SYSTEM ENERGY RESOURCES, INC.

OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

August 19, 1988

U. S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D. C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Change to the Refueling Platform
Main Hoist Downtravel Cutoff
Setpoint
Proposed Amendment to the Operating
License (PCOL-88/14)
AECM-88/0155

System Energy Resources, Inc. (SERI) is submitting by this letter a proposed amendment to the Grand Gulf Nuclear Station (GGNS) Operating License. The proposed amendment changes the reference point used to establish the refueling platform main hoist downtravel cutoff setpoint. Currently, the setpoint is 3.5 ± 0.5 inches below the top of the fuel assembly handles in the reactor core. The proposed amendment will use the reactor vessel top guide as the reference point with a downtravel cutoff setpoint of greater than or equal to 1.0 inch above the top guide.

In accordance with the provisions of 10 CFR 50.4, the original of the requested amendment is enclosed and the appropriate copies will be distributed. Attachment 3 provides the 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 upon 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.

This amendment change is needed by March 1, 1989 to support core alteration activities planned for the third refueling outage (RF03).

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Discussion is provided in Attachment 3 as to the actual impact upon RF03 activities of the proposed amendment.

Yours truly,

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Attachments: 1. Remittance of $150 Application Fee
2. Affirmation per 10 CFR 50.30
3. GGNS PCOL-88/14

cc: Mr. T. H. Cloninger (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
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State Board of Health
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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 19th day of August, 1988.

(SEAL)

Jeanne Ann Scales
Notary Public

My commission expires:

My Commission Expires Sept. 21, 1991

A. SUBJECT

1. NL 88/11, Change to the Refueling Platform Main Hoist Downtravel Cutoff Setpoint

2. Revised Technical Specification:

   a. Refueling Platform Surveillance Requirement, 4.9.6.1.b.1. - Page 3/4 9-8.

B. DISCUSSION

1. The proposed amendment changes the reference point used to establish the refueling platform main hoist downtravel cutoff setpoint specified in Technical Specification (TS) Surveillance Requirement 4.9.6.1.b.1. Currently, the setpoint is 3.5 $\pm$ 0.5 inches below the top of the fuel assembly handles in the reactor core. The proposed change will use the reactor vessel top guide as the reference point with a downtravel cutoff setpoint of greater than or equal to 1.0 inch above the top guide.

2. TS 4.9.6.1.b.1 requires that the main hoist downtravel cutoff operate when the bottom of the fuel grapple is 3.5 $\pm$ 0.5 inches below the top of the fuel assembly bail handle. This interlock setpoint is adequate for movement of new and spent fuel assemblies and for movement of double blade guide assemblies. The setpoint has been set very close to the lowest allowable value during the first two refueling outages for the movement of single blade guides due to their shorter length. Blade guides are used to provide lateral support and guidance for control rods in control cells from which two or more fuel assemblies have been removed during refueling.

3. Grand Gulf Nuclear Station (GGNS) uses single blade guides frequently during core shuffling. During future refueling outages neutron irradiation growth of fuel assemblies with high exposures is expected to cause the setpoint to be inadequate to allow grappling of single blade guides. The reason is because the setpoint reference is currently the top of a fuel assembly bail handle and so as the fuel assembly lengthens the allowable downtravel distance of the fuel grapple decreases.

4. Therefore, in anticipation of this problem, SERI is requesting the reference point for establishing the downtravel cutoff setpoint be changed to the top of the top guide rather than the top of a fuel assembly bail handle. By changing the reference point, the allowable fuel grapple downtravel distance will remain constant from cycle to cycle. This eliminates the effect of fuel assembly neutron irradiation growth. In addition, a cutoff setpoint of greater than or equal to 1 inch above the top guide is being adopted. This setpoint is approximately 0.5 inches below the current downtravel cutoff point and ensures that single blade guides can be grappled.

C. JUSTIFICATION

1. There is no FSAR basis for the downtravel cutoff setpoint. The downtravel limit is based on sound engineering judgment and equipment protection rather than nuclear safety concerns or refueling operation safeguards. Two factors bound the selection of the appropriate downtravel limit.

2. First, and most important, the limit must be low enough to allow the grappling of all fuel assemblies and blade guides. This elevation must consider the total range of tolerances which can occur in the manufacturing of these components and the effects of irradiation and thermal growth.

3. Second, the limit must not be so low as to allow the grapple to travel below the bottom of the top guide, which can occur with a fully extended main hoist mast. This limit prevents the potential for grapple damage if it were to inadvertently engage with the top guide bottom during uptravel and also protects the core internals and pressure vessel from excessive lifting force during lifting operations.

4. These factors have led General Electric (GGNS NSSS, refueling equipment, and fuel vendor) to recommend a downtravel cutoff setpoint which will shut the main hoist power off before the fuel grapple head comes in contact with the top guide. A setpoint of greater than or equal to 1.0 inch above the top guide elevation will prevent the grapple from contacting the top guide. The use of the top guide as a reference also provides a repeatable point of reference for all future setpoint verifications. This change has also received the concurrence of Advanced Nuclear Fuels, the other GGNS fuel vendor.

5. The current downtravel cutoff setpoint has an upper limit as well as a lower limit. This upper limit is a practical limit only and is not necessary for safe operation of the main hoist. The proposed downtravel cutoff setpoint provides only a lower limit on travel. This is consistent with the philosophy used in other Technical Specifications which contain setpoints. Where unacceptable consequences could result from exceeding only an upper or only a lower limit, allowable values are specified; however, where unacceptable consequences could result from exceeding an upper or a lower limit, setpoints with tolerances are specified. For the proposed changes unacceptable consequences would only occur if the grapple traveled below the top guide; therefore, only a lower limit is specified for the downtravel cutoff setpoint.

6. As stated in the Bases for TS 3/4.9.6, the operability requirements of the refueling platform main hoist ensure that: (1) only the main hoist will be used to handle fuel within the reactor pressure vessel; (2) the main hoist has sufficient load capacity for handling fuel assemblies and/or control rods; and (3) the core internals and pressure vessel are protected from excessive lifting force if they are inadvertently engaged during lifting operations. The proposed

change to the downtravel cutoff limit will not affect the above operability requirements. Although the downtravel interlock is designed to provide part of the above capabilities to prevent damage to the refueling platform equipment and core internals, the interlock is not assumed to function to prevent or mitigate the consequences of any design basis accident. Therefore, the worst case refueling accident (bundle drop) was analyzed without reliance on the downtravel cutoff interlock.

7. Impact of the grapple upon fuel assemblies is not a concern. Currently, the grapple is lowered onto the fuel assembly bail to generate a slack cable signal so that the grapple can engage the bail handle. The contact of the grapple is transmitted through the bail to the fuel assembly. Therefore, since the downtravel speed of the grapple is not being changed, the contact force of the grapple is not being altered by the proposed cutoff setpoint change.

D. NO SIGNIFICANT HAZARDS CONSIDERATIONS

As discussed in 10 CFR 50.92, 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. Since the main hoist is used during refueling to handle fuel assemblies, the accident previously evaluated that is applicable to the proposed change is the fuel handling accident inside containment. The probability of a fuel handling accident occurring is not altered by the proposed change. This is because the downtravel cutoff interlock does not affect the manner in which a fuel assembly is handled other than allowing the grapple to be lowered a sufficient distance to generate a slack cable signal which allows a fuel assembly to be engaged or disengaged by the main hoist. In addition, the downtravel cutoff interlock is not assumed to prevent any design basis accident.

   b. The consequences of a previously evaluated accident are not increased by the proposed change because the downtravel cutoff interlock is not assumed to function to mitigate the consequences of any design basis accident, including a fuel handling accident. The downtravel limit is based on sound engineering judgment and equipment protection rather than nuclear safety concerns or refueling operation safeguards. Fuel damage and offsite doses remain unaffected by the change to the downtravel interlock.

   c. Therefore, there is no increase in the probability or consequences of previously analyzed accidents due to the proposed change.

2. This change would not create the possibility of a new or different kind of accident from any previously evaluated.

a. The downtravel cutoff interlock is used for the refueling platform main hoist. The main hoist is used to handle fuel assemblies and the dropping of a fuel assembly is already an evaluated accident.

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

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

a. The downtravel cutoff interlock is not assumed to function to mitigate any design basis accident. Since the interlock is not assumed in any safety analyses, changing the setpoint cannot affect any safety margin.

b. By allowing the grapple to travel downward an additional 0.5 inches, the margin of safety will not be significantly reduced. The grapple will still be prevented from contacting the top guide by the proposed setpoint, the only difference is the grapple will be 1.0 inch above the top guide rather than 1.5 inches.

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