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October 1, 1987  
 NRC/TMI 87-076

Docket No. 50-320

Mr. F. R. Standerfer  
 Vice President/Director  
 Three Mile Island Unit 2  
 GPU Nuclear Corporation  
 P. O. Box 480  
 Middletown, PA 17057

Dear Mr. Standerfer:

Subject: Staging of Nittman Solidification Liners in the Waste Handling and Packaging Facility (R65359)

In your letter of July 24, 1987 you requested NRC approval for the staging of two radioactive waste solidification liners in the Waste Handling and Packaging Facility. These two liners contain different waste forms, radionuclide mix and radionuclide inventory than previously analyzed in the safety evaluations. Based on our review of the information you provided we have determined that the proposed change does not involve a significant hazard or a significant risk to the health and safety of the public. We therefore approve these changes. Our safety evaluation is enclosed.

Sincerely,

ORIGINAL SIGNED BY:  
 William D. Travers

William D. Travers, Director  
 TMI-2 Cleanup Project Directorate

Enclosures: As stated

cc: T. F. Doherty  
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STAGING OF HITTMAN LINERS IN THE WASTE HANDLING  
AND PACKAGING FACILITY

SAFETY EVALUATION

INTRODUCTION

The Waste Handling and Packaging Facility (WHPF) is designed to process and package radioactive and contaminated items generated by the IM1-2 cleanup. The NRC staff found the proposed operation of the WHPF acceptable and documented approval in the July 10, 1986 safety evaluation. (reference 2). By references 3 and 4 General Public Utilities Nuclear (GPUN) Corporation, the licensee, requested that the radionuclide mix and inventory allowed in the WHPF be updated to reflect the change in the mix as the cleanup and defueling progressed. The NRC staff reviewed these changes, found them acceptable and approved them in reference 5.

The current proposal would allow the use of the WHPF for inspection of two previously packaged liners. The liners contain 274 and 228 curies respectively with strontium and cesium being the principal radionuclides. The resin and sand containing the radionuclides have been solidified in concrete inside the liners.

EVALUATION

The staff has evaluated the potential offsite dose consequences of potential accidents associated with staging the two Hittman liners in the WHPF and compared the results with the previous analyses. The worst case previously assumed was 7.5 Ci of "normal" waste containing 90.3% Cs-137, 2.4% Cs-134 and 7.3% Sr-90 and an additional 7.5 Ci of "defueling" waste containing 50% Sr-90, 10% Cs-134, 34% Cs-137 and 6% transuranic (actinide) activity. The worst case accident previously analyzed was a fire in which paper, rags, and decontamination materials containing the radionuclides burned. The resultant hypothetical worst case offsite dose commitment was 119 mrem.

In the current case the radionuclide mix is 89.2% Sr-90, 7.3% Cs-137, 2.2% Sb-125 and 1.3% other radionuclides with 0.1% being actinides (including uranium and transuranics). Since the concrete will not burn the worst case accident considered was a drop of the liner. The resultant hypothetical offsite dose commitment was 7 mrem. This is well within the bounds previously analyzed and is a small part of the limits in 10 CFR 100.

CONCLUSION

The staff concludes that the staging and inspection of the Hittman liners in the WHPF does not pose a significant risk to the health and safety of the public and does not involve a significant hazard.

#### REFERENCES

1. GFU letter 4410-85-L-0128, F. R. Standerfer to W. D. Travers, Technical Evaluation Report for the Waste Handling and Packaging Facility, dated November 12, 1985.
2. NRC letter NRC/TM1-86-068, W. D. Travers to F. R. Standerfer, Safety Evaluation for Waste Handling and Packaging Facility and Recovery Operations Plan Change No. 34 dated July 10, 1986.
3. GPUN letter 4410-86-L-0219, F. R. Standerfer to W. D. Travers, Waste Handling and Packaging Facility Technical Evaluation Report, dated January 14, 1987.
4. GPUN letter 4410-87-L-0016, F. R. Standerfer to W. D. Travers, Waste Handling and Packaging Facility Technical Evaluation Report, dated February 2, 1987.
5. NRC letter NRC/TM1-87-017, W. D. Travers to F. R. Standerfer, Safety Evaluation for the Waste Handling and Packaging Facility dated March 5, 1987.
6. GPUN letter 4410-87-L-0062, F. R. Standerfer to W. D. Travers, Staging of Hittman Solidification Liners in the Waste Handling and Packaging Facility, dated July 28, 1987.