



OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

April 8, 1988

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Proposed Amendment to the Operating
License (PCOL-88/05)
AECM-88/0049

System Energy Resources, Inc. (SERI) is submitting by this letter a proposed amendment to the Grand Gulf Operating License. This proposed amendment regards Technical Specification Table 4.8.1.1.2-1 concerning Diesel Generator Test schedule. These changes are in response to the NRC's Generic Letter 84-15.

In accordance with the provisions of 10 CFR 50.4 and 50.30, the signed original of the requested amendment is enclosed and the appropriate copies will be distributed. The attachment provides the technical justification and discussion to support the requested amendment. This amendment has been reviewed and accepted by the Plant Safety Review Committee and the Safety Review Committee.

Based on the guidelines presented in 10 CFR 50.92, SERI has concluded that this proposed amendment involves no significant hazards considerations.

In accordance with the requirements of 10 CFR 170.21, an application fee of \$150 is attached to this letter.

Yours truly,

ODK:rg

- Attachments: 1. Remittance of \$150 Application Fee
2. Affirmation per 10 CFR 50.30
3. GGNS PCOL-88/05

cc: (See Next Page)

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BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

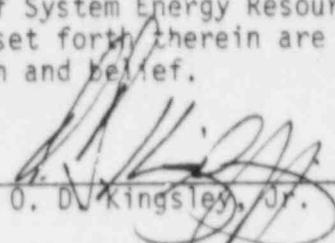
LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF
MISSISSIPPI POWER & LIGHT COMPANY
and
SYSTEM ENERGY RESOURCES, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

AFFIRMATION

I, O. D. Kingsley, Jr., being duly sworn, state that I am Vice President, Nuclear Operations of System Energy Resources, Inc.; that on behalf of System Energy Resources, Inc., and South Mississippi Electric Power Association I am authorized by System Energy Resources, 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, Nuclear Operations of System Energy Resources, 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.

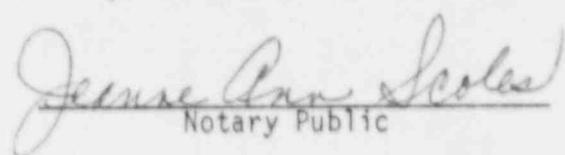


O. D. Kingsley, Jr.

STATE OF MISSISSIPPI
COUNTY OF HINDS

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 8th day of April, 1988.

(SEAL)



Notary Public

My commission expires:

My Commission Expires Oct. 21, 1991

A. SUBJECT

1. NLS-87/05 Diesel Generator Test Schedule
2. Affected Technical Specifications:
Table 4.8.1.1.2-1; page 3/4 8-8

B. DISCUSSION

1. The proposed changes to the subject table are as follows:
 - a. Delete the diesel generator test frequency of 14 days.
 - b. Change the criteria for the 7 day test frequency to greater than 4 diesel generator failures in the last 100 valid tests or greater than 1 diesel generator failure in the last 20 valid tests.
 - c. Change the criteria for the 31 day test frequency to less than or equal to 4 diesel generator failures in the last 100 valid tests and less than or equal to 1 diesel generator failure in the last 20 valid tests.
 - d. Add a "***" footnote to the 7 day test frequency for greater than 1 diesel generator failure in the last 20 valid tests. The footnote requires that the associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to less than or equal to one.
 - e. Delete the reference in the * footnote about computation of the "last 100 valid tests"
2. The first three changes above were previously submitted to the NRC in a letter dated May 22, 1986 (AECM-86/0157). The NRC did not accept these changes (Safety Evaluation Report dated October 23, 1986). Further evaluation by SERI and a need for the changes has resulted in this resubmittal.

C. JUSTIFICATION

1. SERI received Amendment 30 to Operating License NPF-29 on March 31, 1987. This amendment provides relaxations on certain diesel generator testing requirements suggested by Generic Letter 84-15. In addition to the changes suggested by Generic Letter 84-15, SERI was granted other changes to Table 4.8.1.1.2-1, Diesel Generator Test Schedule. These changes were granted to reduce the number of diesel generator starts in relationship to valid failures.

The major changes to Table 4.8.1.1.2-1 granted in Amendment 30 include the following:

- a. The 3 day diesel generator test frequency was deleted.

- b. The entry into the 7 day test frequency was changed from 3 to greater than or equal to 3 failures in the last 100 valid tests.
 - c. Determination of the last 100 tests was changed from on a per nuclear unit basis to a per diesel generator basis.
2. The number of potential diesel generator starts on diesels not experiencing failures was reduced by the changes granted in Amendment 30. The deletion of the 3 day test interval and changing from determining valid tests on a per nuclear unit basis to a per diesel generator basis both contribute to reduced testing.

Before Amendment 30 the last 100 valid tests were based on a per nuclear unit basis. With 3 diesel generators starting equally each engine contributes approximately 33 valid tests to the required 100 valid tests for the nuclear unit. But if one of the diesel generators had a valid failure that exceeded the criteria of Table 4.8.1.1.2-1, accelerated testing of all three diesel generators was required.

Amendment 30 requires that the last 100 valid tests be determined on a per diesel generator bases. This means that all 100 of the last valid tests must be performed on an individual diesel generator. All three diesel generators are not required to perform accelerated testing if one diesel generator has a valid failure. The net result of Amendment 30 is to reduce testing on diesel generators without valid failures. But the diesel generator with valid failures will be required to be in accelerated testing for a longer time period with a larger number of valid tests. This is because the other two diesels are not required to enter the accelerated test frequency. Therefore, the last 100 valid tests without failures builds at a slower rate.

An individual diesel will stay in an accelerated test frequency for 3 times the number of tests and 3 times the time period. This is based on a comparison to pre-Amendment 30 with all three diesel generators started equally.

The Amendment 30 changes reduced testing on the Division II and HPCS diesel generator; however, accelerated testing on the Division I diesel generator has continued since approximately December, 1986. This accelerated testing will continue at the present testing frequency until approximately January, 1990. This represents approximately 3 years of accelerated testing. SERI does not believe that the intent of Amendment 30 is to require this kind of accelerated testing over such long periods of time. Another failure on the Division II or HPCS diesel generators could require them to undergo testing on an accelerated basis over equally long periods of time. The NRC Staff concluded in Generic Letter 84-15 that excessive testing results in degradation of diesel engines. SERI does not believe the intent of Generic Letter 84-15 was to require this kind of lengthy, accelerated testing.

3. In their Safety Evaluation dated October 23, 1986, the NRR staff found that the SERI request to include routine diesel generator testing based on the number of failures per diesel in the last 20 tests was not acceptable. The staff concluded that the Grand Gulf test frequency, based on the last 100 tests, which maintains reliability goal of 0.99, is consistent with the Standard Technical Specifications and should not be changed until resolution of GI B-56 and USI A-44 (Diesel Generator Reliability and Station Blackout, respectively). A reliability goal of 0.95, consistent with the 20 valid test criteria, has been approved for use at other operating plants prior to resolution of GI B-56 and USI A-44. Likewise, SERI requests approval for use of the proposed technical specification changes.
4. The proposed technical specification changes include the 20 valid test criteria based on a reliability goal of 0.95. This reliability goal was included as an example in Generic Letter 84-15 and is stated to be the NRR staff's proposed resolution of USI A-44 concerning diesel generator testing.

SERI's intent is to maintain a high diesel generator reliability at Grand Gulf. The intent of these proposed changes is to achieve a test program that does not degrade the diesel generators at Grand Gulf and to ensure that the diesel generators are capable of performing their design function with the same test schedule.

The proposed changes included in this submittal go beyond the 20 valid test criteria example in Generic Letter 84-15 by also including a 100 valid test criteria. The proposed 100 valid test criteria imposes additional diesel generator testing if the number of failures in the last 100 valid tests exceed four. The proposed changes also endorse the example in Generic Letter 84-15 by deleting the 14 day test frequency. The 14 day test frequency is not necessary to demonstrate reliability of a diesel generator since the proposed changes impose an additional testing requirement. This additional testing requirement is such that with greater than 1 valid failure in the last 20 valid tests, seven consecutive failure free demands must be demonstrated. This is in addition to the number of failures in the last 20 valid demands must be reduced to less than or equal to 1 before the test frequency can change from 7 to 31 days.

5. Each diesel generator now has over 100 valid tests since the Operating License (OL) was issued. The computation can not consider tests prior to issuance of the OL since each engine now has over 100 valid tests after the OL was issued. Therefore the reference in the * footnote to valid tests performed after issuance of the Operating License is no longer necessary.
6. In summary, the proposed changes are justified based on the following:
 - a. The proposed changes retain the 100 valid test criteria by requiring accelerated testing if failures exceed 4 (on a per diesel generator basis).

- b. The 20 valid test criteria proposed in this amendment is more stringent than in the example provided in Generic Letter 84-15. Seven consecutive failure free starts are required and the number of failures must be less than or equal to one in the last 20 valid tests. This criteria must be satisfied before the test frequency can be changed from 7 to 31 days.
- c. The 14 day test frequency is not necessary due to additional 7 day testing imposed if the valid failures exceed 1 in the last 20 valid starts.
- d. The 100 test criteria per diesel granted to Grand Gulf by Amendment 30 imposes more testing on an individual diesel generator experiencing failures than imposed on other operating plants. Other operating BWR-6 plants have the changes proposed in this submittal.
- e. Deleting a portion of the * footnote is administrative in nature.

D. SIGNIFICANT HAZARDS CONSIDERATION

SERI has evaluated the proposed amendment and considers it not to involve a significant hazards consideration for the following reasons:

1. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because the changes will improve diesel generator overall reliability by reducing unnecessary testing. Changing the reliability goal to 0.95 from 0.99 is within proposed NRC acceptance criteria for establishing diesel generator availability and therefore does not significantly increase the probability or consequences of an accident previously evaluated. Including both the 20 and 100 valid test criteria for determining test frequency adds assurance that diesel generator failures are considered over both short term and long term testing intervals. Requiring seven consecutive failure free starts and requiring that the number of failures in the last 20 valid demands has been reduced to less than or equal to one before increasing the test interval from 7 to 31 days, ensures that diesel generator reliability is maintained. Other BWR-6 plants similar in design to Grand Gulf have been using a table similar to Table 4.8.1.1.2-1 contained in this letter. This demonstration of successful use of the new test criteria indicates that equal success should be experienced at Grand Gulf.

Deleting a portion of the * footnote does not involve a significant increase in the probability or consequences of an accident previously evaluated because the change is administrative in nature. Each diesel generator has over 100 valid tests after the issuance of the OL. Therefore tests prior to the issuance of the OL can not be used in the computation.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because diesel generator reliability is being maintained within NRC acceptable goals by implementing these changes. The proposed testing criteria go beyond the testing requirements provided as an example in Generic Letter 84-15. By imposing these additional test requirements, the NRC proposed reliability goal of 0.95 would be exceeded. The reduced starts on the diesel generators will increase their overall reliability and availability thus the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Deleting a portion of the * footnote does not create the possibility of a new or different kind of accident from those previously evaluated because this proposed change is administrative in nature. Computation of the last 100 valid tests can not use the starts prior to issuance of the OL because each diesel generator has more than 100 valid tests after issuance of the OL.

3. The proposed changes do not involve a significant reduction in the margin of safety because changing to a diesel generator reliability goal of 0.95 follows proposed NRC reliability guidelines. The surveillance test frequencies given as an example in Generic Letter 84-15 have been met and exceeded by the proposed changes in this amendment.

The test frequency granted in Amendment 30 requires testing at approximately 3 times the time period prior to Amendment 30. The NRC Staff has concluded that excessive testing results in degradation of diesel engines. SERI agrees with this conclusion. The testing frequency at GGNS is currently excessive. In order to reduce the testing frequency the reliability goal is required to be within the NRC reliability guideline of 0.95. The reduced testing frequency would result in reduction in degradation of the diesel engines. SERI considers the reduction in the reliability goal from 0.99 to 0.95 to be counteracted by a reduction in diesel engine degradation. Therefore, these changes do not represent a significant reduction in a margin of safety.

A reduction in the reliability goal from 0.99 to 0.95 is consistent with Generic Letter 84-15. The reduction in the reliability goal is consistent with other licensed operating plants, including BWR-6 operating plants. SERI's intent is to maintain a high reliability for diesel generators. The intent of these proposed changes is to achieve a test program that does not degrade the diesel generators at Grand Gulf Nuclear Station. And ensure that the diesel generators are capable of performing their design function with the same test schedule. Therefore these changes do not represent a significant reduction in a margin of safety.

Deleting a portion of the * footnote does not involve a significant reduction in the margin of safety because this proposed change is administrative in nature. The computation of the last 100 valid tests can not consider tests prior to the issuance of the OL. This is because each diesel generator has over 100 valid tests after the issuance of the OL.

4. Therefore, based on the above conclusions the proposed changes involve no significant hazards considerations.