



UNIVERSITY OF MISSOURI

Research Reactor Facility

August 29, 1980

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Director of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: Docket 50-186
University of Missouri
License R-103

Subject: Report as required by Technical
Specification 6.1.h(2)

Description

On August 3, 1980 while attempting to make reactor grade water using the building demineralized water system, approximately 400 gallons of water not meeting primary specifications was sent to the holding tank. An analysis of the tank showed that this inadvertent addition caused the entire tank to fail to meet primary specifications. Further operation would have been in violation of Technical Specification 3.10.b and the reactor was shutdown.

Analysis

The reactor make-up water system provides primary make-up water to the reactor. Primary grade water is made by running the building domestic water system through an H-OH demineralizer resin bed. It is then held in storage in a 6000 gallon holding tank. This same demineralizer bed is used to supply water for the regeneration of the pool and primary ion exchange resin beds.

On August 3, 1980 at approximately 2100, the system was started up to make water for the make-up water storage tank. The previous use of the building demineralizer bed had been the regeneration of the pool ion exchange bed. When this evolution had been completed, the valve line-up had been only partially secured with the bypass valve around the conductivity cell controlled solenoid valves left open. When flow through the bed was initiated, it went directly to the holding tank vice the drain. When the mistake was realized, flow was secured and the hold-up tank sampled. Conductivity measurements indicated 4 micro mhos/cm. This no longer met our primary grade specifications and the reactor was shutdown.

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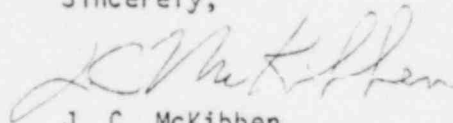
No unreviewed safety question resulted from this occurrence. The reactor was immediately shutdown when the problem resulted. A sufficient water inventory existed up to the time of shutdown to assure safe operation.

Corrective Action

The hold-up tank was drained to the waste water system and water meeting primary specifications was returned to the tank. When sufficient inventory existed to meet the Technical Specification for greater than 2000 gallons of primary grade water, reactor operation was resumed.

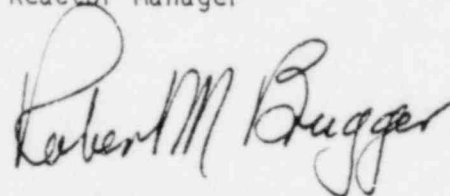
The procedures involved in handling the demineralized water bed was reviewed and a step adding a check of the bypass valve was added to the procedure. The importance of properly securing a valve line-up following completion of an evolution and verifying valve line-ups prior to operation of a system were reviewed with the operating staff.

Sincerely,



J. C. McKibben
Reactor Manager

Endorsement
Reviewed and approved:



Robert M. Brugger
Director

JCMK:vs

cc: James Keppler, Director
Regulatory Operations - Region III
Reactor Advisory Committee
Reactor Safety Subcommittee
Document Management Branch, NRC