GPU NUCLEAR CORPORATION
OYSTER CREEK NUCLEAR GENERATING STATION

PROVISIONAL OPERATING
LICENSE NO. DPR-16

Technical Specification
Change Request No. 162
Docket No. 50-219

Applicant submits, by this Technical Specification Change Request No. 162 to the Oyster Creek Nuclear Generating Station Technical Specifications, a change to pages 3.2-3, 3.2-7, 3.2-8, 4.2-2, 4.2-4, 6-18 and Figures 3.2.1 and 3.2.2.

By: E E Fitzpatrick
E. E. Fitzpatrick
Vice President & Director
Oyster Creek

Sworn and subscribed to before me this 10th day of May 1988.

Diana M. DeBlasio
NOTARY PUBLIC OF NEW JERSEY

DIANA M. DeBLASIO
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 6·5·91

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF)
)
GPU NUCLEAR CORPORATION)

DOCKET NO. 50-219

CERTIFICATE OF SERVICE

This is to certify that a copy of Technical Specification Change Request No. 162 for the Oyster Creek Nuclear Generating Station Technical Specifications, filed with the United States Nuclear Regulatory Commission on May 10, 1988, has this day of May 10, 1988, been served on the Mayor of Lacey Township, Ocean County, New Jersey by deposit in the United States mail, addressed as follows:

The Honorable Christopher Connors
Mayor of Lacey Township
818 West Lacey Road
Forked River, NJ 08731

By: E E Fitzpatrick
E. E. Fitzpatrick
Vice President & Director
Oyster Creek

DATED: May 10, 1988

OYSTER CREEK NUCLEAR GENERATING STATION
PROVISIONAL OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 162

Applicant hereby requests the Commission to change Appendix A to the above captioned license as indicated below. Pursuant to 10CFR50.91, an analysis concerning the determination of no significant hazards considerations is also presented:

1. Section to be Changed

   3.2, 4.2 and 6.9

2. Extent of Change

   Change specifications to reflect the use of an enriched sodium pentaborate solution in the SLCS.

3. Changes Requested

   As indicated in the attached revised Technical Specification pages 3.2-3, 3.2-7, 3.2-8, 4.2-2, 4.2-4, 6.18, and Figures 3.2.1 and 3.2.2.

4. Discussion

   Paragraph (c)(4) of 10CFR50.62 "Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants" requires that each boiling water reactor must have a SLCS with a minimum flow capacity and boron content equivalent in control capacity to 86 gallons per minute of 13 weight percent sodium pentaborate solution. The OCNGS will meet the equivalency requirements based on a minimum solution concentration of 15.0 wt. percent, a Boron-10 enrichment of 35 atom percent and a 30 gpm pump flow rate.

   The SLCS is designed to bring the reactor to a cold shutdown condition from the full power steady state operating condition at any time in core life independent of control rod system capabilities. To bring the reactor from full power to cold shutdown, sufficient liquid control must be inserted to give a negative reactivity worth equal to the combined effects of rated coolant voids, fuel Doppler, xenon, samarium and temperature change plus shutdown margin. This requires a Boron-10 concentration of 110 ppm in the reactor. An additional 25 percent Boron-10, which results in an average Boron-10 concentration in the reactor of 138 ppm, is inserted to provide margin for mixing uncertainties in the reactor. The system is required to insert the solution within 120 minutes in order to override the rate of reactivity insertion due to cooldown of the reactor following the xenon peak.

The shaded area of Figure 3.2.1 defines the region of required liquid control tank volume and concentration which results in 138 ppm Boron-10 being injected in less than or equal to 120 minutes, thus ensuring that the reactor can be brought to a cold shutdown condition from the full power steady state operating condition at any time in core life independent of control rod system capabilities. Because Figure 3.2.1 has been revised to reflect the increased Boron-10 isotopic enrichment, an additional requirement has been added to evaluate the solution's capability to meet the original design shutdown criteria whenever the Boron-10 enrichment requirement is not met. Figure 3.2.2 has been changed to accommodate the minimum solution wt. percent of Figure 3.2.1.

The basis of the existing Technical Specification states "The system is required to insert the solution in a time interval between 60-120 minutes to provide for good mixing in the reactor and to override the rate of reactivity insertion due to cooldown of the reactor following the xenon peak". Achieving compliance with the equivalency requirement of 10CFR50.62 (c)(4) results in the cold shutdown Boron-10 concentration (138 ppm) being inserted in less than 60 minutes; approximately [illegible] minutes at the maximum concentration - minimum volume point of 19.6 wt. percent and 913 gals. Boron mixing tests conducted by General Electric Company (NEDC-30921 "Assessment of ATWS Compliance Alternatives", dated July 1985) for standpipe injection demonstrated adequate boron mixing. For Oyster Creek with the ring sparger injection mode, improved mixing characteristics are expected relative to standpipe injection.

As indicated above, the SLCS is also required to meet the provisions of 10CFR50.62(c)(4). The crosshatched area of Figure 3.2.1 defines the region of required liquid control tank volume and concentration which satisfies the equivalency requirements. Action statements associated with not meeting the 10CFR50.62(c)(4) requirements are provided.

5. Determination

GPU Nuclear has determined that operation of the Oyster Creek Nuclear Generating Station in accordance with the proposed Technical Specifications does not involve a significant hazard. The changes do not:

1. Involve a significant increase in the probability or the consequence of an accident previously evaluated. The proposed changes reflect the use of enriched boron in the SLCS and ensure that the reactor can be brought to a cold shutdown condition from full power steady state operating conditions at any time in core life independent of control rod system capabilities. The probability or the consequence of an accident previously evaluated are unaltered by the proposed change.

2. Create the possibility of a new or different kind of accident from any previously evaluated. The proposed changes do not alter the circumstances under which the SLCS would be used nor the manner in which the SLCS would be used.

3. Involve a significant reduction in a margin of safety. The proposed changes ensure that the reactor can be brought to a cold shutdown condition from full power steady state operating conditions at any time in core life independent of control rod system capabilities.