



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 97 TO FACILITY OPERATING LICENSE NO. NPF-29  
ENERGY OPERATIONS, INC., ET AL.  
GRAND GULF NUCLEAR STATION, UNIT 1  
DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated June 26, 1991, as supplemented April 22, 1992, Entergy Operations, Inc. (the licensee), submitted a request for changes to the Grand Gulf Nuclear Station (GGNS), Unit 1 Technical Specifications (TS). The proposed changes would extend the surveillance test intervals (STIs) and allowed outage times (AOTs) for instrumentation supporting the Reactor Protection System (RPS) and the Emergency Core Cooling System (ECCS), including instrumentation common to the Control Rod Block Function (CRBF) and the isolation instrumentation common to the RPS and the ECCS. Editorial changes would also be made so that the TS accurately reflect the intent of NEDC-30936P-A, Part 2.

These changes are based upon two BWR Owners Group (BWROG) Topical Reports:

- (1) NEDC-30851-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," dated October 1988, which provides a generic safety analysis for extension of on-line test intervals for control rod block instrumentation; and
- (2) NEDC-30851P-A, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," dated March 1989, which provides a safety analysis for extension of Surveillance Test and ECCS instrumentation.

The NRC staff reviewed NEDC-30851P-A Supplements 1 and 2 and issued Safety Evaluations (SEs) for each, dated September 22, 1988, and January 6, 1989, respectively, approving the reports and providing model TS changes.

Topical Report NEDC-31677P, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," provides the basis for proposed changes to certain TS for the isolation actuation instrumentation not common to RPS or ECCS instrumentation. The staff has reviewed NEDC-31677P and concluded that the analyses presented in NEDC-31677P are bounding and provide an adequate basis for TS changes. On June 18, 1990, the staff issued a Safety Evaluation on "Review of BWR Owners Group Report NEDC-31677P on Justification for Extension of Surveillance Test Intervals and Allowed Outage Times for BWR Isolation Instrumentation Not Common to RPS or ECCS Instrumentation."



The BWROG Topical Report NEDC-30936P-A, "Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Parts 1 and 2," dated December 1988, provided the generic justification for increased STIs and AOTs for ECCS instrumentation. On December 9, 1988, the NRC staff issued a Safety Evaluation on "Review of BWR Owners Group Report NEDC-30936P-A (Parts 1 and 2) on Justification for Extending On-Line Test Intervals and Allowable Out-of-Service Times for BWR Emergency Core Cooling System Instrumentation."

The staff's generic Safety Evaluation stated that plant-specific application of the generic results would require comparing the plant-specific design with the generic design to show that NEDC-31677P, NEDC-30851P-A, and NEDC-30936P-A are applicable and that any increase in instrument drift due to the extended STI is properly accounted for in the setpoint calculation methodology.

The licensee's June 26, 1991, submittal responded to the plant-specific condition in this generic Safety Evaluation and included supplemental data on the drift of RBS and ECCS instrumentation.

The April 22, 1992, letter provided clarifying information that did not change the initial proposed no significant hazards determination consideration.

## 2.0 EVALUATION

The NRC staff has reviewed the licensee's June 26, 1991, submittal. The proposed TS changes reflect the standard TS revisions contained in NEDC-30851P-A, NEDC-30936P-A, and NEDC-31677P. Based upon probabilistic analyses, these revisions justify the identified time-extensions by reducing the potential for (1) unnecessary plant scrams, (2) excessive equipment test cycles, and (3) diversion of personnel and resources for unnecessary testing.

As stated in the NRC's Safety Evaluations for Licensing Topical Reports, two conditions must be met to justify the applicability of the generic analysis to individual plants:

- a. The applicability of the generic analysis to the plant must be confirmed.

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.

NEDC-30851P-A, Supplement 2, and NEDC-31677P-A provide bounding analyses of the impact of the proposed TS changes for isolation actuation instrumentation. Section 5.5 of NEDC-31677P-A 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 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 encompass these differences.



Appendix C-2 of NEDC-31677P-A 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 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 extending the STIs and AOTs for GGNS isolation actuation instrumentation.

In GE Report RE-027, dated December 1986, the generic study in these Topical Reports on modifying the TS requirements for ECCS actuation instrumentation was extended to GGNS. The GE report uses 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. Additional changes have occurred since the plant-specific analysis was originally completed and their effect upon the GGNS plant-specific analysis was examined. The results indicate that, while there are several differences between the ECCS configuration for GGNS and the generic configuration, the differences do not affect the applicability of the generic analysis to GGNS. 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 Safety Evaluations.

- b. Any increase in instrument drift due to the extended STIs must be properly accounted for in the setpoint calculation methodology.

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 here proposed, will therefore have no effect on the ECCS actuation instrumentation setpoint calculations. The GGNS setpoint methodology thus continues to properly account for instrument drift.

Based on its review, the staff finds that the plant-specific conditions for applying the results of GE's Topical Reports NEDC-30851P-A, NEDC-30963P-A, and NEDC-31677P to GGNS have been met and that the proposed revisions to the TS are acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 33954). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: M. Sykes  
P. O'Connor

Date: May 20, 1992