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April 11, 1980

U.S. Nuclear Regulatory Commission, Region II
101 Marietta Street, N.W. Suite 3100
Atlanta, Georgia 30303

Gentlemen:

Reference: Docket 50-160
License R-97

Subject: Licensee Event Report LER 80-1

One of the Technical Specification Surveillance requirements for the Georgia Tech Research Reactor (GTRR) is a monthly flow rate verification from the Emergency Core Cooling System (ECCS) tank TD-2. On October 9, 1979, during the performance of this test, the flow rate was observed to be 8.0 gallons per minute. This is less than the operational lower limit of 8.3 gallons per minute.

The technique for measuring the flow rate is to initiate ECCS flow and note tank level readings versus time. These data are then used with a tank calibration curve to determine the flow rate. On October 9, 1979, the test was performed and a flow rate of 8.0 gallons per minute (gpm) was noted by the reactor operator. The test was repeated and the operator observed that the rate could apparently be varied from 8.0 to 8.5 gpm depending on the manner in which ball-valve No. 94 was opened. valve 94 is a 1 1/2 inch, handle operated ball valve of stainless steel, type 316 with Teflon seat material. A mechanical stop is installed to restrict the open position of the valve so that the desired flow rate can be obtained from the tank. The operator stated that he felt the flow variation was due to a looseness of the two lock nuts fixing the handle to the ball operating shaft. The lock nuts were tightened. At this time a misunderstanding arose resulting in the Reactor Supervisor believing that the problem had been corrected. The system was next checked on December 5, 1979 and subsequently on December 14, 1979, January 25, 1980 and February 11, 1980. In each case, the system flow rate was within the operational limit of 8.5 ± 0.2 gpm.

During a reactor shutdown in March, valve 94 was closely re-examined. It was found that some looseness still existed between the handle and the ball operating shaft because of clearance between the "flats" on the shaft and handle. Shim material was installed to improve the fit between the two pieces. We have not been able to completely check this repair because the reactor is presently in a Mode 1 status and there is no water in the ECCS tank.

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Even though the test made on December 5, 1979 and those subsequent to it were

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satisfactory, we believe it may have been possible for the flow rate from the tank to be as low as 8.0 gpm at times. The required minimum flow rate from the ECCS system is 8.0 gpm as stated in our Safety Analysis Report (section 4.4.8.3, page 79). The operational limit of 8.5 ± 0.2 gpm was chosen to provide some flexibility.

The following steps have been or will be taken to prevent a recurrence of an incident of this kind in the future.

1. Re-instruct all operating personnel in the necessity and requirement for follow-up investigation and/or action when any reactor associated system does not appear to be functioning normally.

Status: Completed

2. Fill tank 'TD-2 with D₂O and thoroughly check the operation of valve 94 to assure ourselves of consistent, reliable operation.

Status: Not complete. This will be done as soon as additional D₂O is available to charge the process water system.

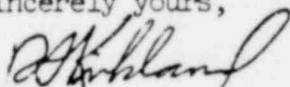
3. Strengthen our surveillance program by establishing a second review of the surveillance documentation to be performed by a person of at least the level of plant knowledge of a senior reactor operator.

Status: The second review has been put into effect.

Until item 2 above has been completed, the GTRR will not be operated at power levels greater than 1 MW.

Should you require any additional information on this matter, please advise me.

Sincerely yours,



Robert S. Kirkland
Associate Director

RSK:lrn

cc: Members, Nuclear Safeguards Committee
L.E. Weaver
L.D. McDowell