

March 10, 1989

Docket No. 50-416

DISTRIBUTION  
See attached sheet

Mr. W. T. Cottle  
Vice President, Nuclear Operations  
System Energy Resources, Inc.  
Post Office Box 23054  
Jackson, Mississippi 39205

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE  
NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING  
SNUBBER SURVEILLANCE TESTING (TAC NO. 68980)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 56 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated July 25, 1988.

The amendment changes TS 3/4.7.4, "Snubbers," and the associated Bases by:  
(1) changing sampling plan No. 2 to eliminate the requirement to test all snubbers if the number of rejected snubbers exceeds a specified number, and  
(2) deleting sampling plan No. 3.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

Lester L. Kintner, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 56 to NPF-29
- 2. Safety Evaluation

cc w/enclosures:  
See next page

[GGNS AMEND 68980]

*CP-1*

OFC	:LA:PD21:DRPR:PM:PD21:DRPR:D:PD21:DRPR	:	:	:	:
NAME	: PAnderson : LKintner:jw: EKeeves	:	:	:	:
DATE	:3/7/89 :3/7/89 :3/7/89	:	:	:	:

OFFICIAL RECORD COPY

8903200348 890310  
PDR ADDOCK 05000416  
P PDC

*DF01*  
*11*

*88*

Mr. W. T. Cottle  
System Energy Resources, Inc.

Grand Gulf Nuclear Station (GGNS)

cc:

Mr. T. H. Cloninger  
Vice President, Nuclear Engineering  
and Support  
System Energy Resources, Inc.  
P. O. Box 23054  
Jackson, Mississippi 39205

Mr. C. R. Hutchinson  
GGNS General Manager  
System Energy Resources, Inc.  
Post Office Box 756  
Port Gibson, Mississippi 39150

Robert B. McGehee, Esquire  
Wise, Carter, Child, Steen and  
Caraway  
P. O. Box 651  
Jackson, Mississippi 39205

The Honorable William J. Guste, Jr.  
Attorney General  
Department of Justice  
State of Louisiana  
Baton Rouge, Louisiana 70804

Nicholas S. Reynolds, Esquire  
Bishop, Liberman, Cook, Purcell  
and Reynolds  
1400 L Street, N.W.  
Washington, D.C. 20005-3502

Office of the Governor  
State of Mississippi  
Jackson, Mississippi 39201

Mr. Ralph T. Lally  
Manager of Quality Assurance  
Middle South Utilities System  
Services, Inc.  
639 Loyola Avenue, 3rd Floor  
New Orleans, Louisiana 70113

Attorney General  
Gartin Building  
Jackson, Mississippi 39205

Mr. John G. Cesare  
Director, Nuclear Licensing  
System Energy Resources, Inc.  
P. O. Box 23054  
Jackson, Mississippi 39205

Mr. Jack McMillan, Director  
Division of Solid Waste Management  
Mississippi Department of Natural  
Resources  
Post Office Box 10385  
Jackson, Mississippi 39209

Mr. C. B. Hogg, Project Manager  
Bechtel Power Corporation  
P. O. Box 2166  
Houston, Texas 77252-2166

Alton B. Cobb, M.D.  
State Health Officer  
State Board of Health  
P.O. Box 1700  
Jackson, Mississippi 39205

Mr. H. O. Christensen  
Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
Route 2, Box 399  
Port Gibson, Mississippi 39150

President  
Claiborne County Board of Supervisors  
Port Gibson, Mississippi 39150

Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
101 Marietta Street  
Suite 2900  
Atlanta, Georgia 30323

AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF

Docket File

NRC PDR

Local PDR

PDII-1 Reading

G. Lainas (14E4)

E. Adensam

E. Reeves

P. Anderson

L. Kintner

OGC

D. Hagan (MNBB 3302)

E. Jordan (MNBB 3302)

B. Grimes (9A2)

T. Meeks (4) (P1-137)

W. Jones (P-130A)

E. Butcher (11F23)

ACRS (10)

GPA/PA

ARM/LFMB

cc: Licensee/Applicant Service List



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

SYSTEM ENERGY RESOURCES, INC., et al.

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56  
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that
  - A. The application for amendment by System Energy Resources, Inc., (the licensee), dated July 25, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

8903200355 890310  
PDR ADDCK 05000416  
P PDC

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 56, are hereby incorporated into this license. System Energy Resources, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*Edward A. Reeves*

Edward A. Reeves, Acting Director  
Project Directorate II-1  
Division of Reactor Projects I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 10, 1989

OFC	: LA	: PD	: DRPR	: PM	: PD	: DRPR	: OGC	: D	: PD	: DRPR	:	:
NAME	: P	: L	: K	: j	: w	: B	: E	: R	: e	: v	: e	:
DATE	: 3/7/89	: 3/7/89	: 3/7/89	: 3/7/89	: 3/7/89	: 3/7/89	: 3/9/89	:	:	:	:	:

ATTACHMENT TO LICENSE AMENDMENT NO. 56

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove

3/4 7-11  
3/4 7-14  
B 3/4 7-3

Insert

3/4 7-11  
3/4 7-14  
B 3/4 7-3

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

---

#### e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans for each type of snubber. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test period shall be implemented:

- 1) At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.4.f, an additional 5% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or
- 2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7.4-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.4.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7.4-1. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or all the snubbers of that type have been tested.

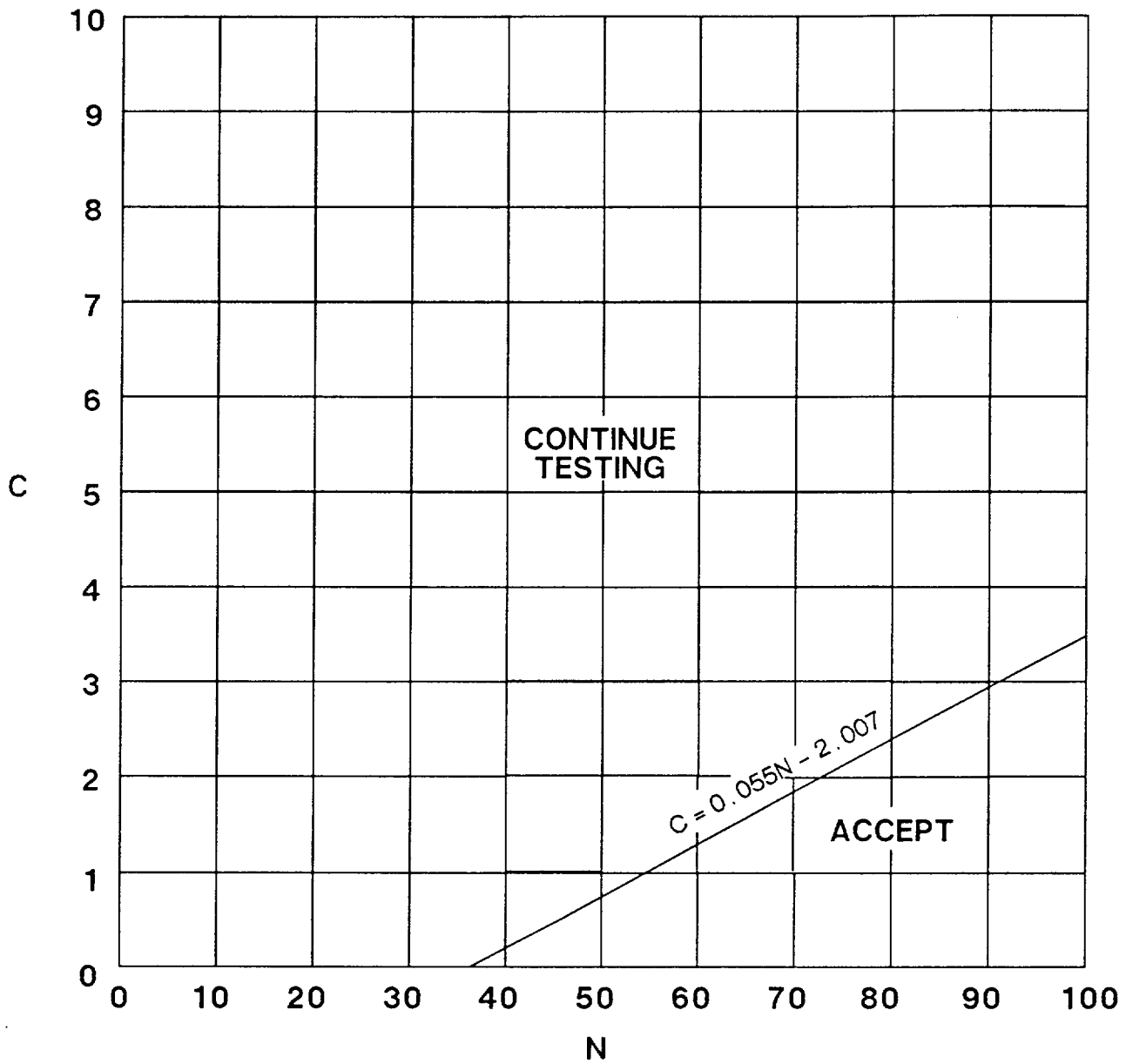


FIGURE 4.7.4-1  
 (SAMPLE PLAN 2) FOR SNUBBER FUNCTIONAL TEST



## PLANT SYSTEMS

### BASES

---

---

#### 3/4.7.4 SNUBBERS (Continued)

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

To provide assurance of snubber functional reliability one of two functional testing methods is used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 5% tested for each functional testing failure, or
2. Functionally test a sample size and determine sample acceptance using Figure 4.7.4-1.

Figure 4.7.4-1 was developed using "Wald's Sequential Probability Ratio Plan" described in "Quality Control and Industrial Statistics" by Acheson J. Duncan and the Revision 2 draft (9/86) of the ANSI/ASME OM4 document (Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints (Snubbers)).

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubbers for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

#### 3/4.7.5 SEALED SOURCE CONTAMINATION

The limitation on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism, i.e., sealed sources within radiation monitoring or boron measuring devices, are considered to be stored and need not be tested unless they are removed from the shielded mechanism.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. NPF-29

SYSTEM ENERGY RESOURCES, INC., et al.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated July 25, 1988, System Energy Resources, Inc. (SERI, the licensee), requested an amendment to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. The proposed amendment would change Technical Specifications (TS) 3/4.7.4, Snubbers, and the associated Bases 3/4.7.4 by: (1) changing sampling plan No. 2 to eliminate the requirement to test all snubbers if the number of rejected snubbers exceeds a specified number, and (2) deleting sampling plan No. 3.

2.0 DISCUSSION

TS Section 4.7.4, concerning surveillance requirements for snubbers, contains three alternative sampling plans one of which must be selected prior to surveillance testing of snubbers. Plan No. 1 requires at least 10 percent of the total number of each type of snubber to be functionally tested. If acceptance criteria are not met, an additional 5 percent are required to be tested until no failures are found, or until all snubbers are tested. Plan No. 2 requires an initial sample of at least 37 snubbers to be tested. The plan contains criteria for acceptance of the remainder of the untested population, criteria for continued testing and the rejection criteria. The rejection criteria require that if the number of failures exceeds a specified small percentage of snubbers tested (7.5 percent to 10 percent), then all the remainder of the snubbers must be tested. Plan No. 3 requires an initial sample of at least 55 snubbers to be tested. For each snubber which fails to meet acceptance criteria, another sample of at least one-half of the size of the initial sample is required to be tested until the total number tested equals the initial sample size times the factor  $(1 + C/2)$  where C is the number of failed snubbers. Testing continues until acceptance criteria are met or until all snubbers are tested.

For Plan No. 2, test results for a given snubber type are plotted on TS Figure 4.7.4-1, where N is the number of snubbers tested and C is the number of test failures. The plot of test results falls into one of three regions: (1) the "accept" region which indicates that snubber type can be terminated; (2) the "continue testing" region which indicates that testing of that snubber type must continue, or (3) the "reject" region which indicates that all snubbers of that type are required to be tested. The "reject" region

of TS Figure 4.7.4-1 provides the possibility of rejecting a good population of snubbers and requiring functional testing of the entire snubber population. Functional testing of the entire population requires increased radiological exposure of test personnel.

### 3.0 EVALUATION

The first change in the licensee's proposal is based on an analysis of Wald's sequential sampling plan. An evaluation of the Wald's sequential sampling plan formulas for acceptance and rejection numbers shows that reducing the probability of accepting a good population to zero, while holding constant the probability of accepting a bad population, has the effect of eliminating the "reject" region without significantly changing the accept region. Therefore, acceptance is essentially independent of rejection. The proposed change to eliminate the "reject" region maintains the currently approved acceptance criteria, while eliminating the potential for excessive snubber testing. These results were developed by the American National Standards Institute/American Society of Mechanical Engineers Code Committee (ANSI/ASME OM4 Committee) which develops standards for testing snubbers.

Although, the acceptance criteria in the Wald's sequential sampling plan are essentially independent of the rejection criteria, a slight dependence exists. The elimination of the rejection criteria without a corresponding change to the acceptance criteria will result in a very small increase in the probability of accepting a bad population. For the change being proposed, SERI has determined this negligible increase in probability to be less than 0.003. This determination was made by setting the probability of rejecting a good population to zero and then calculating the change in the probability of accepting a bad population required to duplicate the "accept" region of TS Figure 4.7.4-1.

In the first refueling outage, 3.2 man-rem of exposure was accumulated during the mechanical snubber inspections using sample plan No. 2. During the second outage, 29 man-rem exposure was accumulated performing mechanical snubber inspections using this same plan. There is a potential for over 60 man-rem exposure during the third outage if sample plan No. 2 is used without the proposed change. Therefore, this proposed change will reduce man-rem exposure by a substantial amount. In addition, the change will eliminate the probability of excessive tests of a good snubber population.

The second change in the licensee's proposal is deletion of sample plan No. 3. This change is consistent with recent developments by the ANSI/ASME OM4 Committee. The licensee has no plans to use plan No. 3.

The associated TS Bases are being changed to be consistent with the proposed changes to the TS. A reference to the work of the ANSI/ASME OM4 Committee is added to provide the bases of TS Figure 4.7.4-1. Additionally, references to plan No. 3 are deleted.

On the basis of this evaluation, we conclude that the proposed changes to the TS are acceptable because the acceptance criteria for surveillance testing of snubbers remain essentially unchanged. Also, the proposed changes do not significantly reduce the previous confidence level of snubber population acceptance and have no significant effect on the structural integrity of safety-related systems or margins of safety. In addition, radiological exposure to test personnel would be reduced with little, if any, increase in the probability of accepting a bad population of snubbers.

#### 4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on March 7, 1989 (54 FR 9580) . Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant impact on the quality of the human environment.

#### 5.0 CONCLUSION

The Commission has issued a Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing which was published on August 25, 1988 in the Federal Register (53 FR 32488). No petition to intervene or request for hearing has been filed on this action.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and the security, or to the health and safety of the public.

Principal Contributor: J. Rajan, Mechanical Engineering Branch

Dated: March 10, 1989