



Department of Energy  
Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29802

JUL 11 2011

Dr. Donald N. Bridges, Chairperson  
Savannah River Site Citizens Advisory Board  
P.O. Box A  
Aiken, South Carolina 29802

Dear Mr. Bridges:

SUBJECT: Citizens Advisory Board (CAB) Recommendation Number 275 - Research and Development for Reprocessing of Used Nuclear Fuel (UNF)

Thank you for your recommendation on Research and Development for Reprocessing of Used Nuclear Fuel. The following comments are provided in response to your recommendation:

- 1) *Assess the nuclear materials and Used Nuclear Fuel at SRS and determine if there are some materials on-site that could be processed that would serve the dual role of permanently stabilizing the nuclear materials and at the same time providing research and development information that would be useful to the nuclear community if reprocessing of nuclear fuel became viable.*

The Department of Energy (DOE) concurs with the concept of obtaining optimal benefit in the processing of SRS nuclear materials. We agree that opportunities to achieve benefits in addition to stabilization should be pursued when feasible. A current example of exploitation of an opportunity for dual benefit is the processing of material through the Vacuum Salt Distillation process in HB-Line to meet Mixed Oxide Fuel acceptance specifications.

- 2) *Assess the capabilities of H Canyon and determine what aspects of this operational capability would be likely to contribute to research and development for reprocessing.*

DOE agrees with the CAB recommendation. H-Canyon is currently operating to complete blend down of enriched uranium recovered from the processing of surplus unirradiated highly enriched uranium (HEU) materials. These operations have been ongoing for approximately the last three years. We intend to complete the current HEU blend down work in 2011 and H-Canyon will then continue in an operational condition.

To help position H-Canyon for possible future new missions, the Department is planning to transition H-Canyon and HB-Line facilities into modified operations in fiscal year 2012. Among potential new missions, it is proposed that:

- H-Canyon will be evaluated for research and development in key areas to support the development of commercial Used Nuclear Fuel processing;
- H-Canyon could be used as a test facility for Next Generation Safeguards Initiative equipment which includes mock-up capability for process lines, tanks and containers, mimicking reprocessing facility operations;

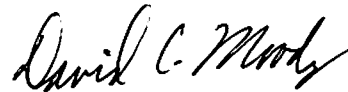
- H-Canyon may be considered as an alternative to disposition excess Highly Enriched Uranium and Plutonium pit materials and provide plutonium for the Mixed Oxide Fuel Fabrication facility and blend-down the Highly Enriched Uranium for use in Tennessee Valley Authority reactors;
- H-Canyon will be evaluated for recovery of special isotopes such as Americium-241 from plutonium;
- HB-Line will complete research and development work on the Vacuum Salt Distillation process to determine whether impurities can be removed from certain plutonium materials to meet the Mixed Oxide Fuel acceptance specifications; and
- HB-Line will be evaluated to purify Plutonium-238 to support NASA's Outer Planet Flagship Mission.

3) *Present this concept to DOE-HQ for consideration.*

This concept has been presented to DOE-HQ and is being factored into any decisions regarding H Canyon.

DOE recommends that Recommendation Number 275 be considered closed based on this letter of response. If you have any questions, please contact me or have CAB members contact Patrick McGuire at (803) 208-3927.

Sincerely,



David C. Moody  
Manager

NMPD-11-0049

cc:

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