

February 24, 1984

MEMORANDUM FOR: Thomas T. Martin, Director, Division of Engineering and Technical Program

THRU: Lee H. Bettenhausen, Chief, Test Programs Section, EPB, DETP

FROM: Jin W. Chung, Lead Reactor Engineer, TPS, EPB, DETP

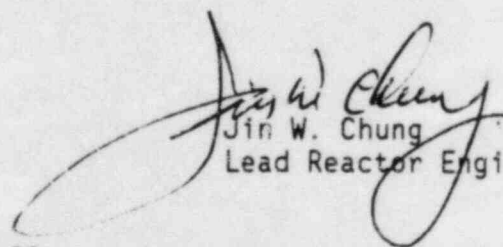
SUBJECT: REVISION TO INSPECTION REPORT 50-289/83-20, REACTOR COOLANT SYSTEM LEAK RATE TESTS AT TMI-1

Subsequent to the original subject inspection report, additional information became available and additional analyses and reanalyses were performed. It became evident that a revision to the report was needed. Comments by others and an independent review by D.C. Kirkpatrick of NRC/OIE were incorporated into this revision. Report pages incorporating revisions, with the revised information indicated by markings in the right-hand margins, are attached. These are identified in Table A, Summary of Revisions.

The principle areas requiring reanalysis were timing of charts and understanding of computer data handling. A major difficulty in reconstructing the sequence of an event during the RCS leak rate testing was accurate timing of the Makeup Tank (MUT) level recorder chart. The statistical method employed in the original report was found to be inaccurate in many instances. More accurate correlations were developed between the recorded events in the logs and the MUT chart traces. Additional document reviews were conducted, including an onsite review on February 8, 1984, of the TMI-1 computer log entries for the software and hardware modification of the RCS Leak Rate Test Program.

Based on the additional information, the leak rate data were reanalyzed more conservatively to incorporate factors such as variations associated with the system perturbations and instrument errors. Also, the rates of the MUT level changes and the recorded water additions, before and after the tests, were considered in order to validate the leak rate results.

The additional findings and revisions are attached.

  
Jin W. Chung  
Lead Reactor Engineer

Attachments:  
Revised pages to 50-289/83-20