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November 22, 1982
 4410-82-L-0049

TMI Program Office
 Attn: Mr. L. H. Barrett, Deputy Program Director
 US Nuclear Regulatory Commission
 c/o Three Mile Island Nuclear Station
 Middletown, PA 17057-0191

Dear Sir:

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

The purpose of this letter is to inform you of GPU's plans to refill the Reactor Coolant System (RCS). The system will be filled to the top of the hot legs (elevation 365'0") with a small gas space retained in the CRDM's. Refill is currently scheduled for mid December 1982. The purposes for refilling the RCS at this time are:

- 1) Purge the oxygen from the RCS hot legs and pressurizer, and
- 2) Provide a RCS water level which will permit operation of the Once Through Steam Generator (OTSG) recirculation/cleanup system.

In order to operate the OTSG recirculation/cleanup system, the secondary side water level in the OTSG's must be raised to the vicinity of the upper tube sheet. The RCS must be raised to above this level to minimize the chance of inleakage of unborated water from the OTSG's to the RCS.

During refill, the RCS high points, hot legs, and pressurizer will be vented to ensure no gas remains. The CRDM's will not be vented in order to conserve man-rem. Venting is not considered necessary because the usual reasons for venting:

- 1) Reduce corrosion,
- 2) Provide fluid for CRDM snubbing, and
- 3) Lubricate the roller nuts

are not pertinent under present circumstances.

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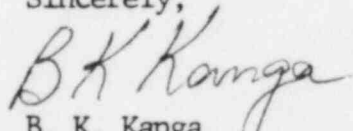
An evaluation has been performed to determine the potential for the buildup of a flammable gas mixture in the RCS. The occurrence of a flammable mixture is not considered credible for the following reasons:

- 1) The release rate of hydrogen from the RCS is less than 0.010 ft³/day.
- 2) Most of the hydrogen released in the reactor vessel will accumulate in the center CRDM (H8).
- 3) CRDM H8 contains a nitrogen-hydrogen atmosphere but no oxygen. This gas mixture will not be contaminated with building air prior to refill. Thus it will be a non-flammable mixture.
- 4) Hydrogen which does not accumulate in H8 but ends in other CRDM's will not reach a 4% hydrogen concentration for many years. Head removal will occur prior to the CRDM's reaching a flammable mixture.

Refill will be accomplished using makeup from the Reactor Coolant Bleed Holdup Tanks which will be monitored for boron content. After the desired level and pressure in the RCS is reached, RCS pressure will be maintained by the Standby Pressure Control System. RCS Chemistry will be maintained using the equipment and procedures used prior to "Quick Look".

If you have any questions, please feel free to contact Mr. J. E. Larson of my staff.

Sincerely,


B. K. Kanga
Director, TMI-2

BKK/RBS/jep

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