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August 26, 1983
NRC/TMI-83-054

Docket No. 50-320

Mr. B. K. Kanga, Director
Three Mile Island Unit 2
GPU Nuclear Corporation
P. O. Box 480
Haddleton, PA 17057

Dear Mr. Kanga:

Subject: Variation of Catalyst Addition Criteria for SDS Liner (D20029) Shipment

The NRC staff has reviewed your letter (B. K. Kanga to L. H. Barrett, SDS Liner Shipping, 4410-83-L-0194, dated August 24, 1983) requesting a variation on the catalyst addition criteria for SDS liner D20029. This variance was requested because of the identification of approximately 12 grams of catalyst (~340 pellets) on the top of the liner and at the dewatering station platform, which was part of the initial charge of catalyst required to be inserted into the liner for radiolytic gas control. The criteria for the amount of catalyst to be added to each liner is 236 grams with a deficiency allowance of 1% by weight.

The two bases for the catalyst addition criteria are (1) to provide adequate recombiner surface area capacity, and (2) to ensure sufficient catalyst remains in the retention device (Johnson screen) during a transport accident configuration (i.e., inverted). The staff's analysis had previously shown that the recombiner capacity of a 236 gram charge of catalyst was conservative by over an order of magnitude, and therefore the missing pellets (12 grams or 5% of the required charge) should not represent a recombiner capacity problem. The displacement (or void), within the Johnson screen retention device, created from the missing pellets during a potential inverted condition, has been determined to be less than 11%. This displacement will have no measurable effect on both the distance (~1 inch) the radiolytic gases must diffuse to the displaced recombiner material and the lost surface area of the material. Additionally, liner D20029 contains 12,000 curies of radioactivity as compared to the design basis source term of 120,000 curies for radiolytic gas generation. The staff therefore concludes that adequate recombiner material is present to safely control any potential combustible radiolytic gases.

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OFFICE ►

SUMMARY ►

DATE ►

Mr. B. K. Kang

-2-

August 26, 1983

As with previous SDS shipments, before the staff approves this shipment, we will review specific liner technical parameters, e.g., gas sampling results, residual water measurements, internal pressure readings, and radiation dose rates.

Lake H. Barrett
Deputy Program Director
TMI Program Office

cc: B. Snyder
J. Byrne
A. Miller
J. Larson
J. Barton
R. Frenneman
F. Wallace

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