



**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 276 - Concern for the Effective Utilization of H-Canyon

Thank you for your recommendation on the effective utilization of H-Canyon. The Department of Energy appreciates the CAB's desire to ensure decisions regarding H-Canyon are thoughtfully considered. While we are mindful of the benefits of maintaining H-Canyon operational, the Department's stewardship responsibilities require the Department to evaluate effective utilization of all of its facilities in light of overall mission requirements.

My responses to the various aspects of your recommendation are enclosed. If you have any questions, please contact me or have CAB members contact Patrick McGuire at (803) 208-3927.

Sincerely,

A handwritten signature in cursive script that reads "David C. Moody".

David C. Moody  
Manager

NMSP-11-0050

Enclosure:  
Response to Recommendation  
Number 276

cc w/encl:  
M. Nielson, (EM-42), DOE-HQ  
C. Brennan, (EM-42), DOE-HQ  
G. Deleon, (EM-33), DOE-HQ  
Z. Smith, DOE-SR  
D. Hintze, DOE-SR  
R. King, SCDHEC  
G. Keys, U.S. EPA  
A. Frazier, GNR

## DOE Response to CAB Recommendation #276

- 1) *In view of the FY 2011/2012 Budget constraints keep H-Canyon fully staffed and operational so as to maintain a capability to process any potential nuclear materials in need of stabilization and/or disposition.*

**Response:** We are currently in the Congressional Budget Cycle. EM and DOE-SR constantly evaluate the mission of H-Canyon and appropriately staff it to meet the requirements of that mission. H-Canyon is currently blending down enriched uranium recovered from processing surplus, unirradiated Highly Enriched Uranium materials to achieve the non-proliferation goals of the United States. We intend to complete these activities and transfer the remaining Low Enriched Uranium Solutions to the Tennessee Valley Authority this year. Subsequently, the facility will be flushed to remove bulk fissile materials early next year, and then H-Canyon will continue in an operational mode to:

- receive sample returns from the Savannah River National Laboratory and the F-Area Analytical Laboratory and disposition the samples to the liquid waste system;
- remediate large boxes of legacy Transuranic Waste such that it can be safely shipped to the Waste Isolation Pilot Plant (WIPP);
- maintain operator qualifications and proficiencies on the basic unit operations with H-Canyon and be able to respond to abnormal conditions; and
- perform all surveillance and maintenance on those safety systems required to be operable in accordance with the Documented Safety Analysis.

- 2) *Present the Citizens Advisory Board with the costs and impacts of running H-Canyon in a fully operational manner as compared to keeping the H-Canyon in a state of readiness (warm standby).*

**Response:** The budget for H-Canyon in FY (FY) 2011 is \$215 million (M). In FY 2012 the anticipated budget for H-Canyon and HB-Line is \$165M which includes \$15M of carryover from prior years.

- 3) *Identify the issues to be encountered if H-Canyon is placed in warm standby (or shutdown) and then is later needed for processing existing known inventories or additional nuclear materials (which could be identified well into the future).*

**Response:** Currently H-Canyon is conducting proficiency runs to ensure that operational requirements and skills are maintained. During these proficiency runs personnel will exercise the safety systems and equipment required to be operable in accordance with the Documented Safety Analysis, will be able to respond to abnormal conditions, and will retain their qualifications. In addition, potential other items that might be required to process large quantities of nuclear materials include obtaining the funding to support

future missions; hiring, training, and qualifying additional staff; restoring systems which are not required to be operable in a deinventoried mode; conducting an appropriate Readiness Review; and obtaining approval of the appropriate NEPA documentation. Any mission for H-Canyon would be assessed to ensure that the appropriate actions/requirements are in place for operation.

- 4) *Assess the entire SRS inventory of materials being evaluated for disposition options for plutonium, used nuclear fuel, and highly enriched uranium and identify those materials that would fit into the H-Canyon processing window and could be constructively and cost-effectively prepared for disposition in H-Canyon (as compared to keeping H-Canyon in warm standby alone).*

**Response:** The Savannah River Operations Office reviewed the classified Nuclear Material Inventory Assessment, which identifies all of the Department's nuclear materials and Used Nuclear Fuel, to ensure there are no materials that might require future processing in H-Canyon for either disposition or stabilization purposes. There are currently no surplus nuclear materials in a storage condition that pose safety risks to the facility workers, the public or the environment; and that need to be stabilized or processed in H-Canyon.

- 5) *Develop a rationale for being able to process a portion of the above materials in advance of the other decisions now being contemplated such as: 1) the need for processing at any early date due to potential safety issues, 2) the processing can be cost-effectively done now with minimal environmental and programmatic differences from any of the other disposition options. Nor are there currently any surplus nuclear materials in a storage condition that pose safety risks to the facility workers, the public or the environment.*

**Response:** There are no materials identified within the Department's inventory that require future processing in H-Canyon for either disposition or stabilization purposes. There are currently no surplus nuclear materials in a storage condition that pose safety risks to the facility workers, the public or the environment. If the need arises, small quantities of nuclear material which may pose a future safety issue could begin to be dispositioned in H-Canyon within six months to one year.

- 6) *Explain how the Department of Energy FY 2012 Congressional Budget Request supports Public Law 106-398 which states "The Secretary of Energy shall continue operations and maintain a high state of readiness at the H-Canyon facilities and shall provide technical staff necessary to operation and so maintain such facility".*

**Response:** H-Canyon will continue to operate and be maintained in a high state-of-readiness in FY 2012 and beyond by continuing to:

- receive sample returns from the Savannah River National Laboratory and the F-Area Analytical Laboratory and disposition the samples to the liquid waste system;
- remediate large boxes of legacy Transuranic Waste such that it can be safely shipped to the Waste Isolation Pilot Plant (WIPP);
- maintain operator qualifications and proficiencies on the basic unit operations with H-Canyon and be able to respond to abnormal conditions; and
- perform all surveillance and maintenance on those safety systems required to be operable in accordance with the Documented Safety Analysis.

7) *Describe the approval process required to send significant amounts of plutonium to WIPP and the degree of confidence DOE has that such a plan would be fully implemented.*

**Response:** The approval process is outlined in the WIPP Waste Acceptance Criteria and lies within the purview of the Department of Energy. DOE-SR is an approved generator for WIPP and this material would be handled under that same program. The Interim Action Determination (required NEPA documentation) and Termination of Safeguards documents have been approved. Procurement of the Pipe Overpack Containers (POCs) is in progress.

HB-Line will blend surplus non-pit plutonium material with an additive to make the material difficult to recover. The blended material would be packaged into cans containing less than 175 fissile grams and then placed into POCs. The containers would be shipped to the SRS solid waste management area to be staged and subsequently placed in TRUPACT IIs and shipped to the WIPP for disposal. Current planning is to have some material ready for transport to WIPP by the end of Calendar Year 2011.

8) *Describe the manner in which Used Nuclear Fuel (formerly Spent Nuclear Fuel) would be adequately stabilized and dispositioned in the event that some of the UNF became problematic.*

**Response:** DOE-SR recognizes L-Basin is storing a small amount (less than 1%) of vulnerable material (damaged or cut test fuel). This vulnerable material is stored in vented Oversized Storage (OS) or Sealed Containers to isolate and contain the radionuclides from the rest of the basin. The material in OS containers poses recovery and disposition challenges; however, the basin technologies and practices for fuel recovery are in place and have been successfully used in site fuel recovery operations at the Receiving Basin for Offsite Fuels (RBOF). A submersible deionizer was designed and built in 2003 and deployed in RBOF to capture dissolved radioactive cesium within the Basin. A similar system is now deployed in L-Basin. Containment of the material in Sealed Containers is contingent upon maintaining a leak-tight system. No Sealed Container failures have been detected and the cans are expected to maintain the seals in the L-Basin. DOE-SR will direct the Contractor to develop an augmented Surveillance and Maintenance Plan to enhance the existing fuel management activities. This plan will include activities to:

- evaluate and predict the condition of the vulnerable material with time; and
- compare the planned fuel recovery methods with the expected degraded conditions.

With the existing and augmented program activities, the Savannah River National Laboratory concludes the fuel can be stored in L-Basin for an additional 50 years and possibly beyond. If the need arises, small quantities of materials which may pose a future safety issue could begin to be dispositioned in H-Canyon within six months to one year.

- 9) *Provide a forum in which stakeholders can provide input regarding the proposed transition of H-Canyon from an operational facility to a flushed/deinventoried facility. This decision impacts numerous stakeholders and their input should be considered by DOE in a forum that permits a clear understanding of the issue and impacts.*

**Response:** DOE-SR agrees that stakeholder input is a valuable tool for use in planning. Input on the future of H-Canyon and HB-Line has been received from various groups (e.g., Governor's Nuclear Advisory Council [GNAC], Defense Nuclear Facilities Safety Board [DNFSB], Tennessee Valley Authority, and Congressional Delegations [both State and Federal levels]).

The DNFSB held a public meeting on June 16, 2011, which allowed for stakeholder input. The Chairman of the CAB, GNAC, and public officials had the opportunity and did provide input. The comment period for this meeting remains open until July 18, 2011. The Department believes that this forum provides an unbiased perception on the public's input involving H-Canyon and meets the intent of this recommendation.

- 10) *In view of CAB's concern with placing H-Canyon in warm standby, the CAB recommends that no additional domestic or foreign Used Nuclear Fuel be received at SRS until the processing path is resolved.*

**Response:** We understand your position but due to the nonproliferation concerns involved with these materials, the priorities of the nation require that SRS continue to receive these materials.