Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (THI-2)
Operating License No. DFR-73
Docket No. 50-320
EPICOR-II Liner Storage Contingency Plan

In your letter of January 22, 1981, you requested that we submit a contingency plan for EPICOR-II liners while in extended storage. By our LL2-81-0047, we advised you we would forward such a plan by March 13, 1981. We have concluded our considerations of all aspects of this matter, and plan to make preparations (e.g., obtain liners, prepare procedures) to install pans under the eight liners shown by our evaluation to be less likely than the others to retain their integrity for well over ten years.

A conceptual sketch of these pans showing important parameters is attached.

This design was selected to satisfy the following requirements on the basis as set forth:

- Contain all leaked liquid. After dewatering, to which the liners have been subjected, the residual liquid in the liners is expected to be about one gallon. Indeed, there is some concern that there may not be enough water to be able to be sampled in the upcoming liner testing program. As compared to the expected one gallon of water in the liner (to be contained if a leak should develop), the pans will each contain well over 50 gallons.

- Resist corrosion by contained liquid. The pans will be fabricated of stainless steel. The material tentatively selected is type 304 stainless steel. However, this tentative selection is still under review.
Avoid galvanic corrosion. The liner will sit on a non-electric-conducting material in the pan to preclude a galvanic coupling between the dissimilar metals of the liner and the pan.

Readily removable for decommissioning. Provision is made for easy lifting of the pans from the storage cells.

Guidance for determination of those liners to be considered for use of the pans was provided by the "Evaluation of the Liner Integrity of the TMI Unit 2 EPICOR-II Radwaste Systems" forwarded to you on December 4, 1980 by our TLL 634. This report concluded that, except for eight identified liners, the expected life, without leakage, of stored liners was well in excess of the ten years that the NRC suggested should be used as the basis of the maximum on-site storage period. Based on what are considered very conservative assumptions, this study summarized in the "Evaluation" showed corrosion in the liners is calculated to be on the order of one gram of iron. This amount is insignificant when compared to the one-quarter inch thick walls or one-half inch thick bottoms. Oxidation was also considered. The projected rate of oxidation is on the order of 0.01 inches per year (10 mils/yr). The above "Evaluation" has indicated that some pinholes may develop due to corrosion in eight of the stored liners in as short a time as 15 to 19 months, but that the corrosion will be limited to no more than pinhole penetrations. The structural integrity of the liners will not be significantly effected.

Based on the study results discussed above, it is concluded that catastrophic failure of the liners is not a reasonable possibility, and that immediate encapsulation of the liners is not necessary. We will continue to work expeditiously towards the use of high integrity containment of the liners. In the meantime, we feel it is prudent to make preparations to install the previously described pans under the eight liners we feel are less likely to retain their integrity.

It is important that this decision be kept in the context of two significant factors:

- As brought out in the above "Evaluation," the only leakage identified as possible would be in the nature of pinhole leaks. Loss of structural integrity is not a reasonable possibility.

- The liners are stored in a massive concrete structure designed to provide a high degree of confinement of leaked liquid, if any, as well as for monitoring for such leaks.

We expect to reevaluate our conclusion to install these pans from time to time as information becomes available such as, for instance, from sampling and inspection of liner contents or the completion of our final metallurgical evaluation. If we perceive a reason to change our conclusion, we will so advise you.
If you have any questions, we would be pleased to discuss them with you.

Sincerely,

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

cc: L. Barrett, Deputy Program Director
PRELIMINARY SKETCH

CONCRETE MODULE

STORAGE CELL (TYP.)

LIFTING HOLE

EPICOR II
4x4 LINER

GRATE (COATED TO REDUCE GALVANIC CORROSION)

DRIP PAN

1) DRIP PAN :- 1/4" THK. x 12" HIGH x 51" DIA. ID (TYPE 304 S.S.)