AmerGen Energy Company, LLC
200 Exelon Way
Suite 345
Kennett Square, PA 19348

www.exeloncorp.com

AmerGen
An Exelon/British Energy Company

10 CFR 50.90

September 19, 2002
2130-02-20256

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 August 21, 2002 and September 3, 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.

No new regulatory commitments are established by this submittal. 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,

09-19-02
Executed On

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

Enclosures: 1) Response to Request for Additional Information

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**

The licensee needs to establish how it can be verified positively that all control rods are inserted, if the all-rods-in (ARI) interlock is inoperable, possibly due to false reading from a position indication probe. If the position indication probe (PIP) is malfunctioning, and the licensee wants to rely on the proposed alternative option, all control rods must be successfully verified to be fully inserted. Identify the ways and steps the licensee will take to ensure all control rods are inserted, before loading fuel with inoperable refueling interlocks.

Response

The all-rods-in (ARI) signal is produced by the Reactor Manual Control System (RMCS) using the full-in position switch from each control rod position indication probe (PIP). If any one of the full-in switches were to fail to actuate, the ARI signal would be lost. Each full-in switch also actuates a green back-lighting for the associated control rod on the full core control rod position display located on control room panel 4F. Each PIP contains a switch for position "00," adjacent to the full-in switch, that provides an alternate indication that the control rod is fully inserted. The control rod position is displayed on the full core control rod position display located on control room panel 4F, and is also input to the Rod Worth Minimizer and passed on to the Plant Computer System and Core Monitoring Computer. The green back-lighting and the "00" position indication provide redundant indications that a control rod is fully inserted.

2. **NRC Question**

To prevent criticality during refueling, the refueling interlocks ensure that fuel assemblies are not loaded with any control rod withdrawn. To prevent these conditions from developing, the following are required to be operable: the all-rods-in, the refueling platform position, the refueling platform fuel grapple fuel loaded, the refueling platform trolley frame mounted hoist fuel loaded, the refueling platform monorail mounted hoist fuel loaded, the refueling platform fuel grapple fully retracted position. Are these inputs combined in logic circuits which provide refueling equipment or control rod blocks to prevent operations that could result in criticality during refueling operations? How does an inoperable (disabled) ARI permissive affect the above and your overall refueling operations (e.g., moving the refueling bridge over the core with fuel grapple loaded)?

Response

The all-rods-in (ARI) signal is produced by the Reactor Manual Control System (RMCS) and input to the refueling bridge computer (RBC). The RBC also receives signals to determine whether the main hoist is loaded and if the refueling platform is over the core region. The RBC uses Programmable Logic Controller (PLC) software logic to prevent refueling platform or main hoist movement when the hoisted is loaded with the refueling platform over the core region, and the ARI signal is not present. This function will prevent fuel movement in the core with any control rod withdrawn or when the ARI permissive signal is not present. The RBC also provides an input to the RMCS to indicate when the hoist is loaded with the refueling platform over the core region. This signal is used by RMCS to produce a Rod Block and thus prevent rod movement during fuel movement in the core. The refueling platform trolley frame mounted and monorail mounted auxiliary hoists have their hoist jam limits set at less than the weight of a fuel bundle and are thus not capable of moving fuel. An inoperable or disabled ARI permissive that is not bypassed would impact refueling operations negatively in that it would prevent all movement of fuel in the core.

3. **NRC Question**

In the supplemental letter dated June 27, 2002, AmerGen indicated that it would complete the initial testing of the interlock prior to in-vessel fuel movement. The NRC staff finds that refuel interlocks should be tested every seven (7) days to demonstrate that the interlock will function properly when simulated or actual signal indicative of a required condition is injected into the logic. What is the frequency for the refueling interlocks? If the compensatory measures obviate the need for the surveillance, then should the technical specification requirement be removed from the technical specification and controlled administratively? Provide your basis for keeping or removing the technical specification requirement.

Response

In accordance with existing Oyster Creek Technical Specification 4.9.A the refueling interlocks are required to be tested prior to any fuel handling with the head off the reactor vessel, and at weekly intervals thereafter until no longer required, and following any repair work associated with the interlocks. Based on the proposed change to section 3.9.C of the Oyster Creek Technical Specifications and the associated compensatory measures, the refueling interlocks are no longer required when the ARI permissive is inoperable or disabled for maintenance and all control rods are verified to be fully inserted and control rod withdrawal capability has been disabled. The existing Technical Specification 4.9.A surveillance remains valid since the expectation is that the refueling interlocks, including the ARI permissive 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. When the ARI permissive is inoperable or disabled in accordance with the proposed change, the refueling interlock will not be used during refueling and Technical Specification 4.9.A would not be considered applicable until the ARI permissive is restored.

Additionally, Technical Specification 3.9.C should be retained since the compensatory measures are very restrictive, and would not allow the option of withdrawing individual control rods in defueled cells as provided by existing Technical Specification 3.9.F. Refueling interlocks must be operable when Technical Specification 3.9.F applies and thus Technical Specification surveillance 4.9.A is also applicable in this condition.

Therefore, both the Technical Specification 3.9.C requirements and the refueling interlock surveillance requirement in Technical Specification 4.9.A should remain in the Oyster Creek Technical Specifications.