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June 19, 1986
 NRC/TMI 86-058

Docket No. 50-320

Mr. F. R. Standerfer
 Vice President/Director, TMI-2
 GPU Nuclear Corporation
 P. O. Box 480
 Middletown, PA 17057

Dear Mr. Standerfer:

Subject: Safety Evaluation Report (SER) for Core Stratification Sample Acquisition, Revision 4

The Nuclear Regulatory Commission (NRC) staff has reviewed your June 11, 1986 Safety Evaluation Report (SER) for Core Stratification Sample Acquisition. As stated in the enclosed safety evaluation issued by the staff, we conclude that the proposed activities can be accomplished without significant risk to the health and safety of the public provided that they are in accordance with the limitations stated in your SER. This activity falls within the scope of activities previously considered in the Programmatic Environmental Impact Statement.

We therefore approve the operation of the system as described in your SER contingent upon the submittal of the related procedures subject to Technical Specification 6.8.2.

Sincerely,

ORIGINAL SIGNED BY
 William D. Travers

William D. Travers
 Director
 TMI-2 Cleanup Project Directorate

Enclosure: As stated

cc: T. F. Demmitt
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CORE STRATIFICATION SAMPLE ACQUISITION

SAFETY EVALUATION REPORT

INTRODUCTION

The Core Stratification Sample Acquisition Safety Evaluation Reports (SER) revision 1, (reference 1) and revision 3 (reference 2) have been reviewed and approved by the NRC staff (references 3 and 4). GPUN submitted revision 4 (reference 5) on June 11, 1986. This revision clarifies the drilling limits and flush water sources, allows the option to use other water cleanup systems other than the Defueling Water Cleanup System, and addresses the option of leaving casing in a bore hole.

EVALUATION

The changes addressed by this revision are evaluated as follows:

1. The drilling depth has been clarified to indicate that core bore will be limited to the top of the flow distributor unless TV camera viewing of the lower head region immediately below the drill bit shows a clear path. This clarification provides better assurance that the load produced by drilling operations will not be imparted to incore nozzle penetrations.
2. Sources of borated water to be used for drill bit cooling, casing and drill string rinse, and camera purge have been clarified. The clarification indicates that bit cooling and flush will be normally from the Internals Indexing Fixture region of the reactor vessel; camera purge water will be from two 55-gallon supply tanks; and casing and drill string rinse will be from the Borated Water Storage Tank. In all these cases, the water source is required by procedure to have sufficient boration; i.e., greater than 4950 ppm boron to prevent dilution of the boron concentration being maintained in the reactor vessel. This clarification better identified water sources to be used.
3. In order to provide increased flexibility, other methods of reactor water cleanup are proposed for use if the Defueling Water Cleanup System (DWCS) is not operational. These other systems include the Submerged Demineralizer System and the Temporary Reactor Vessel Filtration System. While DWCS is preferable in terms of effectiveness in monitoring water clarity, the other systems are considered to be able to maintain sufficient water clarity should their use be required.

These clarifications do not depart from or alter the staff conclusions in references 3 and 4.

4. In order to provide for long term camera access to the lower core region after a successful core bore, the option to leave a portion of the casing extending approximately one foot above the surface of the fuel debris was proposed. In this event, the casing will be cut so that rejoining to other sections of casing is not possible. Creation of a string of casing long enough to reach the vessel wall is effectively prevented. In this

case the staff finds that an equivalent level of protection of reactor vessel integrity to that previously evaluated, is maintained.

Retrieval of the casing is possible and has been planned if this option is exercised. Sufficient tooling to extract the casing is available and has been demonstrated as effective.

CONCLUSIONS

The staff has reviewed the changes to the Core Stratification Sample Acquisition Program presented in revision 4. The majority of the changes do not affect the staff's previous conclusions. The staff has determined that the licensee's proposed methodology for leaving drill casing in the core has an adequate level of safety incorporated. We therefore conclude that Core Stratification Sample Acquisition activities (revision 4) can be implemented without significant risk to the health and safety of the public.

References

1. GPUN letter with attached SER from F. R. Standerfer, 4410-85-L-0147, to B. J. Snyder dated August 30, 1985.
2. GPUN letter with attached SER from F. R. Standerfer, 4410-85-L-0248, to W. D. Travers dated December 31, 1985.
3. NRC letter with attached Safety Evaluation NRC/TMI 86-041, W. D. Travers to F. R. Standerfer dated May 5, 1986.
4. NRC letter with attached Safety Evaluation NRC/TMI 86-052, W. D. Travers to F. R. Standerfer dated May 28, 1986.
5. GPUN letter with attached SER from F. R. Standerfer, 4410-86-L-0101, to W. D. Travers dated June 11, 1986.

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