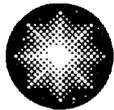


**George Vanderheyden**  
Vice President  
Calvert Cliffs Nuclear Power Plant  
Constellation Generation Group, LLC

1650 Calvert Cliffs Parkway  
Lusby, Maryland 20657  
410.495.4455  
410.495.3500 Fax



## **Constellation Energy**

June 7, 2005

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ATTENTION:** Document Control Desk

**SUBJECT:** Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318  
License Amendment Request: Eliminate Use of the Term CORE  
ALTERATIONS in the Technical Specifications

Pursuant to 10 CFR 50.90, the Calvert Cliffs Nuclear Power Plant, Inc. hereby requests an amendment to the Renewed Operating License Nos. DPR-53 and DPR-69 to eliminate the use of the term CORE ALTERATIONS in the Technical Specifications. Suspending core alterations has no effect on the initial conditions or mitigation of any design basis accident or transient, and these requirements impose an operational burden with no corresponding safety benefit. Therefore, the uses of the defined term CORE ALTERATIONS are proposed to be removed from the Technical Specifications. The proposed amendment incorporates changes reflected in Technical Specification Task Force (TSTF) 471-T and should be considered as the lead plant request. During development of this amendment request it was determined that a revision to TSTF-471-T was needed for Technical Specification 3.9.2. This amendment request includes that revision (see Attachment 1). The TSTF concurs with this change and will formally revise TSTF-471-T in parallel with the review of this amendment request. The proposed amendment also makes additional changes from TSTF-51-A.

The significant hazards discussion and the technical basis for this proposed change are provided in Attachment (1). Mark ups of the affected Technical Specification pages are provided in Attachment (2). The Technical Specification Bases will be changed as appropriate to support this information.

We request approval of the proposed change by January 1, 2006 to support planning and scheduling for the spring 2006 refueling outage. Note that this requested approval date does not impact continued operation of the Units. We also request a 60 day implementation period for the approved amendment to allow sufficient time to implement procedure changes and operator training associated with this change.

ADD 1



**ATTACHMENT (1)**

---

**TECHNICAL BASIS AND  
NO SIGNIFICANT HAZARDS CONSIDERATION**

---

**TABLE OF CONTENTS**

1. DESCRIPTION
2. PROPOSED CHANGE
3. BACKGROUND
4. TECHNICAL ANALYSIS
5. NO SIGNIFICANT HAZARDS CONSIDERATION
6. ENVIRONMENTAL CONSIDERATION
7. PRECEDENTS
8. REGULATORY COMMITMENTS

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS CONSIDERATION

---

#### 1. DESCRIPTION

This letter requests an amendment to Renewed Operating License DPR-53 and DPR-69 for Calvert Cliffs Unit Nos. 1 and 2 Technical Specifications, to eliminate the use of the defined term CORE ALTERATIONS. Suspending core alterations has no effect on the initial conditions or mitigation of any design basis accident or transient, and these requirements impose an operational burden with no corresponding safety benefit. Therefore, the uses of the defined term CORE ALTERATIONS are proposed to be removed from the Technical Specifications. The proposed amendment incorporates changes reflected in Technical Specification Task Force (TSTF) 471-T and should be considered as the lead plant request. During development of this amendment request it was determined that a revision to TSTF-471-T was needed for Technical Specification 3.9.2. This amendment request includes that revision (see Attachment 1). The TSTF concurs with this change and will formally revise TSTF-471-T in parallel with the review of this amendment request. The proposed amendment also makes additional changes from TSTF-51-A.

TSTF-51-A eliminated all uses of the defined term CORE ALTERATIONS from Applicability statements and most uses of the term in Required Actions. However, in adopting portions of TSTF-51-A, Calvert Cliffs did not eliminate the use of the defined term CORE ALTERATIONS from Applicability statements or Required Actions. TSTF-471-T eliminates the remaining few instances of the defined term CORE ALTERATIONS. Calvert Cliffs proposes adopting the necessary portions of TSTF-51-A and TSTF-471-T to eliminate the defined term CORE ALTERATIONS from the Technical Specifications.

#### 2. PROPOSED CHANGE

The proposed license amendment would revise the Calvert Cliffs Nuclear Power Plant Technical Specifications to eliminate the use of the defined term CORE ALTERATIONS. The proposed changes, which are indicated on the marked up pages in Attachment (2), are described below:

1. The definition of CORE ALTERATION in Technical Specification 1.1 is deleted (TSTF-471-T).
2. In Technical Specification 3.3.7, Containment Radiation Signal (CRS), the Applicability Statement is revised to remove the phrase "During CORE ALTERATIONS, with containment purge valves open,". Also, Required Action A.2.1 is deleted, resulting in the renumbering of Required Action A.2.2 (TSTF-51-A).
3. In Technical Specification 3.8.2, AC Sources – Shutdown, Required Actions A.2.1 and B.1 are deleted, resulting in the renumbering of the subsequent Required Actions (TSTF-471-T).
4. In Technical Specification 3.8.5, DC Sources – Shutdown, Required Action A.2.1 is deleted, resulting in the renumbering of the subsequent Required Actions (TSTF-471-T).
5. In Technical Specification 3.8.8, Inverters – Shutdown, Required Action A.2.1 is deleted, resulting in the renumbering of the subsequent Required Actions (TSTF-471-T).
6. In Technical Specification 3.8.10, Distribution Systems – Shutdown, Required Action A.2.1 is deleted, resulting in the renumbering of the subsequent Required Actions (TSTF-471-T).
7. In Technical Specification 3.9.1, Boron Concentration, Required Action A.1 is deleted, resulting in the renumbering of the subsequent Required Actions (TSTF-471-T).
8. In Technical Specification 3.9.2, Nuclear Instrumentation, Required Action A.1 is modified to replace "CORE ALTERATIONS" with "positive reactivity additions" (TSTF-471-T). This differs from the current revision of TSTF-471-T. The current revision simply removes the term "CORE ALTERATIONS." The TSTF will revise TSTF-471-T to replace "CORE

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS CONSIDERATION

---

ALTERATIONS” with “positive reactivity additions” in parallel with the review of this amendment request. The justification for this change is given in Section 4, Technical Analysis.

9. In Technical Specification 3.9.3, Containment Penetrations, the phrase “During CORE ALTERATIONS,” is deleted from the Applicability Statement. Also, Required Action A.1 is deleted, resulting in the renumbering of Required Action A.2 (TSTF-51-A).
10. In Technical Specification 3.9.4, Shutdown Cooling (SDC) and Coolant Circulation – High Water Level, Limiting Condition for Operation Note 2.b is modified to replace “CORE ALTERATIONS are” with “Movement of fuel assemblies within Containment is” (plant specific note).
11. In Technical Specification 3.9.6, Refueling Pool Water Level, the phrase “During CORE ALTERATIONS, except during coupling and uncoupling of control element assembly drive shafts,” is deleted from the Applicability Statement. Also, Required Action A.1 is deleted, resulting in the renumbering of Required Action A.2 (TSTF-51-A).

### 3. BACKGROUND

The term CORE ALTERATION is defined in the Calvert Cliffs Technical Specifications as, “CORE ALTERATION shall be the movement of any fuel sources, or reactivity control components 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.” The proposed change will eliminate the defined term CORE ALTERATION from the Technical Specifications. Suspending core alterations has no effect on the initial conditions or mitigation of any design basis accident or transient, and these requirements impose an operational burden with no corresponding safety benefit. Therefore, the uses of the defined term CORE ALTERATIONS are proposed to be removed from the Technical Specifications.

The defined term CORE ALTERATIONS unnecessarily complicates plant operation. Great lengths have been taken to ensure that no prohibited CORE ALTERATIONS take place, such as pausing the lift of the reactor vessel head and having individuals lay on the floor or use video cameras to look under the head to ensure that no control rod drive mechanisms are still latched to avoid accidentally lifting a control rod and violating a Required Action which prohibits CORE ALTERATIONS. These actions result in increased personnel dose and have no safety benefit as the shutdown margin is determined assuming the worst configuration of control rods.

### 4. TECHNICAL ANALYSIS

The term “core alteration” does not appear in the Standard Review Plan or in the Title 10 Code of Federal Regulations. Since CORE ALTERATIONS only occur when the reactor vessel head is removed, it only applies in Mode 6. There are only two accidents considered during Mode 6 for pressurized water reactors: a fuel handling accident and a boron dilution accident. According to the Standard Review Plan, a fuel handling accident is initiated by the dropping of an irradiated fuel assembly, either in the Containment or in the Auxiliary Building. There are no mitigation actions, except for taking credit for ventilation systems to reduce the dose consequences. Suspension of CORE ALTERATIONS, except for suspension of movement of irradiated fuel, will not prevent or impair the mitigation of a fuel handling accident.

The second analyzed event is a boron dilution accident. A boron dilution accident is initiated by a dilution source that results in the boron concentration dropping below what is required to maintain the shutdown margin. As described in the Bases for Technical Specification 3.9.1, Boron Concentration, which applies in Mode 6, “The refueling boron concentration limit is specified in the Core Operating

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS CONSIDERATION

---

Limits Report (COLR). Unit procedures ensure the specified boron concentration in order to maintain an overall core reactivity of  $k_{\text{eff}} \leq 0.95$  during fuel handling, with control element assemblies and fuel assemblies assumed to be in the most adverse configuration (least negative reactivity) allowed by unit procedures." The accident is mitigated by stopping the dilution. Likewise, the Bases for Technical Specification 3.9.2 state that source range monitors are needed to alert operators to unexpected changes in core reactivity caused by boron dilution or a misloaded fuel assembly. Suspension of CORE ALTERATIONS has no effect on the mitigation of a boron dilution accident as it is assumed that the control rods or fuel do not affect the initial conditions of a boron dilution accident since it is assumed that the control rods and fuel are in the most adverse conditions as allowed by procedure with a large safety margin ( $k_{\text{eff}} \leq 0.95$ ). To address the possibility of a misloaded fuel assembly in Technical Specification 3.9.2, a Required Action is added that suspends positive reactivity additions if nuclear instrumentation is not available. This precludes movement of fuel assemblies which could add reactivity to the core.

The proposed change will delete the CORE ALTERATIONS requirements from the applicability of Technical Specification 3.3.7, Containment Radiation Signal, Technical Specification 3.9.3, Containment Penetrations, and Technical Specification 3.9.6, Refueling Pool Water Level. The accident postulated to occur during core alterations, in addition to fuel handling accident, is boron dilution accident. This event has been evaluated and is not postulated to result in fuel cladding integrity damage. Since the only accident postulated to occur during CORE ALTERATIONS that results in a significant radioactive release is the fuel handling accident, the proposed Technical Specification requirements omitting CORE ALTERATIONS is justified.

In summary, with the exception of suspending movement of irradiated fuel assemblies, there are no design basis accidents or transients that are initiated by, or mitigation affected by, suspension of CORE ALTERATIONS. Therefore, since most Required Actions that require suspension of CORE ALTERATIONS also require suspension of movement of irradiated fuel, suspension of CORE ALTERATIONS provides no safety benefit. The two sets of Required Actions that do not also require suspension of the movement of irradiated fuel assemblies are Technical Specification 3.9.1, Boron Concentration, and Technical Specification 3.9.2, Nuclear Instrumentation. These two specifications are based on boron dilution accidents, which, as described above, do not rely on the suspension of CORE ALTERATIONS, including fuel movement, for mitigation. Therefore, for these two Technical Specifications, suspension of CORE ALTERATIONS provides no safety benefit.

#### 5. NO SIGNIFICANT HAZARDS CONSIDERATION

Calvert Cliffs Nuclear Power Plant is proposing an amendment to the Technical Specifications that will eliminate the use of the term CORE ALTERATIONS. The proposed changes have been evaluated against the standards in 10 CFR 50.92 and have been determined to not involve a significant hazards consideration in that:

1. *Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed change eliminates the use of the defined term CORE ALTERATIONS from the Technical Specifications. Core alterations are not an initiator of any accident previously evaluated except a fuel handling accident. Those revised Technical Specifications that protect the initial conditions of a fuel handling accident also require the suspension of movement of irradiated fuel assemblies, which protects the initial condition of a fuel handling accident. Therefore, suspension of CORE ALTERATIONS do not affect the initiators of the accidents previously evaluated and suspension of CORE ALTERATIONS does not affect the mitigation of the accidents previously evaluated.

## ATTACHMENT (1)

### TECHNICAL BASIS AND NO SIGNIFICANT HAZARDS CONSIDERATION

---

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.*

No new or different accidents result from utilizing the proposed change. The changes do not involve a physical modification of the plant (i.e., no new or different type of equipment will be installed) or a significant change in the methods governing normal plant operation. In addition, the changes do not impose any new or different requirements. The changes do not alter assumptions made in the safety analysis. The proposed changes are consistent with the safety analysis assumptions.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. *Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.*

Only two accidents are postulated to occur during plant conditions where CORE ALTERATIONS may be made: a fuel handling accident and a boron dilution accident. Suspending movement of irradiated fuel assemblies prevents a fuel handling accident. Also requiring the suspension of CORE ALTERATIONS is redundant to suspending movement of irradiated fuel assemblies and does not increase the margin of safety. CORE ALTERATIONS have no effect on a boron dilution accident. Core components are not involved in the initiation or mitigation of a boron dilution accident. Therefore, CORE ALTERATIONS have no effect on the margin of safety related to a boron dilution accident.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above evaluation, Calvert Cliffs has concluded that the proposed amendment involves no significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

#### 6. ENVIRONMENTAL CONSIDERATION

We have determined that operation with the proposed amendment would not result in any significant change in the types, or significant increases in the amounts, of any effluents that may be released offsite, nor would it result in any significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed amendment.

#### 7. PRECEDENTS

This is a lead plant application for TSTF-471-T. Therefore, we request that if approval is granted for this proposed Technical Specification amendment, it includes generic justification and approval for TSTF-471-T. As noted earlier, the TSTF will revise TSTF-471-T to include the change discussed above for Technical Specification 3.9.2.

#### 8. REGULATORY COMMITMENTS

None.

**ATTACHMENT (2)**

---

**MARKED UP TECHNICAL SPECIFICATION PAGES**

---

**1.1-2  
3.3.7-1  
3.8.2-2  
3.8.2-3  
3.8.2-4  
3.8.5-1  
3.8.5-2  
3.8.8-1  
3.8.8-2  
3.8.10-1  
3.8.10-2  
3.9.1-1  
3.9.2-1  
3.9.3-1  
3.9.3-2  
3.9.4-1  
3.9.6-1**

1.1 Definitions

include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

## CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

Analog Channels - the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY, including alarm and/or trip functions.

Bistable Channels - the injection of a simulated signal into the channel sensor to verify OPERABILITY including alarm and/or trip functions.

~~CORE ALTERATION~~

~~CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components 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 (COLR)

The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.

3.3 INSTRUMENTATION

3.3.7 Containment Radiation Signal (CRS)

LCO 3.3.7 Four CRS containment radiation monitor sensor modules, associated measurement channels, one CRS Actuation Logic channel, and one Manual Actuation channel shall be OPERABLE.

APPLICABILITY: ~~During CORE ALTERATIONS, with containment purge valves open.~~  
During movement of irradiated fuel assemblies within containment with containment purge valves open.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitor sensor module or associated measurement channel inoperable.	A.1 Place the affected sensor module in trip.	4 hours
	<u>OR</u>	
	A.2.1 <del>Suspend CORE ALTERATIONS.</del>	<del>Immediately</del>
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately

ACTIONS

----- NOTES -----

1. LCO 3.0.3 is not applicable.
2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One required offsite circuit inoperable.</p>	<p>----- NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A. -----</p>	
	<p>A.1 Declare affected required feature(s) with no offsite power available inoperable.</p>	<p>Immediately</p>
	<p><u>OR</u></p>	
	<p>A.2.1 Suspend CORE ALTERATIONS.</p>	<p>Immediately</p>
<p><u>AND</u></p>		
<p>A.2.2 Suspend movement of irradiated fuel assemblies.</p>	<p>Immediately</p>	
<p><u>AND</u></p>		



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (Continued)	<p>3 B/A Initiate action to restore required DG to OPERABLE status.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTE----- The following Surveillance Requirements (SRs) are not required to be performed: SR 3.8.1.11, SR 3.8.1.12, and SR 3.8.1.14. ----- For the LCO 3.8.2.a and LCO 3.8.2.b AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources-Operating," except SR 3.8.1.4, SR 3.8.1.8, SR 3.8.1.10, SR 3.8.1.13, 3.8.1.15, and SR 3.8.1.16, are applicable.</p>	In accordance with applicable SRs
<p>SR 3.8.2.2 For the LCO 3.8.2.c and LCO 3.8.2.d AC sources required to be OPERABLE, the SRs required by SR 3.8.1.16, are applicable.</p>	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources-Shutdown

LCO 3.8.5 The required channels of DC electrical sources shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems-Shutdown."

APPLICABILITY: MODES 5 and 6,  
During movement of irradiated fuel assemblies.

ACTIONS

NOTES

1. LCO.3.0.3 is not applicable.
2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC channels inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<p><u>OR</u></p> <p><del>A.2.1 Suspend CORE ALTERATIONS.</del></p> <p><u>AND</u></p>	<del>Immediately</del>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2. <sup>1</sup> <sub>2</sub> Suspend movement of irradiated fuel assemblies.	Immediately
	AND A.2. <sup>2</sup> <sub>3</sub> Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND A.2. <sup>3</sup> <sub>A</sub> Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters-Shutdown

LCO 3.8.8 Inverter(s) shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems-Shutdown."

APPLICABILITY: MODES 5 and 6,  
During movement of irradiated fuel assemblies.

ACTIONS

-----NOTE-----

LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required inverters inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	<del>A.2.1 Suspend CORE ALTERATIONS.</del>	<del>Immediately</del>
	<u>AND</u>	
	A.2.7 <sup>1</sup> Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	

Inverters-Shutdown  
3.8.8

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2. <sup>2</sup> <sub>3</sub> Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	A.2. <sup>3</sup> <sub>4</sub> <u>AND</u> Initiate action to restore required inverters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.8.1    Verify correct inverter voltage and alignment to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems-Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6,  
During movement of irradiated fuel assemblies.

ACTIONS

NOTES

1. LCO 3.0.3 is not applicable.
2. Performance of Required Actions shall not preclude completion of actions to establish a safe conservative position.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	<p><u>OR</u></p> <p><del>A.2.1 Suspend CORE ALTERATIONS.</del></p> <p><u>AND</u></p>	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2. <sup>1</sup> <sub>2</sub> Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u> A.2. <sup>2</sup> <sub>3</sub> Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	<u>AND</u> A.2. <sup>3</sup> <sub>4</sub> Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
	<u>AND</u> A.2. <sup>4</sup> <sub>5</sub> Declare associated required shutdown cooling subsystem(s) inoperable and not in operation.	Immediately

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System and the refueling pool shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	<del>A.1 Suspend CORE ALTERATIONS.</del>	Immediately
	AND A.2.1 Suspend positive reactivity additions.	Immediately
	AND A.3.2 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.1.1 Verify boron concentration is within the limit specified in the COLR.	72 hours

3.9 REFUELING OPERATIONS

3.9.2 Nuclear Instrumentation

LCO 3.9.2 Two source range monitors (SRMs) shall be OPERABLE.

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required SRM inoperable.	A.1 Suspend <u>CORE ALTERATIONS</u> <i>positive reactivity additions</i>	Immediately
	<u>AND</u>	
A. Two required SRMs inoperable.	A.2 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	<u>AND</u>	
B. Two required SRMs inoperable.	B.1 Initiate action to restore one SRM to OPERABLE status.	Immediately
	<u>AND</u>	
	B.2 Perform SR 3.9.1.1.	Once per 12 hours

### 3.9 REFUELING OPERATIONS

#### 3.9.3 Containment Penetrations

LCO 3.9.3 The containment penetrations shall be in the following status:

- a. 1. The equipment hatch closed and held in place by a minimum of four bolts, or
2. The containment outage door is capable of being closed under administrative control;
- b. One door in the emergency air lock is closed;

----- NOTE -----  
The emergency air lock temporary closure device can be used in place of an emergency air lock door.  
-----

- c. The personnel air lock shall be either:
  1. closed by one personnel air lock door, or
  2. capable of being closed by an OPERABLE personnel air lock door under administrative control.
- d. Each penetration providing direct access from the containment atmosphere to the outside atmosphere either:
  1. closed by a manual or automatic isolation valve, blind flange, or equivalent, or
  2. capable of being closed by an OPERABLE Containment Purge Valve Isolation System.

APPLICABILITY: During CORE ALTERATIONS  
During movement of irradiated fuel assemblies within containment.

Containment Penetrations  
3.9.3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	<del>A.1 Suspend CORE ALTERATIONS.</del>	<del>Immediately.</del>
	AND A.2 <sup>1</sup> Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.3.1 Verify each required containment penetration is in the required status.	7 days
SR 3.9.3.2 Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	24 months

SDC and Coolant Circulation-High Water Level  
3.9.4

3.9 REFUELING OPERATIONS

3.9.4 Shutdown Cooling (SDC) and Coolant Circulation-High Water Level

LCO 3.9.4 One SDC loop shall be OPERABLE and in operation.

----- NOTES -----

1. The required SDC loop may be not in operation for  $\leq 1$  hour per 8 hour period, provided no operations are permitted that would cause introduction of coolant into the Reactor Coolant System with boron concentration less than that required to meet the minimum boron concentration of LCO 3.9.1.
2. The shutdown cooling pumps may be removed from operation during the time required for local leak rate testing of containment penetration number 41 pursuant to the requirements of SR 3.6.1.1 or to permit maintenance on valves located in the common SDC suction line, provided:
  - a. no operations are permitted that would cause introduction of coolant into Reactor Coolant System with boron concentration less than that required to meet the minimum boron concentration of LCO 3.9.1,
  - b. *Movement of fuel assemblies within containment is* ~~CORE ALTERATIONS~~ are suspended, and
  - c. all containment penetrations are in the status described in LCO 3.9.3.

-----

APPLICABILITY: MODE 6 with the water level  $\geq 23$  ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

3.9 REFUELING OPERATIONS

3.9.6 Refueling Pool Water Level

LCO 3.9.6 Refueling pool water level shall be maintained  $\geq 23$  ft above the top of the irradiated fuel assemblies seated in the reactor vessel.

APPLICABILITY: ~~During CORE ALTERATIONS, except during coupling and uncoupling of control element assembly drive shafts,~~  
During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling pool water level not within limit.	<del>A.1 Suspend CORE ALTERATIONS.</del>	<del>Immediately</del>
	<del>AND</del> A.2 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.6.1 Verify refueling pool water level is $\geq 23$ ft above the top of the irradiated fuel assemblies seated in the reactor vessel.	24 hours