Docket No. 50-320

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

March 20, 1987
NRC/THI 87-022

Dear Mr. Standerfer:

Subject: Plasma Arc Cutting

Reference: (a) NRC letter NRC/THI-86-111, dated 12/2/86, W. Travers to F. Standerfer, Plasma Arc Safety Evaluation Report
(b) GPUN letter 4410-07-0012, dated 1/20/87, F. Standerfer to W. Travers, Plasma Arc Cutting

Reference (a) forwarded NRC staff questions resulting from our review of your safety evaluation for plasma arc cutting of fuel assembly end fittings. We have reviewed your response submitted by reference (b) and have determined that you inadequately addressed our concerns on the formation of nickel carbonyl during the plasma arc cutting process. As previously stated, there are literature references which indicate a potential for the formation of nickel carbonyl, a toxic substance, by plasma cutting of stainless steels. It is possible that the cutting process may preferentially produce other nickel compounds that present less of a safety hazard. However, there is sufficient evidence of the potential for the formation of nickel carbonyl that it must be addressed.

Please provide the staff with adequate analytical data and literature references describing the chemical processes that affect the formation of nickel carbonyl to further support your position that this compound presents no safety hazard. As an alternative, describe the theoretical maximum nickel carbonyl formation rates based on cutting rates and chemical composition of the alloys being cut, and describe the protective measures you will employ to protect the workers and ensure that toxic substances do not accumulate in the reactor building.

If you have any question, please call me or my staff.

Sincerely,

[Signature]

original signed by
John Thomas for:

William D. Travers
Director
TMI-2 Cleanup Project Directorate
Mr. F. R. Standerfer

cc: T. F. Demmitt
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