

June 27, 2002
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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Response To Request For Additional Information –
Technical Specification Change Request No. 298, Refueling Interlocks
(TAC NO. MB2893)

Oyster Creek Generating Station (Oyster Creek)
Facility Operating License No. DPR-16
NRC Docket No. 50-219

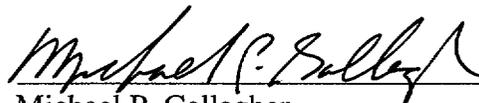
This letter provides additional information in response to NRC request for additional information as discussed in conference calls on April 18, 2002 and May 31, 2002 regarding Oyster Creek Technical Specification Request No. 298, submitted to NRC for review on September 11, 2001. The additional information is provided in Enclosure 1.

If any additional information is needed, please contact David J. Distel (610) 765-5517.

I declare under penalty of perjury that the foregoing is true and correct.

Very truly yours,

06-27-02
Executed On



Michael P. Gallagher
Director, Licensing & Regulatory Affairs
Mid Atlantic Regional Operating Group

Enclosures: 1) Response to Request for Additional Information
2) Summary of Regulatory Commitments

cc: H. J. Miller, USNRC Administrator, Region I
P. S. Tam, USNRC Senior Project Manager, Oyster Creek
R. J. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 01075

A001

ENCLOSURE 1

OYSTER CREEK

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATION CHANGE REQUEST No. 298
REFUELING INTERLOCKS**

1. **NRC Question**

Identify the specific refueling interlocks affected by Technical Specification Change Request (TSCR) No. 298. Describe design basis safety function performed by these specific interlocks, and the events or accidents being protected against. If the fuel handling accident is not affected describe why not. Describe how the proposed compensatory measures accomplish the design safety function.

Response

The Oyster Creek refueling platform is a motor driven bridge and trolley which traverses the space between the reactor well and the fuel storage pool. The fuel grapple is mounted on the trolley. Two auxiliary hoists are mounted on the refueling platform. Together with the fuel grapple, the auxiliary hoists perform all necessary tasks in handling the irradiated fuel and the core components. The fuel grapple is provided with a load cell interlock to prevent fuel grapple overload. Control of the refueling platform bridge and trolley are interlocked so they cannot be controlled by more than one operator at a time. A Senior Reactor Operator must supervise all refueling operations. The refueling platform is provided with refueling interlocks, as described below.

When the mode switch is in the REFUEL position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on the hoist. Likewise, if the refueling platform is over the core with fuel on the hoist, control rod motion is blocked by the interlocks. With the mode switch in the REFUEL position only one control rod can be withdrawn.

The All-Rod-In (ARI) permissive to the refueling interlocks is the only circuit to be bypassed by the proposed change. The ARI permissive is intended to prevent inadvertent criticality due to loading fuel in a cell with its control rod withdrawn.

The postulated Fuel Handling Accident (FHA) results from dropping a fuel bundle onto the top of the core. This is only possible if the fuel assembly handle, the fuel grapple, or the grapple cable, breaks or improper grappling occurs. Interlocks are provided for the refueling equipment to minimize the potential for the postulated fuel handling accident. These interlocks include the Fuel Grapple Full-Up Position Switch, Hoist Load Switches, Bridge Position Switches, Hoist Maximum Load Limit Switches, Hoist Position Limit Switches, and Auxiliary Hoist Overload Power Trip. These interlocks are not affected by the proposed change. Only the refuel bridge interlocks associated with the ARI control rod withdrawal permissive are affected by the proposed Technical Specification change. Therefore, the postulated FHA analysis is not impacted.

The proposed compensatory measures supporting the change will provide an equivalent method of performing the design function of the ARI permissive. Before bypassing the ARI permissive, the operator will be required by procedure to verify that all rods are fully

inserted by verifying for example the rod position indication lights on Panel 4F in the main control room and then physically disabling the Control Rod Withdrawal function such as by pulling the associated fuses and tagging out the controls. These manual actions are peer checked to provide additional independent verification of accomplishment. By physically disabling Control Rod Withdrawal, the intent of the ARI permissive to preclude rod withdrawal with fuel on the refuel bridge mast is satisfied, thereby providing an equivalent level of protection against achieving a critical condition in the core during refueling.

2. **NRC Question**

Provide discussion on intention to restore operability of the interlocks should they become inoperable.

Response

The refueling interlocks themselves are not being bypassed. The ARI permissive is the only circuit to be bypassed, as described above. The proposed change will allow refueling operations to continue if the ARI permissive fails and becomes inoperable or is bypassed to allow maintenance during refueling operations that would otherwise result in false indications of rod withdrawal. By verifying that all rods are fully inserted and then physically disabling Control Rod Withdrawal in accordance with plant procedures, the equivalent design function as provided by the ARI permissive is accomplished. Therefore, allowing the ARI permissive to remain inoperable during refueling operations is not risk significant. The Oyster Creek design basis will continue to include the refueling interlock safety functions as described in the Oyster Creek Updated Final Safety Analysis Report (UFSAR). As described in response to Question No. 5, the refueling equipment interlocks are still required to be operable and existing Technical Specification surveillance procedures require performance of operability testing prior to initial in-vessel fuel movement.

3. **NRC Question**

Provide commitment to update operating procedures to include the proposed Technical Specification compensatory measures.

Response

The proposed compensatory measures will be incorporated into the appropriate plant operating procedures as described in response to Question No. 5 upon NRC approval of the proposed Technical Specification change. These measures will compensate for the function of the inoperable interlocks.

4. **NRC Question**

What has your operating experience been with the refueling interlocks becoming inoperable (frequency of inoperability)?

Response

The refueling interlocks at Oyster Creek have been reliable. There is very limited experience with inoperability of the refueling interlocks due to the robustness of the design. The proposed change is not related to any existing equipment unreliability issues at Oyster Creek. In accordance with existing Oyster Creek Technical Specification 4.9 the refueling interlocks are required to be tested prior to any fuel handling with the head off the reactor vessel, at weekly intervals thereafter until no longer required, and following any repair work associated with the interlocks. These existing surveillance requirements are not changed.

5. **NRC Question**

What efficiencies will be gained from implementing compensatory measures in lieu of restoring the interlocks to operable status during the refueling evolution ?

Response

Efficiencies are gained in that implementation of the proposed compensatory measures would avoid disruption of ongoing refueling activities as a result of: (1) a potential equipment failure related to the ARI permissive, or (2) performance of necessary maintenance that would otherwise result in false indications of rod withdrawal such as during Control Rod Position Indicating Probe (PIP) maintenance.

The proposed change to Technical Specification 3.9.C is not intended to disable the ARI permissive to the refueling interlocks indefinitely. Existing Oyster Creek Technical Specification 4.9.A requires that the refueling interlocks and instruments used during refueling shall be tested prior to any fuel handling with the head off the reactor vessel. This surveillance performed at the beginning of a refueling outage provides initial assurance of refueling interlock operability. The proposed change is not intended to avoid performance of the initial Technical Specification 4.9.A surveillance requirement prior to in-vessel fuel movement. It is expected that the refueling interlocks would be operable during fuel moves except for an unexpected equipment failure or during maintenance that would otherwise result in false indications of rod withdrawal during

which all rods will be verified as fully inserted and rod withdrawal prevented. Core alterations would be allowed to continue at the same time that for example PIP maintenance is being performed or repair of a failed ARI permissive is being performed. The proposed change is intended to provide the flexibility to continue fuel movements under certain circumstances provided the specified compensatory measures are taken which ensure that an inadvertent criticality event will not occur. These compensatory actions will be specified in Oyster Creek Reactor Refueling Procedure No. 205.0 and Rod Withdrawal/Insertion During Refueling Procedure No. 205.5.

To clarify the intent of the change proposed by Technical Specification Change Request No. 298, the following statement will be added to the Bases for Technical Specification 3.9 when Technical Specification Change Request No. 298 is approved:

“It is not the intent of the alternative option in Specification 3.9.C to eliminate the first performance of Technical Specification Surveillance 4.9.A prior to in-vessel fuel movement. It is expected that the refueling interlocks would be operable during fuel moves except for equipment failures or during maintenance that would otherwise result in false indications of rod withdrawal during which all rods will be verified as fully inserted and rod withdrawal prevented.”

This additional clarification has no effect on the safety evaluation or no significant hazards consideration evaluation previously submitted for Technical Specification Change Request No. 298, dated September 11, 2001.

Enclosure 2

SUMMARY OF REGULATORY COMMITMENTS

The following table summarizes those regulatory commitments established in this document. Any other actions discussed in the submittal represent intended or planned actions by AmerGen. They are described to the NRC for the NRC's information and are not regulatory commitments.

<u>COMMITMENT</u>	<u>COMMITTED DATE OR "OUTAGE"</u>
1. Revise Reactor Refueling Procedure No. 205.0 and Rod Withdrawal/Insertion During Refueling Procedure No. 205.5 to incorporate specified compensatory actions.	1R19
2. Incorporate Technical Specification 3.9 Basis clarification as stated in Response to Question No. 5.	1R19