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July 20, 1983  
5211-83-208

Office of Nuclear Reactor Regulation  
Attn: J. F. Stolz, Chief  
Operating Reactor Branch No. 4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
TMI-1 Steam Generator Repair Status Update

Our letter of June 13, 1983 (5211-83-179), informed you of results of post repair testing of the steam generators performed to that date and plans for future testing. This letter is to inform you of additional test results through early July including the early results of reactor primary system cleaning.

Following repair of the residual tubes identified in our June 13 letter, we conducted additional drip and bubble tests of both OTSG's on June 17 and June 26. These tests on OTSG "B" showed no observable leaks. The drip test on OTSG "A" identified five plugs (four rolled plugs and one explosive plug bottom tube sheet) and one tube with drops of water clinging to the end. No drops were seen to fall free over the 30 second observation period from any of these six tubes. This particular tube (unplugged) had been inspected by ECT in the previous month and dispositioned as no detectable defects. This tube was not plugged. The leakage from the plugs was extremely small and since future operation may seal the plug leakage with time, no further repair action regarding the dripping plugs is planned at this time.

The bubble test on OTSG "A" identified seven plugs (one welded and six rolled) and three unplugged tubes from which some gas bubbles were detected by visual observation. The welded plug was repaired. This was the first bubble test on this welded plug since it had been repaired. All of the tubes and rolled plugs passing nitrogen in OTSG "A" had very fine streams of tiny bubbles which did not cause surface disturbances of the water layer. This amount of bubbling is less than that observed in previous testing. Due to the small amount of leakage, no further action was taken regarding the three tubes and six rolled plugs. The results of pre-critical hot functional OTSG testing will be used to disposition these tubes prior to critical plant operation.

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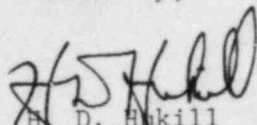
As indicated in the June 13 letter, we are continuing to evaluate all testing of the steam generators and will assess that information at the management review following steam generator hot testing. The Staff will be informed of GPUN's conclusions prior to proceeding to criticality.

We have completed approximately 240 hours of RCS cleanup. The sulfur level (measured as sulfate) in the RCS water shows a slight increase as a function of time. The sulfate has increased from an initial value of 220 ppb to approximately 360 ppb as of July 18. This sulfur increase is substantially less than predicted based on assuming the maximum levels of contamination drawn from swipe data from the areas of highest concentration (i.e., OTSG upper head area).

Throughout the RCS cleanup, we have been monitoring for primary to secondary leakage by examining the secondary side for activity. No tritium has been detected to date. Tritium is currently  $4.4 \times 10^{-3}$  uci/ml in the RCS and has a minimum detectable activity of about  $5 \times 10^{-6}$  uci/ml. If one assumed equal mixing in the OTSG secondary side, the leak, if any, at the current 300 psi differential pressure is less than  $2 \times 10^{-3}$  gpm based on no detectable tritium. There have been several Cesium-137 measurements above the minimum detectable activity of  $1 \times 10^{-7}$  uci/ml. These measurements have been interspersed with measurements below the minimum detectable activity. The highest secondary side Cesium-137 activity which was measured after 10 days is  $1.86 \times 10^{-7}$  uci/ml. Since Cesium-137 is currently  $1.6 \times 10^{-3}$  uci/ml in the RCS, this corresponds to a primary to secondary leak rate of equal to or less than  $2 \times 10^{-4}$  gpm.

Our schedule shows completion of the 400 hours scheduled RCS cleanup on July 24 with 6 to 10 days required to restore RCS chemistry to its normal operational range. We expect to be prepared to commence pre-critical hot testing of the steam generators starting very early in August.

Sincerely,

  
H. D. Hukill  
Director, TMI-1

HDH:DGS:vjf

cc: H. Silver