



**Department of Energy**  
Savannah River Operations Office  
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DNF SAFETY BOARD

SEP 25 2014

The Honorable Peter S. Winokur  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW, Suite 700  
Washington, DC 20004

Dear Mr. Chairman:

SUBJECT: Potentially Reactive Metal Fuels Stored in L-Area

The Defense Nuclear Facilities Safety Board expressed interest over the years regarding the disposition of potentially reactive metal fuels stored in L-Area Disassembly Basin. The Department of Energy (DOE) evaluated the fuel stored in L-Area and determined the Sodium Reactor Experiment (SRE) fuel was not suitable for long term wet storage. As a result, DOE authorized processing in H-Canyon. On August 28, 2014, the DOE Savannah River and its contractor, Savannah River Nuclear Solutions, successfully completed the dissolution of the SRE used nuclear fuel in combination with high aluminum/low uranium fuel, dissolving a total of 147 bundles from the basin during the campaign.

SRE was an experimental nuclear power reactor built by Atomics International (AI) at the Santa Susana Field Laboratory near Simi Valley, California. The reactor operated from 1957 to 1964. In 1957, SRE became the first nuclear reactor in the United States to produce electrical power for a commercial power grid. SRE was shut down in 1964. The SRE fuel slugs were prepared for disposition by AI in the late 1970s and then shipped to Savannah River Site (SRS) for storage in L-Area Disassembly Basin.

The fuel was made of a thorium-uranium alloy. Since the SRE was high in uranium-233 content and unsuitable for blend-down to Low Enriched Uranium for use by the Tennessee Valley Authority, the dissolved SRE will be directly transferred as waste to the tank farms.

The DOE continues to make progress at SRS in a number of risk reduction areas of interest to the Board and looks forward to keeping the Board informed as milestones in risk reduction are achieved.

Sincerely,

  
David C. Moody  
Manager

NMPD-14-0078

Honorable Winokur

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cc:

Mark Whitney, EM-1

Matthew Moury, EM-40

Todd Lapointe, EM-41

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