

SSINS No.: 6835  
IN 83-66

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

October 7, 1983

IE INFORMATION NOTICE NO. 83-66: FATALITY AT ARGENTINE CRITICAL FACILITY

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or construction permit (CP), and non-power reactor, critical facility, and fuel cycle licensees.

Purpose:

This information notice is issued as an early notification of an accident involving a fatality at a zero-power critical facility owned and operated by the CNEA (Argentine National Atomic Energy Commission). The information was obtained from the CNEA by phone through the NRC's Office of International Programs. CNEA plans to issue a written report after a detailed evaluation of the incident. It is expected that non-power reactor, critical facility and fuel cycle licensees will review the information for applicability to their facilities. No specific action, or response is required.

Description of Circumstances:

At 4:10 P.M. on September 23, 1983, a prompt criticality accident occurred at CNEA's RA-2 zero-power, critical facility in the Constituyentes Atomic Center near Buenos Aires, Argentina. RA-2 is a light-water-cooled test and training reactor, using 90% enriched uranium, MTR-type fuel.\* With the test reactor sub-critical (shut down), an operator was making core configuration changes using an overhead crane. Facility procedures required that fuel and control rod alterations be performed without the moderator present. The qualified operator (14 years of experience) attempted to make core changes without draining the moderator water. The core went prompt critical (estimated integrated energy pulse approximately 10 megajoules). The moderator expanded rapidly, shutting down the reactor, followed by an automatic dump of the moderator. There was no equipment damage or significant radiation exposures to personnel other than the operator.

\*Information on fuel obtained from American Nuclear Society, Proceedings of the Third Pacific Basin Conference, Acapulco, Mexico, February 16-18, 1981.

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It is estimated the operator received an initial average whole body dose of 1400 rads of fast neutrons and about 500 rads of gamma. He was reported conscious during the first day following the incident, and was unconscious the second day. The expected acute radiation sickness symptoms were observed, including some nervous disorders. He died on September 25, at 5:00 P.M. Immediate cause of death was severe inflammation of the lungs.

Edward L. Jordan, Director  
Division of Emergency Preparedness  
and Engineering Response  
Office of Inspection and Enforcement

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Attachment:  
List of Recently Issued IE Information Notices