TMI Program Office
Attn: Mr. Lake H. Barrett, Deputy Director
U. S. Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, Pennsylvania 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Submerged Demineralizer System

During discussions with members of your staff, you requested that we provide our estimate of the maximum centerline temperature that might be reached in a dewatered zeolite bed. This letter responds to that request.

Our analysis is based on the following assumptions:

1. Total bed loading is 60,000 curies - Cs-137.

2. The resin concentration of radioactivity is 8,000 times the expected feed concentration.

3. The liners are stored under water at 80°F skin temperature.

4. The zeolite is completely dry and thus the worst case of thermal conductivity (0.092 btu/hr - ft. - °F).

5. The bed is solid -- no credit is taken for the center 1½" discharge pipe on the centerline.

This analysis yields a maximum (hypothetical) centerline temperature of 224°C (435°F).

Should this hypothetical maximum temperature be reached there would be no adverse consequences on either the zeolite ion exchange media or the SDS vessel.
Should you wish to discuss this matter further, please contact Mr. L. J. Lehman, Jr. of my staff.

Sincerely,

G. K. Hovey
Vice-President and Director, TMI-2

cc: Dr. B. J. Snyder, Program Director, TMI Office