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July 23, 1986

TMI-2 Cleanup Project Directorate
Attn: Dr. W. D. Travers
Director
US Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, PA 17057

Dear Dr. Travers:

Three Mile Island Nuclear Station, Unit 2 (TMI-2) Operating License No. DPR-73 Dockat No. 50-320 Use of Core Stratification Sample Acquisition Tool for Defueling

The purpose of this letter is to request approval of the GPU Nuclear proposal to use the core stratification sample acquisition (core bore) tooling as a defueling tool as described in Reference 1. The core bore tool will use a solid faced bit to perforate the hard crust region of the TMI-2 core, down to the lower grid support structure, at multiple locations using the defueling work platform (DWP) orientation system to position the drill mechanism.

Operation in the proposed mode is bounded by Reference 2 except that drilling sites will be located using the defueling work platform locating system as opposed to the theodolite system described in Reference 1. The theodolite system will be used to establish boundaries for the initial drilling zone. Drilling operations for this initial phase will be restricted to the established zone which will not include locations containing incore strings. Individual drilling sites within this zone will be located using the defueling platform locating system. Additional drilling zones will be established using either the theodolite system or the work platform locating system depending on the experience gained drilling in the first zone. During this initial phase, it is possible to encounter an incore string displaced from a adjoining element. However, Reference 2 concluded that no damage to an incore was credible since the drill has no mechanism to catch the incore string and impart a load.

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The currently proposed operation will use the same mechanical limits (Reference 2) imposed for core boring above the lower grid support structure. Drilling at locations containing incore instrument strings is currently being evaluated. This activity will be addressed in future correspondence which will provide appropriate technical information and seek appropriate NRC approvals.

Other safety concerns include pyrophoricity and criticality. Pyrophoricity issues are bounded by Reference 2; heat generated by the drill bit is readily dissipated by the boring tool flush water during drilling operations. Previous operations used a drill bit with a surface area of approximately 4.7 sq. in. The proposed operation uses a bit with a surface area of approximately 9.62 sq. in. Both bits have a outside diameter of approximately 3 1/2 inches. Although flush water flow during both operations is the same (i.e., 3 to 6 gpm), this flow is sufficient to remove any heat generated. Criticality discussions contained in Reference 2 remain valid.

It is concluded that the proposed operation is bounded by Reference 2 and can be performed without undue risk to the health and safety of the public.

Sincerely. Standerfet

Vice President/Director, TMI-2

FRS/RBS/eml

Attachment

ATTACHMENT 4410-86-L-0123

## REFERENCES

 Defueling Safety Evaluation Report - Revision 10, GPU Nuclear letter 4410-86-L-0049 dated May 15, 1986, F. R. Standerfer to W. D. Travers

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 Core Stratification Sample Acquisition Safety Evaluation Report -Revision 4, GPU Nuclear letter 4410-86-L-0101 dated June 11, 1986, F. R. Standerfer to W. D. Travers