



GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

(717) 948-8461

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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
Docket No. 50-320
Hydraulic Impact Chisel

The purpose of this letter is to advise you of GPU Nuclear's proposal to utilize a hydraulic impact chisel to separate fused structural material and perform other sizing operations in the reactor vessel. The activity is necessary since the fused material cannot be accommodated in defueling canisters or debris containers in its current condition.

The use of the impact chisel is not described in the current version of the Early Defueling SER. Thus it is not approved within the current scope of defueling. This letter is intended to document that the sizing activities performed with the impact chisel are bounded by previous submittals and can proceed safely.

The impact chisel is a hydraulically actuated, jackhammer-type tool that can be utilized for separating fused material or breaking apart hard, friable materials. The maximum capacity of the chisel is approximately 2000 impacts/minute with an energy of approximately 10 foot-pounds. The chisel will be supported either by a long handled tool or the manual tool positioner (when installed). The orientation of the chisel can be varied to achieve any angle of impact from vertical to horizontal. Several different bits are available for various applications.

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Two potential safety issues attendant to the proposed activity are impact energy and the leak of hydraulic fluids.

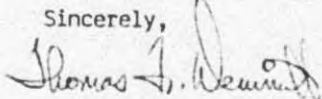
The impact energy of the hydraulic impact chisel is approximately 10 foot-pounds. This force is significantly less than those postulated in the Safety Evaluation Report for Heavy Load Handling over the Reactor Vessel (Reference 1). It is also less than the energy imparted to the core area by the displacement of end fittings and spiders and the toppling of fuel elements into the debris bed during preparation for plenum removal. In addition, any energy imparted to the debris bed will be distributed by the debris.

Although it is intended that operation of the hydraulic impact chisel will be limited to the surface of the debris bed, there exists a potential that the chisel may impact the "hard stop" or crust layer below the debris bed. The resultant effect of the impact of the chisel on the crust layer cannot be defined; however, the effect is bounded by Reference 1 if it is assumed that the crust collapses and the resultant shifting of material breaks one or more instrument tube-to-vessel-wall welds. Thus, any effects due to the operation of the hydraulic impact chisel are bounded by previous analysis.

The hydraulic system described in the Early Defueling Safety Analysis Report (Reference 2) is used to power the hydraulic impact chisel. Therefore, chisel operation is bounded by that analysis.

Although the proposed activity is not within the scope of the previously approved Early Defueling SER, GPU Nuclear has determined that it is bounded by existing safety evaluations. Therefore, subject to NRC concurrence, GPU Nuclear intends to proceed with the proposed activity and will update the Defueling SER, as appropriate.

Sincerely,


for F. R. Standerfer
Vice President/Director, TMI-2

FRS/RBS/eml

Attachment

REFERENCES

1. Safety Evaluation Report for Heavy Load Handling Over the TMI-2 Reactor Vessel, Revision 0, GPU Nuclear Letter 4410-85-L-0089, Dated April 19, 1985, F. R. Standerfer to B. J. Snyder
2. Early Defueling Safety Evaluation Report, Revision 4, GPU Nuclear Letter 4410-85-L-0200, Dated October 10, 1985, F. R. Standerfer, B. J. Snyder