extend the STIs and AOTs for GGNS isolation actuation instrumentation.

- b. Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint calculation methodology. (For additional information on this issue, see Reference 17).

The isolation actuation instrumentation channel drift characteristics are considered when the TS trip setpoints are established. The setpoint calculations for GGNS conservatively assume that the channel setpoint drift occurs without correction during the entire 18-month channel calibration interval. Extension of the functional test intervals, as proposed herein, will therefore have no effect on the isolation actuation instrumentation setpoint calculations. The GGNS setpoint methodology thus continues to properly account for instrument drift.

Additionally, further information concerning the drift experience for Rosemount trip units at GGNS is included in Attachment 6 of this submittal. Most of the instrument channels covered by this proposal utilize Rosemount trip units. This information supports the conclusion that instrument drift is not a significant concern in extending the functional test interval from monthly to quarterly.

6. Enclosure 3 to Reference 9 provided an acceptable format for TS changes to implement the approved STI extensions justified in NEDC-30851P-A, Supplement 2. The TS pages in Attachment 3 of this submittal for TS 3/4.3.2 include changes consistent with this format as subsequently modified by the changes for NEDC-31677P-A, as approved in Reference 10.

NEDC-30936P-A, "BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation), Parts 1 and 2"

7. The proposed changes implement the TS revisions supported by the analyses contained in these Topical Reports. Part 1 presented the methodology for extension of STIs and AOTs for ECCS TS requirements and application of the methodology to a single functional unit as a demonstration case. The Staff has reviewed and approved Part 1 in Reference 6. Plant specific application of the methodology was indicated in this SER to be dependent upon the completion of more detailed analyses to account for interrelations between the various ECCS actuation instrumentation functional units. Part 2 of the Topical Report presented this further analysis. The Staff has reviewed and approved Part 2 in Reference 7.
8. The proposed changes optimize STIs for improved ECCS reliability and increase AOTs. As shown in Reference 2 the increase in AOTs has negligible impact on ECCS failure frequency yet allows more time for repair and decreases the potential for unnecessary plant shutdown. Further, the Reference 2 evaluation of the effect of other contributing factors from these changes indicates that these changes represent a net improvement in overall plant safety. Briefly the contributing factors include:

- o Avoidance of inadvertent scrams
- o Decreased equipment degradation due to excessive testing
- o Decreased diversion of plant personnel
- o Avoid inadequate allowance for repair time and the concomitant risk of working to overly restrictive deadlines
- o Avoidance of test caused failures
- o Avoidance of shutdown (and the inherent risk in plant shutdowns) due to restrictive limiting conditions of operation

Additionally as noted in Reference 1, incorporation of these changes represents a net cost savings of over \$40,000 per plant per year.

9. Entergy Operations, Inc. as a member of the BWROG endorses the analysis submitted in References 1 and 2. Reference 1 provided BWR reliability models and methodology with the demonstration case to perform plant specific evaluations of TS STIs and AOTs for ECCS actuation instrumentation. The evaluation utilized reliability data, fault trees, accident sequences and computer analysis of system unavailabilities to determine changes in system unavailability due to changes in ECCS STI and AOT intervals. Since ECCS is used to inject into the core for cooling when feedwater is lost, system unavailability challenges core cooling and might lead to core damage. Core damage frequency and plant safety are then bounded in the analysis by water injection function unavailability. Hence insignificant changes in water injection unavailability due to ECCS STI and AOT interval changes would have insignificant impact on core damage frequency and plant safety. As described in Reference 1 several baseline and scoping cases were used in concert with computer codes to determine the effect of STI and AOT changes on system unavailability. Where the system unavailability change was found to be less than 1 percent the TS change was acceptable. This methodology was utilized in Reference 1 for the single demonstration case and found acceptable by the Staff in Reference 6.
10. Reference 2, however, had to include a summation of changes and resultant impact on injection availability and account for different plant configurations. The Reference 1 methodology remained the same but several modifications were made to streamline the analysis, account for the interaction of system changes, and account for different plant configurations. As a result Reference 2 justified and used an acceptance criterion of 4% change in injection unavailability or an absolute value of 1.0×10^{-6} per year as an acceptance criterion. Reference 2 concluded that despite the less restrictive acceptance criterion resulting from the modified methodology, the increase in unavailability was insignificant and bounded by the net increase in safety. Additionally, because the RCIC and ECCS have instrumentation in common the effect of increased STI and AOT periods of the common instrumentation on RCIC availability was accounted for in the Reference 2 evaluation. This change in acceptance criterion and the Reference 2 evaluation were found acceptable by the Staff in Reference 7.
11. Entergy Operations, Inc. has applied the generic analysis completed by the BWROG to GGNS by completing the required plant specific analysis. As stated in the NRC's SER (Reference 7) for NEDC-30936P-A, Part 2, two issues must be addressed to justify the applicability of the generic analysis to individual plants when specific facility TS are considered:
 - a. Confirm the applicability of the generic analyses to the plant.

In GE Report RE-027, dated December 1986, Reference 19 (Attachment 4 of this submittal), the generic study completed in these Topical Reports modifying the ECCS actuation instrumentation TS requirements was extended to GGNS. The GE report utilizes the procedures of NEDC-30936P-A, Part 2, Appendix F to identify and evaluate the differences between the GGNS ECCS configuration and the ECCS configuration used in the generic analysis. Attachment 5 of this submittal identifies additional changes which have occurred since the plant specific analysis was originally completed and their effect upon the GGNS plant specific analysis. The results indicate that while the ECCS configuration for GGNS has several differences compared to the generic configuration, the differences and their impact do not affect the applicability of the TS changes developed by the generic efforts of these Topical Reports. Therefore, the conclusions reached in NEDC-30936P-A, Parts 1 and 2 apply to GGNS and the plant specific changes contained in this request are bounded by both the generic analysis and the NRC's SERs.

- b. Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint calculation methodology. (For additional information on this issue, see Reference 17).

The ECCS actuation instrumentation channel drift characteristics are considered when the TS trip setpoints are established. The setpoint calculations for GGNS conservatively assume that the channel setpoint drift occurs without correction during the entire 18-month channel calibration interval. Extension of the functional test intervals, as proposed herein, will therefore have no effect on the ECCS actuation instrumentation setpoint calculations. The GGNS setpoint methodology thus continues to properly account for instrument drift.

Additionally, further information concerning the drift experience for Rosemount trip units at GGNS is included in Attachment 6 of this submittal. Most of the instrument channels covered by this proposal utilize Rosemount trip units. This information supports the conclusion that instrument drift is not a significant concern in extending the functional test interval from monthly to quarterly.

12. As noted previously, a TS change is also proposed which is not specifically referenced in the NRC SERs (References 6 through 10). The following discussion addresses the acceptability of this proposed TS change.

Appendix A of NEDC-30936P-A, Part 2 provided guidance for TS changes covered by the Topical Report. These changes are those implementing the approved extensions of STIs and AOTs contained in Table 2 of the NRC's SER of NEDC-30936P-A, Part 2. GE subsequently provided participating BWR utilities with clarifications concerning the implementation of these TS changes. GE also provided these clarifications to the NRC in Reference 18.

The item of interest in Reference 18 provided clarification on the application of the extended repair AOT. In NEDC-30936P-A, Part 2, Appendix A, the 24 hour time period was included as a change to Action b of TS 3/4.3.3. GE subsequently indicated that this could inappropriately delay action requirements not covered by the analysis. Instead, the changes need to be made to the Action requirements for each applicable functional unit which are part of TS Table 3.3.3-1.

The intent of the change is to preclude the allowance of 24 hours before taking the Action specified in TS Table 3.3.3-1. Action b of TS 3/4.3.3., as written in Reference 2, implies a 24 hour AOT before taking any action in TS Table 3.3.3-1. The change GGNS has proposed accurately reflects the intent of the Reference 2 analysis. This change therefore is necessary to obtain the overall enhancement to safety that is possible by extending ECCS instrumentation STIs and AOTs.

13. The format of the proposed changes for TS 3/4.3.3 is consistent with the format included in the NRC's SER (Reference 7) for NEDC-30936P-A, Part 2.

NEDC-308151P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation"

14. This Topical Report provides a basis for extending STIs for the CRBF instrumentation. The CRBF shares common instrumentation with the RPS. To gain the full safety benefits of the RPS instrumentation improvements of Reference 12 corresponding STI extensions for the CRBF are necessary. The necessary generic analysis was performed by GE for the BWROG and resulted in this Topical Report. The NRC Staff has reviewed and approved this Topical Report in Reference 8.

15. Entergy Operations, Inc. has applied the generic analysis to GGNS by completing the conditions for plant specific application of the CRBF instrumentation TS changes contained in Table 1 of the NRC's SER. Two conditions must be met:

- a. Confirm the applicability of the generic analyses to the plant.

NEDC-30851P-A, Supplement 1, Appendix B identifies GGNS as a participating plant in the development of the generic analysis. Entergy Operations, Inc. has reviewed the assumptions and design details contained in NEDC-30851P-A, Supplement 1 and concluded that the report is applicable to and bounds the design of GGNS. Entergy Operations, Inc. therefore confirms that the generic analysis applies to GGNS.

- b. Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint calculation methodology. (For additional information on this issue, see Reference 17).

The CRBF actuation instrumentation channel drift characteristics are considered when the TS trip setpoints are established. The setpoint calculations for GGNS conservatively assume that the channel setpoint drift occurs without correction during the entire 18-month channel calibration interval. Extension of the functional test intervals, as proposed herein, will therefore have no effect on the CRBF actuation instrumentation setpoint calculations. The GGNS setpoint methodology thus continues to properly account for instrument drift.

16. Enclosure 3 to the NRC's SER (Reference 8) provided an acceptable format for TS changes to implement the approved STI extensions justified in NEDC-30851P-A, Supplement 1. The TS pages in Attachment 3 of this submittal for TS 3/4.3.6 include changes in accordance with this format.

SUMMARY

17. References 6 through 10 provided TS changes based on Staff review of the Topical Reports (References 1 through 5). Entergy Operations, Inc. has proposed TS changes consistent with those previously approved and specifically designated in References 6 through 10. In addition, a change is proposed which is not explicitly referenced in the NRC SERs, but is covered by the analyses detailed in Reference 2 and is acceptable as discussed above.

In conclusion, the NRC criteria for demonstrating the applicability and acceptability of all proposed TS changes has been shown to be met, as detailed above. Entergy Operations, Inc. therefore concludes that the TS changes proposed will

minimize unnecessary testing and relax excessively restrictive AOTs, and will provide an overall enhancement to plant safety.

D. NO SIGNIFICANT HAZARDS CONSIDERATIONS

1. Entergy Operations, Inc. is proposing that the GGKS TS be amended to extend surveillance test intervals and allowed outage times for the actuation instrumentation supporting the ECCS, CRBF and Isolation instrumentation. The proposed TS changes minimize unnecessary testing and remove excessively restrictive allowed outage times that could potentially degrade overall plant safety and availability.
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:
 - a. No significant increase in the probability or consequences of an accident previously evaluated results from this change.

The proposed TS changes increase the STIs and AOTs for actuation instrumentation supporting ECCS, the CRBF, and isolation functions. There are no physical changes in any of the affected systems themselves. Regarding the probability of malfunction of equipment, Topical Reports prepared by GE showed that for the ECCS, there is a small increase in the unavailability of the water injection function which may result in a slight increase in the consequences of previously evaluated accidents which rely upon ECCS for mitigation. This increase in unavailability was judged acceptable by GE. The NRC, in its review of the Topical Reports (References 1 through 5), concurred with this conclusion. The changes proposed are consistent with these SERs (References 6 through 10) with one addition. The additional change is bounded by the analyses of Reference 2 as detailed in this amendment request.

Further, given the resulting reduction in test related plant scrams and test induced wearout of equipment, the net effect of these changes represent a net improvement to overall plant safety.

Therefore, there is no increase in the probability or consequences of a previously evaluated accident due to the proposed changes.

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

Neither the design nor the functional operation of the affected instrumentation is being changed. The proposed changes only involve a change in the STIs and AOTs. These changes will not impact the function of monitoring system variables over their anticipated ranges for normal operation, anticipated operational occurrences, or accident conditions.

As stated in References 1 through 5, reliability is not degraded by the proposed changes.

The proposed changes do not introduce any new modes of plant operation, make any physical changes, or alter any operational setpoints.

Therefore, the possibility of a new or different kind of accident from any previously evaluated is not created.

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

The proposed changes do not alter the manner in which safety limits, limiting safety system settings, or limiting conditions for operation are determined. The impact of reduced testing, other than as addressed above, is to allow a longer time interval over which instrument uncertainties (e.g., drift) may act. The current affected instrumentation setpoints already account for the effects of drift and include a sufficient allowance to tolerate extensions of the STIs. Implementation of the proposed changes is expected to result in an overall improvement in safety, as follows:

- i. Reduced testing will result in fewer inadvertent reactor trips, less frequent actuation of ESF components, and less frequent distraction of operations personnel.
- ii. Improvements in the effectiveness of the operating staff in monitoring and controlling plant operation will be realized. This is due to less frequent distraction of the operators to attend to instrumentation testing.
- iii. Longer repair times associated with increased AOTs will lead to higher quality repairs and improved reliability.

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

E. REFERENCES

- 1) GE Topical Report NEDC-30936P-A, "BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 1", December 1988
- 2) GE Topical Report NEDC-30936P-A, "Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 2", December 1988
- 3) GE Topical Report NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation", October 1988
- 4) GE Topical Report NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation", March 1989
- 5) GE Topical Report NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation", July 1990
- 6) Letter, A. C. Thadani (NRR) to D. N. Grace (BWROG), "General Electric Company (GE) Topical Report NEDC-30936P, 'BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)', Part 1", dated December 9, 1988
- 7) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG), "General Electric Company (GE) Topical Report NEDC-30936P, 'BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 2'", dated December 9, 1988
- 8) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG), "General Electric Company (GE) Topical Report NEDC-30851P, Supplement 1, 'Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation'", dated September 22, 1988
- 9) Letter, C. E. Rossi (NRR) to D. N. Grace (BWROG), "General Electric Company (GE) Topical Report NEDC-30851P, Supplement 2, 'Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation'", dated January 6, 1989
- 10) Letter, C. E. Rossi (NRR) to S. D. Floyd (BWROG), "General Electric Company (GE) Topical Report NEDC-31677P, 'Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation'", dated June 18, 1990

- 11) GE Topical Report NEDC-30844P-A, "BWR Owners Group Response to NRC Generic Letter 83-25, Item 4.5.3", March 1988
- 12) GE Topical Report NEDC-30851P-A, "BWR Owners Group Technical Specification Improvement Analyses for BWR Reactor Protection System", March 1988
- 13) Letter, A. C. Thadani (NRR) to T. A. Pickens (BWROG), "Review of BWR Owners Group Reports NEDC-30844P and NEDC-30851P on Justification for an Extension of On-Line Test Intervals and Allowable Out-of-Service Time for BWR Reactor Protection Systems", dated July 15, 1987
- 14) Letter, O. D. Kingsley, Jr. (GGNS) to USNRC, "Extension of RPS Instrumentation Surveillance Intervals and Allowed Outage Times (PCOL-88/09)", dated June 30, 1988
- 15) Letter, W. T. Cottle (GGNS) to USNRC, "Extension of RRS Instrumentation Surveillance Intervals and Allowed Outage Times - Supplemental Information for PCOL-88/09", dated February 19, 1990
- 16) Letter, L. L. Kintner (NRR) to W. T. Cottle (GGNS), "Issuance of Amendment No. 67 to Facility Operating License No. NPF-29 - Grand Gulf Nuclear Station, Unit 1, Regarding Reactor Protection System (TAC No. 68692)", dated April 24, 1990
- 17) Letter, C. E. Rossi (NRR) to R. F. Janacek (BWROG), "Staff Guidance For Licensee Determination that the Drift Characteristics for Instrumentation Used in RPS Channels are Bounded by NEDC-30851P Assumptions When the Functional Test Interval is Extended from Monthly to Quarterly", dated April 27, 1988
- 18) Letter, W. P. Sullivan and J. F. Klapproth (GE) to M. L. Wohl (USNRC), "Clarification of Technical Specification Changes Given in ECCS Actuation Instrumentation Analysis", dated March 22, 1990
- 19) GE Report RE-027, "Technical Specification Improvement Analysis for the Emergency Core Cooling System Actuation Instrumentation for Grand Gulf Nuclear Generating Station, Units 1 and 2", December 1986