



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TEXAS 76012

HQ

June 24, 1980


Docket No. 40-3453

Atlas Minerals  
ATTN: Mr. Wayne Jensen  
Mill Superintendent  
P. O. Box 1207  
Moab, Utah 84532

Gentlemen:

The enclosed IE Circular No. 80-14 is forwarded to you for information. If there are any questions related to your understanding of the suggested actions, please contact this office.

Sincerely,

  
Karl V. Seyffert  
Director

Enclosures:

1. IE Circular No. 80-14
2. List of IE Circulars  
Recently Issued

8008140 104

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D. C. 20555

SSINS.: 6830  
Accession No.:  
8005050074

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Date: June 24, 1980  
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RADIOACTIVE CONTAMINATION OF PLANT DEMINERALIZED WATER SYSTEM AND RESULTANT  
INTERNAL CONTAMINATION OF PERSONNEL

This circular describes an event which occurred at a nuclear power facility; however, the generic implications may be applicable to research reactors, and fuel cycle facilities.

On March 17, 1980, a licensee informed the NRC resident inspector that portions of the plant demineralized water (DW) system were found to be radioactively contaminated. A temporary hose used to add demineralized water to the spent fuel pool was the pathway for the cross-contamination. After this fuel pool makeup was completed on March 14, the temporary DW line (still connected to the DW header) was inadvertently left submerged in the fuel pool. Since the DW header pressure at the point of supply was relatively low (a DW booster pump had been secured), a siphoning action occurred, resulting in radioactive contamination of portions of the DW header.

On March 17, 1980, while performing routine secondary system chemical analyses, the licensee discovered that the demineralized water tap in the chemistry lab contained high levels of boron and had activity of  $1.5 \times 10^{-4}$  uCi/ml (mainly Cs-134, Cs-137, Co-58, Co-60 and Mn-54). It was subsequently discovered that demineralized water from the chemistry laboratory supply tap had been used to make five (5) pots of coffee. The remaining coffee was confiscated and the twenty-three (23) individuals who had consumed this coffee were whole-body counted. All involved individuals showed no intake greater than an equivalent 0.01 MPC-HRS. Analysis performed by the licensee's radiation consultant, based on the maximum concentration of radioactivity found in the coffee, indicated that the resultant 50-year dose commitment to an individual drinking eight ounces of this coffee would be less than 1 millirem.

Further licensee investigation revealed that the non-radiological chemistry DW supply tap was the only DW supply point outside the Auxiliary Building controlled area. This DW supply tap was tagged prohibiting human consumption to prevent a similar event in the future.

It is recommended that you review your facility's use of demineralized water (DW) via temporary connections and give attention to the following:

1. Provisions should be made to assure that radioactive materials are not inadvertently introduced into your facility's DW system via the improper use of temporary connections. A temporary cross connection between contaminated systems and the DW system without adequate physical controls to prevent cross-contamination should be prohibited.

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June 24, 1980

RECENTLY ISSUED  
IE CIRCULARS

Circular No.	Subject	Date Issued	Issued To
80-09	Problems With Plant Internal Communications Systems	4/28/80	All holders of a power reactor Operating License (OL) or Construction Permit (CP)
80-10	Failure to Maintain Environmental Qualification of Equipment	4/29/80	All holders of Reactor Operating Licenses (OLs) and Construction Permits (CPs)
80-11	Emergency Diesel Generator Lube Oil Cooler Failures	5/13, 80	All holders of a power reactor Operating License (OL) or Construction Permit (CP)
80-12	Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis	5/14/80	All holders of Reactor Operating Licenses (OLs) and Construction Permits (CPs)
80-13	Grid Strap Damage in Westinghouse Fuel Assemblies	5/18/80	All holders of Reactor Operating Licenses (OLs) and Construction Permits (CPs)

Enclosure