GPU NUCLEAR CORPORATION
OYSTER CREEK NUCLEAR GENERATING STATION

Facility Operating
License No. DPR-16

Technical Specification
Change Request No. 221
Docket No. 50-219

Applicant submits, by this Technical Specification Change Request No. 221 to the Oyster Creek Nuclear Generating Station Operating License, proposed changes to pages 2.3-3 and 2.3-7.

By _____
J. J. Barton
Vice President and Director
Oyster Creek

Sworn and Subscribed to before me this 24th day of June 1994.

_____
A Notary Public of NJ

JUDITH M. CROWE
Notary Public of New Jersey
My Commission Expires 07/25/95

OYSTER CREEK NUCLEAR GENERATING STATION
FACILITY OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 221

Removal of the Recirculation Flow Scram

Applicant hereby requests the Commission to change Appendix A to the above captioned license as indicated below, and pursuant to 10 CFR 50.92, an analysis concerning the determination of no significant hazards considerations is also presented.

1.0 SECTION TO BE CHANGED

Section 2.3.0 and 2.3 Bases.

2.0 EXTENT OF CHANGE

Delete Technical Specification 2.3.0 and its associated Bases.

3.0 CHANGES REQUESTED

The requested deletions are shown on attached Technical Specification pages 2.3-3 and 2.3-7.

4.0 DISCUSSION

The High Recirculation Flow Scram was added to the Oyster Creek Technical Specifications (TS) Section 2.3 by Amendment No. 75 for Cycle 10 operation along with the introduction of the k_f factor. The k_f factor is a Critical Power Ratio (CPR) limit multiplier which causes the limit to become more restrictive at low core flows; i.e. $\leq$ 90% rated flow. The k_f factor is determined from a curve based on a maximum recirculation flow at 117% of rated flow. The k_f curve provides protection against a flow increase transient to prevent the fuel cladding integrity safety limit of CPR $\leq$ 1.07 from being exceeded. The fuel cladding integrity safety limit is defined as the CPR in the limiting fuel assembly for which more than 99.9% of the fuel rods in the core are expected to avoid boiling transition.

4.0 **DISCUSSION - (Cont'd)**

Typically, the maximum recirculation system flow is set by mechanical stops on the recirculation motor-generator (MG) set scoop tube positioner arm. Oyster Creek does not use these mechanical stops on any of the five recirculation MG sets. It was decided to use a recirculation high flow scram in lieu of the mechanical stops to limit a flow increase transient by setting the scram valve at a flow corresponding to the k_f curve. This is specified in our present TS bases statement supporting a high recirculation flow scram.

GPUN recently performed an analysis and it was determined the maximum attainable recirculation flow with all five pumps running is 114.8% of rated flow. This is the maximum recirculation flow under worst case failure mode of the controls providing the highest possible pump speed. Therefore, the high recirculation flow scram setpoint is not necessary to limit flow transients $\geq$ 117% of rated flow. The k_f curve is used to provide protection for the fuel cladding integrity safety limit.

For the past three operating cycles at Oyster Creek, successful operating experience using the 117% k_f curve has been exhibited. The k_f curve is contained in the Core Operating Limits Report (COLR). The k_f curve is input the plant computer system via a thermal limit program module of the Power Shape Monitoring System (PSMS).

The Oyster Creek Updated Final Safety Analysis Report (UFSAR) discusses a flow controller malfunction, increase in core flow to 117% of rated, in the Chapter 15 Accident Analysis Section 15.4.5. Since the operation of the recirculation system remains unchanged, the analysis of the flow controller malfunction event in this section is not affected by this proposed TSCR. Also the high recirculation flow scram feature is not used to mitigate any other event contained in the accident analysis chapter of the UFSAR.

The recirculation loop flow surveillance TS contained in Table 4.1.1 Item #25 will remain unchanged. Recirculation flow is also used by the Average Power Range Monitor (APRM) system for flow biasing. Therefore, the recirculation loop flow will still need to be calibrated to support APRM operability. Only Oyster Creek approved station surveillance procedures will require revision once the proposed TSCR is approved and a plant modification removes the high recirculation flow scram feature.

5.0 DETERMINATION

We have determined that the proposed Technical Specification deletion includes no significant hazards consideration as discussed below.

1. The increase in core flow accident previously evaluated in the UFSAR is not affected by this proposed TSCR. Analysis has shown that the maximum recirculation flow cannot be $\geq$ 117% of rated flow. Maximum attainable recirculation flow with all five pumps running is 114.8% of rated flow. A high recirculation flow scram is not necessary to protect the fuel cladding integrity safety limit since the maximum attainable recirculation flow is less than the maximum assumed recirculation flow used in the UFSAR accident analysis. Therefore, it can be concluded the proposed TSCR does not include a significant increase in the probability or the consequences of an accident previously evaluated.

2. Operation of the recirculation system remains unchanged. An increase in core flow accident has been previously evaluated and is not affected by the removal of the high recirculation flow scram feature. The proposed TSCR does not create the possibility of a new or different kind of accident from any previously evaluated.

3. The high recirculation flow scram is not used to mitigate any event discussed in the accident analysis chapter of the UFSAR. The k_f factor via the 117% curve contained in the COLR provides protection against a flow increase transient to prevent the fuel cladding integrity safety limit of CPR $\leq$ 1.07 from being exceeded. Based on these considerations, it is concluded that the proposed TSCR does not involve a significant reduction in a margin of safety.

6.0 IMPLEMENTATION

We request that the amendment authorizing this change become effective 60 days after issuance.