



OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

April 22, 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-88/04)
AECM-88/0071

System Energy Resources, Inc. (SERI) is requesting by this submittal an amendment to License NPF-29 for Grand Gulf Nuclear Station Unit 1. This amendment requests a change to Grand Gulf Unit One Technical Specification 4.1.3.3. This change will provide alternate surveillance requirements for determining control rod scram accumulator operability. The alternate surveillance requirements are needed for circumstances when the accumulator alarm circuit is inoperable. The proposed alternate surveillance requirements were previously discussed with NRR and NRC Region II in a March 30, 1988 telephone conference call.

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:bms

- Attachments:
1. Remittance of \$150 Application Fee
 2. Affirmation per 10 CFR 50.30
 3. GGNS PCOL-88/04

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A Middle South Utilities Company

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BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

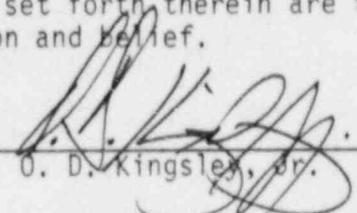
LICENSE NO. NPF-29

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.

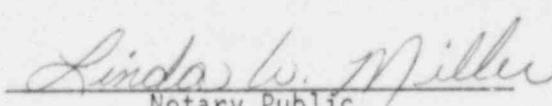


O. D. Kingsley, Jr.

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 22 day of April, 1988.

(SEAL)

Notary Public

My commission expires:

My Commission Expires Aug. 5, 1991

A. SUBJECT

1. NL 88-03: Control Rod Scram Accumulators - Additional Surveillance Requirements
2. Affected Technical Specifications:
 - Surveillance 4.1.3.3
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B. DISCUSSION

1. Currently the surveillance requirements to determine operability of the control rod scram accumulators include functional testing of the leak detector alarm circuits and calibration of the low pressure alarm circuits. The specification could be interpreted to require declaring the scram accumulator inoperable when the alarm circuits fail, even when the scram accumulator could be shown to have adequate pressure and no accumulated water and therefore be fully operable.
2. The alarm circuit can provide early detection of a degraded scram accumulator. However, the alarm itself is nonspecific as to the cause which can be either accumulated water, low pressure or circuit malfunction. In the event of an alarmed condition an operator would be dispatched to determine the cause. The control rod accumulator leak detection and low pressure alarm circuitry is multiplexed in the field and input to the Rod Control and Information System (RC&IS). Occasions may arise where RC&IS could be affected due to an unrelated failure or maintenance activity such that the alarm circuitry for all scram accumulators may be non-functional. This could require all control rods to be declared inoperable due to inoperable scram accumulators with a subsequent reactor scram required. This course of events could occur even though each scram accumulator would still be otherwise operable.
3. The proposed additional surveillance requirements will provide optional requirements to determine scram accumulator operability in the event that the alarm circuitry is inoperable. This will preclude unnecessary fuel duty cycling from inserting "inoperable" control rods and potential plant shutdown.
4. The need to clarify Surveillance 4.1.3.3 was previously discussed with the NRC (NRR and Region 2) via telephone conference call on March 30, 1988. NRR and Region 2 concurred with SERI's approach of adding optional surveillance requirements to determine scram accumulator operability in the event that the alarm circuitry is inoperable. In addition, the proposed optional surveillance requirements have been reviewed and concurred with by the system vendor.

C. JUSTIFICATION

1. Proposed surveillance 4.1.3.3.a.2 adds an optional requirement to verify adequate accumulator pressure in the event the proper calibration and functioning of the pressure detectors and alarm circuit is not satisfactory. The new surveillance would require verification of accumulator pressure once per 24 hours. This is done by local examination of a pressure gauge on the accumulator inside containment.

This frequency is judged to be adequate to detect normal pressure losses prior to dropping below the required 1520 psig. Pressure losses of a more rapid nature are extremely unlikely, such that a daily surveillance is sufficient. This frequency will provide adequate assurance of operability without imposing an excessive burden on the operating staff.

2. Proposed surveillance 4.1.3.3.b.2 adds an optional requirement to verify no accumulated water in the gas side of the accumulator in the event the proper functioning of the leak detectors and alarm circuit is not satisfactory. The new surveillance would require verification of accumulator water drained once per 48 hours. This is typically accomplished by hydraulically isolating the scram accumulator and opening the drain located at the base of the accumulator. This procedure results in the loss of some small quantity of the nitrogen pre-charge on the accumulator. Repeated draining will eventually result in low accumulator pressure and the need to recharge. This effect as well as the involved nature of the draining action support a 48 hour surveillance interval, as opposed to the proposed 24 hour interval for pressure monitoring.

This frequency is judged to be adequate to detect degradation in the accumulator piston seal prior to water accumulation sufficient to cause degraded performance of the accumulator. Rapid seal failures are sufficiently uncommon to justify the 48 hour surveillance. Additionally, as discussed in paragraph B.3 above, should this alternate surveillance be required due to the inability of all leak detectors to provide alarm, 48 hours between successive verifications of no accumulated water would be consistent with the time required to perform the surveillance for all 193 accumulators. Therefore, this frequency will provide adequate assurance of operability without imposing an excessive burden on the operating staff.

3. The existing surveillance 4.1.3.3.a and b have been editorially rewritten for clarity in incorporating the above new requirements.
4. It is SERI's intent to maintain the alarm circuitry operable thereby minimizing the need for increased containment entries and surveillances and ensuring the availability of the continuous monitoring provided by the alarm function. The optional surveillances provided will allow necessary repairs to be accomplished without undue actions regarding control rod operability by the operating staff.

D. NO SIGNIFICANT HAZARDS CONSIDERATIONS

As discussed in 10CFR50.92 the following discussions are provided to the NRC Staff in support of "no significant hazards considerations."

1. No significant increase in the probability or consequences of an accident previously evaluated results from this change.
 - a. This change would allow control rod scram accumulators to be verified operable even though their pressure and/or leak detector alarms may not be functional. The alarm circuit serves no control function. The Rod Control and Information System (RC&IS), of which the alarm circuit is a part, is not classified as safety related nor essential (see UFSAR 7.7.1.2). Failure of the alarm circuit itself cannot increase the probability or consequences of a previously evaluated accident. Allowing alternate methods to verify operability will reduce the likelihood of unwarranted shutdowns and/or the unnecessary declaring of control rods inoperable, thereby reducing unnecessary transients on plant systems and fuel.
 - b. The addition of surveillances 4.1.3.3.a.2 and 4.1.3.3.b.2 allow for verification of the operability of a scram accumulator in the event the alarm circuit has failed. These methods involve positive local verification and are at least as reliable as the installed circuitry for determining operability of the accumulator. The frequencies proposed are judged to be adequate considering the reliability of the accumulator and the effort associated with the verification.
 - c. Therefore these changes will not significantly increase the probability or 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.
 - a. Control rod scram accumulators will be maintained operable by evaluation against the currently existing criteria. These proposed additional requirements will allow alternate methods to be used to verify compliance with operability criteria (specifically, minimum pressure and no accumulated water). These methods are either currently required at longer frequencies (verification of pressure) or are consistent with standard practice and vendor recommendations for eliminating an inoperable condition (allowing draining to assure no water accumulation).
 - b. Actual function and operating configurations are not affected by this change and therefore would not create the possibility of a new or different kind of accident from any previously evaluated.

3. This change would not involve a significant reduction in the margin of safety.
 - a. The determination of operability based on frequent verification is judged by the vendor to be an acceptable alternative to a continuous alarm indication for detecting low accumulator pressure or accumulator seal degradation during the time period required to repair the alarm circuitry.
 - b. The function of the vast majority of equipment required operable relies on periodic surveillance without requiring reliance on continuous alarm capability. In this change the continuous monitoring capability of the alarm circuit is maintained (and is preferred), but provisions for alternate periodic surveillance will also be provided.
 - c. These changes will minimize unnecessary challenges to plant systems including the scram accumulators due to unwarranted shutdowns and/or declaration of control rod inoperability when the accumulator can be verified operable.

Therefore, this change will not involve a significant reduction in the margin of safety.