



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FEB 5 1991

MEMORANDUM FOR: Donald J. Sreniawski, Chief
Nuclear Materials Safety Branch, Section 1
Division of Radiation Safety
and Safeguards, Region III

THRU: George H. Bidinger, Section Leader
Uranium Fuel Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: W. Scott Pennington
Uranium Fuel Section
Fuel Cycle Safety Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

SUBJECT: STATUS OF ROOT CAUSE INVESTIGATION FOR ALLIED-SIGNAL, INC.,
COLD TRAP

REFERENCES:

1. Memorandum dated February 23, 1990, from C. E. Norelius to D. J. Sreniawski, Augmented Inspection Team (AIT) Charter for Allied Signal, Inc. (Docket No. 040-03392)
2. Augmented Inspection Team Report, Report Number 40-3392/90002 (DRSS), issued with transmittal letter dated April 13, 1990, to M. D. Kosmider
3. Letter dated March 15, 1990, from M. D. Kosmider to A. B. Davis
4. Memorandum dated August 31, 1990, from J. W. Doman to B. S. Mallett, Status of Primary Cold Trap Investigation at Allied-Signal Metropolis Works

On February 27, 1990, an Augmented Inspection Team (AIT) was dispatched to Allied-Signal's UF₆ conversion facility in Metropolis, Illinois, to review an event involving a chemical reaction in a primary cold trap. The objectives of the Team were detailed in the AIT Charter (Reference 1).

In the AIT Report (Reference 2), the Team reported that the chemical reaction occurred when the heating/cooling solution, a mixture of ethylene glycol and water, reacted with UF₆ in a cold trap. The solution normally does not contact the UF₆ but is circulated through a tube bundle internal to the cold trap.

In Allied-Signal's letter (Reference 3), the licensee stated that the root cause of the cold trap incident was the failure of the tube bundle in the 2B Primary Cold Trap. In a memorandum (Reference 4), your staff stated that the licensee

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was continuing with an investigation of the failure mechanism, and based on a conversation with an Allied-Signal representative, the licensee expected to receive the investigation results in November 1990. In addition, the AIT Charter directed the Team, in part, to determine equipment, processing, or procedural problems which may indicate generic applicability to other aspects of Allied-Signal's operations or to other similar licensed facilities.

Please provide the status of the licensee's investigation and the Region's plans to address the generic applicability of this event to similar operations at Allied-Signal and other facilities.

Original Signed By:

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cc: John A. Grobe, RIII

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