Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

May 24, 2001
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10CFR50.90
STI: 31286987

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Proposed Change to Technical Specification Definition 1.9 CORE ALTERATIONS

STP Nuclear Operating Company (STPNOC) submits the attached proposed amendment to South Texas Project Operating Licenses, NPF-76 and NPF-80. This license amendment request proposes revising the Technical Specification definition for CORE ALTERATIONS so that moving the control rods with the STP integrated head package will not be a core alteration. This change will account for a plant-specific design feature at STP.

STPNOC requests approval of the proposed amendment by September 1, 2001 to allow implementation in the Unit 1 refueling outage scheduled for October 2001. Once approved, the amendment shall be implemented within 30 days.

The STPNOC Plant Operations Review Committee and Nuclear Safety Review Board have reviewed and approved the proposed change to the Technical Specifications.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

A001

If there are any questions regarding the proposed amendment, please contact Mr. A. W. Harrison (361) 972-7298 or me at (361) 972-8757.

J. J. Sheppard
Vice President
Engineering & Technical Services

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Attachments:
1. Affidavit
2. Description of Changes and Safety Evaluation
3. Annotated Technical Specification Page
4. Technical Specification Page with Proposed Changes Incorporated

cc:

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

ATTACHMENT 1

AFFIDAVIT

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter	)		
	)		
STP Nuclear Operating Company, et al.,	)	Docket Nos.	STN 50-498
	)		STN 50-499
	)		
South Texas Project	)		
Units 1 and 2	)		

AFFIDAVIT

I, J. J. Sheppard, being duly sworn, hereby depose and say that I am Vice President, Engineering & Technical Services of STP Nuclear Operating Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached proposed Technical Specification change; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.

J. J. Sheppard
Vice President
Engineering & Technical Services

STATE OF TEXAS)
)
COUNTY OF MATAGORDA)

Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this 24th day of May, 2001.

LOIS J. MILLS
Notary Public, State of Texas
My Commission Expires
JULY 27, 2003

Notary Public in and for the
State of Texas

ATTACHMENT 2

DESCRIPTION OF CHANGES

AND

SAFETY EVALUATION

1.0 Introduction

The proposed amendment will revise the definition of CORE ALTERATIONS so that the movement of the integrated head package with the rod cluster control assemblies (RCCAs) withdrawn and locked into the package will not be a core alteration. The proposed change is similar to the wording currently used in NUREG-1432 Standard Technical Specifications for Combustion Engineering plants.

The integrated head package is a STP plant-specific design feature that is integral to the STP specific rapid refueling process. With the control rods (RCCAs) withdrawn into the integrated head package, they are well out of the active region of the core and have essentially no reactivity worth. Consequently, moving the integrated head package has no effect on reactivity and does not meet the intent of the CORE ALTERATIONS definition. An overview of the STP rapid refueling operation with the integrated head package is provided in Section 3.0 below.

The proposed change will facilitate outage planning. STPNOC expects to save at least one12 hour shift on the back end of a typical refueling outage.

2.0 Description

The proposed change adds an exclusion for rod cluster control assemblies locked out in the integrated head package to the definition of CORE ALTERATIONS as shown in Attachment 3. Attachment 4 is the proposed reconciled page.

3.0 Background

Section 9.1.4 of the STP UFSAR describes the STP rapid refueling process. In this section of the UFSAR, STPNOC describes the process in which the control rods are withdrawn into the integrated head package and then moved with the integrated head package as a whole assembly. The rapid refueling process described in this section of the UFSAR is the refueling process normally used by STPNOC. In this process, the refueling water and the reactor coolant contain approximately 2800 ppm boron, which is sufficient to keep the core approximately 5 percent $\Delta k/k$ subcritical during the refueling operations with all control rods removed and the core refueled to provide sufficient excess reactivity for operation to the next refueling outage.

After shutdown for a refueling outage and the Reactor Coolant System (RCS) has been cooled, the RCCAs (control rods) are withdrawn to their full-out position, and each control rod's holdout device is activated to ensure that the rod is held in its withdrawn position inside its upper internals guide tube and reactor head pressure housing. RCS draining is then started.

In the disassembly process, after the reactor head has been detensioned and the studs removed from the vessel flange, the reactor vessel is flooded to 12 in. below the top of the head flange. The upper head package (i.e., head, missile, cable bridge, upper internals, control rods, and rod drives) is lifted by the polar crane until the closure head guide pins are clear. Water from the RWST is pumped into the RCS, causing the water to overflow into the refueling cavity. The vessel head is lifted in conjunction with the water level in the refueling cavity and the upper package is moved to storage at the end of the refueling cavity opposite the refueling canal.

Conditions and Circumstances for Proposing the Amendment

In considering possible process improvements for refueling outages, STPNOC determined that the current Technical Specification definition of CORE ALTERATIONS was not consistent with the STP specific design. Currently, movement of the integrated head package with the RCCAs withdrawn into the package is considered a core alteration as long as that portion of the assembly containing the RCCAs is in the reactor vessel. STPNOC recognized that its rapid refueling design using the integrated head package with the control rods fully withdrawn and a high boron concentration in the vessel placed the control rods in a position that they had no effect on reactivity. In this configuration, the control rods (or RCCAs) do not meet the intent of the definition of CORE ALTERATIONS in the Technical Specifications.

The proposed change would enable STP to perform the same activities while the reactor head and upper internals are being removed as other Westinghouse plants. Because the STP control rods are withdrawn into the upper internals (and the internals are part of the integrated head package), STP has had to consider moving the package to be a core alteration and apply the associated restrictive actions and conditions imposed by various Technical Specifications. Other Westinghouse plants that have the current definition of CORE ALTERATIONS do not have to impose the restrictions because neither the head nor the upper internals meet the definition requirements.

4.0 Regulatory Requirements and Guidance

General Design Criterion 26 establishes requirements for reactivity control system redundancy and capability. STP meets the GDC 26 requirements for redundancy and capability by using control rods (RCCAs) and boration. The boration system is the system credited meeting the GDC 26 requirement to hold the reactor subcritical under cold conditions. Because there is no credit for the RCCAs holding the reactor core subcritical during refueling, there will be no impact on compliance with GDC 26 by the proposed change to the definition of CORE ALTERATIONS.

General Design Criterion 28 establishes requirements for reactivity limits and in particular rates of reactivity increase. Because the RCCAs have no effect on core

reactivity when they are withdrawn into the integrated head package, their removal with the head package has no significant reactivity increase and there is no impact on compliance with GDC 28.

STP has adopted the current definition of CORE ALTERATIONS from NUREG-1431, the Westinghouse Improved Standard Technical Specifications. As discussed above, this definition does not allow for the STP specific design features. NUREG-1432, the Combustion Engineering Improved Standard Technical Specifications has incorporated a definition that is more representative of the definition needed to reflect STP's design. The STP design is different from the CE design in that the STP RCCAs are withdrawn into an integrated head package which is moved as a single assembly while the CE design removes the reactor head and the control element assemblies (CEAs) in separate evolutions. However, the STP and CE designs are similar in that the control rods are in a configuration where they are above the active core and do not have any significant reactivity effects and their movement in this configuration need not be considered a core alteration.

5.0 Technical Analysis

The technical analysis of the proposed change to the definition is focused on demonstrating that there is no significant technical change in reactivity management because the RCCAs do not present a reactivity consideration when they are withdrawn into the integrated head package.

The top of the active fuel in the STP reactor core corresponds to 255 steps on the RCCA, or 168.0" above the bottom of the active fuel. The top of rod travel for the RCCA during operation is 259 steps (i.e., 4 steps above the top of the active fuel) and the position of the RCCAs when they are withdrawn into the integrated head package is typically 270 steps. Therefore, when the RCCAs are fully withdrawn into the integrated head package they are typically 15 steps, or about 9" above the top of the active fuel.

During refueling, including movement of the head package, the RCS boron concentration is maintained above 2800 ppm, per STP Technical Specifications. This ensures that the Keff of the unrodded core, both the spent discharge core and the fresh reloaded core, remains below 0.95. The presence of the RCCAs in the head package is not credited in any safety analyses.

Based on the evaluation above, it can be concluded that revising the definition of CORE ALTERATIONS will have no adverse effect on the existing requirements for managing reactivity related evolutions during refueling. The existing Technical Specifications that currently have conditions or actions that impose restrictions on core alterations will not be adversely affected by the proposed change since the movement of RCCAs withdrawn into the integrated head package has no potential to have an adverse reactivity effect.

6.0 Regulatory Analysis

As discussed in Section 4.0 above, the proposed change to the definition of core alterations has no effect on compliance with regulatory requirements for redundancy or capability or reactivity control systems, or for reactivity limits.

Although the definitions in the Technical Specifications are not specifically addressed in the Bases for the Technical Specifications, the proposed change to the definition of CORE ALTERATIONS will have no adverse effect on any STP Technical Specification that imposes conditions or actions where CORE ALTERATIONS are restricted.

In conclusion, based on the considerations discussed above, (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.

7.0 No Significant Hazards Determination

STPNOC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below.

1) Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change in the definition of CORE ALTERATIONS will not alter the way STPNOC handles the integrated head package. No new accident initiators will be introduced. Consequently, there is no significant increase in the probability of an accident previously evaluated.

   The evaluation demonstrates that the RCCAs have no effect on reactivity when they are withdrawn into the integrated head package. The proposed change has no effect on assumptions made in any accident previously evaluated. Consequently, there are no significant increases in the consequences of an accident previously evaluated.

2) Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not involve any new processes, procedures, or significantly different plant configurations. No new reactivity configurations are presented. Consequently, the possibility of a new or different kind of accident is not created.

3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The evaluation shows the RCCAs have no effect on reactivity when they are withdrawn into the integrated head package. Moving the integrated head package with the RCCAs withdrawn provides the same degree of control on reactivity as the original definition. Consequently, the proposed change does not involve a significant reduction in the margin of safety.

Conclusion

Based upon the analysis provided herein, the proposed amendments will not increase the probability or consequences of an accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a reduction in a margin of safety. Therefore, the proposed amendments meet the requirements of 10 CFR 50.92 and do not involve a significant hazards consideration.

8.0 Environmental Evaluation

10 CFR 51.22(b) specifies the criteria for categorical exclusions from the requirements for a specific environmental assessment per 10 CFR 51.21. This amendment request meets the criteria specified in 10 CFR 51.22(c)(9). The specific criteria contained in this section are discussed below.

(i) the amendment involves no significant hazards consideration

As demonstrated in the No Significant Hazards Consideration Determination, the requested license amendment does not involve any significant hazards consideration.

(ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite

The requested license amendment involves no change to the facility and does not involve any change in the manner of operation of any plant systems involving the generation, collection or processing of radioactive materials or other types of effluents. Therefore, no increase in the amounts of effluents or new types of effluents would be created.

(iii) there is no significant increase in individual or cumulative occupational radiation exposure

The requested license amendment involves no change to the facility and will not increase the radiation dose resulting from the operation of any plant system. Furthermore, implementation of this proposed change will not involve work activities which could contribute to occupational radiation exposure. Therefore, there will be no increase in individual or cumulative occupational radiation exposure associated with this proposed change.

Based on the above it is concluded that there will be no impact on the environment resulting from this change. The change meets the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to specific environmental assessment by the Commission.

9.0 Precedent

As discussed in Section 4.0 above, the primary precedent is established in the Standard Technical Specifications for Combustion Engineering Plants.

10.0 References

1. NUREG-1431 "Standard Technical Specifications, Westinghouse Plants"
2. NUREG-1432 "Standard Technical Specifications, Combustion Engineering Plants"
3. South Texas Project Updated Final Safety Analysis Report, Revision 7

ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATION CHANGES

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

a. All penetrations required to be closed during accident conditions are either:

1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or

2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except as provided in Specification 3.6.3.

b. All equipment hatches are closed and sealed,

c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,

d. The containment leakage rates are within the limits of Specification 3.6.1.2, and

e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATIONS

1.9 CORE ALTERATIONS shall be the movement of any fuel, sources, or reactivity control components **[excluding rod cluster control assemblies (RCCAs) locked out in the integrated head package]** within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT

1.9a The CORE OPERATING LIMITS REPORT is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.6. Plant operation within these core operating limits is addressed within the individual Specifications.

DIGITAL CHANNEL OPERATIONAL TEST

1.10 A DIGITAL CHANNEL OPERATIONAL TEST shall consist of injecting simulated process data where available or exercising the digital computer hardware using data base manipulation to verify OPERABILITY of alarm, interlock, and/or trip functions.

DOSE EQUIVALENT 1-131

1.11 DOSE EQUIVALENT 1-131 shall be that concentration of I-131 (microCurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of NRC Regulatory Guide 1.109, Revision 1, October 1977.

ATTACHMENT 4

TECHNICAL SPECIFICATION PAGE WITH PROPOSED CHANGES INCORPORATED

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