

# Nuclear Materials Committee Open Recommendations

CAB #-	Title	Adopted Date
280	Concern for Receipt and Planning for Disposition of Research Reactor Spent Nuclear Fuel at SRS	September 27, 2011
281	Disposition Costs for SRS Research Reactor Spent Nuclear Fuel	September 27, 2011
282	Impact of Blue Ribbon Commission Recommendations on SRS Programs	September 27, 2011
286	Yucca Mountain as Interim Storage Site	May 22, 2012
287	Disposition Planning and Dry Storage of Spent Nuclear Fuel	May 22, 2012
291	Development of Defense Waste Processing facility Canisters and Research Reactor Spent Nuclear Fuel Shipping Facility and Shipping Cask	July 24, 2012
295	Implementation of Spent Nuclear Fuel Exchange Program with Idaho	September 25, 2012
296	SNF Processing Credit for H-Canyon Operations	September 25, 2012
302	Contingency Budget Planning Input for Severe Budget Cases	October 30, 2012
303	Disposition of Spent/Used Nuclear Fuel (SNF/UNF) from L-Basin through H-Canyon Considering the Plutonium Processing Impacts Likely to be Encountered	October 30, 2012





## Recommendation #281, Disposition Costs for SRS Research Reactor Spent Nuclear Fuel

- 1. Develop a planning case that establishes disposition costs for the RRSNF in L-Reactor Basin plus the additional fuel yet to be received at SRS considering the case that the fuel is processed promptly in H-Canyon and the waste is processed through the DWPF.***
- 2. Develop a second planning case that establishes disposition costs for RRSNF in L -reactor Basin (plus any additional fuel planned to be received) considering the fuel is stored in the Basins for an extended period and then dispositioned in a manner that DOE would deem adequate.***
- 3. Consider development of a third case (a possible hybrid case) for storage and disposition costs of RRSNF if studies indicate a viable case that is worthy of consideration.***

# Recommendation #281, Disposition Costs for SRS Research Reactor Spent Nuclear Fuel

## Department Response (December 1, 2011)

Thank you for your recommendation on Disposition Costs for SRS RRSNF. One clarification that needs to be made is that you refer to H-Canyon utilizing the Plutonium Recovery and Extraction (PUREX) process in the Background of the recommendation. H-Canyon has not used the PUREX process for Spent Nuclear Fuel (SNF) in over 50 years. H-Canyon operates the H-modified process, which does not separate out Plutonium.

As you know, there is currently no final repository for the RRSNF or the vitrified High Level Waste glass logs. Since it is not known what the final repository will be and the specifications for that facility it would be difficult to prepare the disposition cost cases suggested in your recommendation. The many assumptions that would have to be made to determine the final disposition costs regarding the final repository would create more confusion, instead of being the valid data point represented in your recommendation.

Due to the uncertainties in H-Canyon future missions, the allocation of costs for processing the SNF cannot be determined, at this time. However, we can provide the costs associated with SNF storage in L-Basin. This cost is currently \$40 Million per year and would be required every year that SNF was stored in the basin.

As for the “hybrid cases” you mentioned, when cases are identified, evaluations are done to determine the most feasible path. These evaluations include cost considerations as well as technical, environmental, safety and health factors and will help us to determine if a third case should be considered.



## Recommendation #282, Impact of Blue Ribbon Commission Recommendations on SRS Programs

Recommendations: The SRS Citizens Advisory Board recommends that DOE:

1. Report to the CAB when the Site will be in a position to state the nature and type of impacts of the Blue Ribbon Commission on Site materials disposition plans.
2. report to the CAB when and how the Site will factor Blue Ribbon Committee Recommendations into the NEPA documents for plutonium and Spent Nuclear Fuel and appropriate final disposition plans issued.

## Recommendation #282, Impact of Blue Ribbon Commission Recommendations on SRS Programs

### Department Response (December 1, 2011)

The final BRC report is scheduled to be released in early 2012, but DOE Savannah River Operations Office has no control over when it will be issued or what it will recommend. As soon as possible after the report has been issued and evaluated by the Department for impacts, a briefing to the CAB will be made. Unfortunately, no more specific timeframes can be provided at this time.

## Recommendation #286, Yucca Mountain as Interim Storage Site

1. **Accept the BRC's recommendation to establish one or more interim storage sites for U.S. high-level nuclear wastes.**
2. **Designate Yucca Mountain as one potential interim storage site for U.S. high level nuclear waste.**
3. **Request funding for the completion of Yucca Mountain as an interim storage site.**
4. **Develop and publicize an action plan for opening Yucca Mountain to receive interim storage radioactive waste.**

### Department Response (June 19, 2012)

Thank you for your recommendations, "Yucca Mountain as Interim Storage Site" and "Assess Feasibility of Disposition of SRS Canisters to WIPP." As a whole, the Department of Energy Savannah River Operations Office (DOE-SR) acknowledges the comments made within your recommendations. In response to the items listed in the recommendations, the Department offers the following:

The Department is currently evaluating the recommendations of the Blue Ribbon Commission (BRC) regarding long-term waste storage and disposal. Repository and interim storage sites will be considered in accordance with a consent-based process as outlined by the BRC. Additionally, the Department's experiences at WIPP are being considered as part of the assessment to respond to the BRC. The Administration's strategy regarding these matters is expected to be delivered to Congress by the end of July 2012.

Once the strategy is submitted to Congress, DOE-SR will make arrangements for the CAB to be briefed at a future meeting.



## Recommendation #287, Disposition Planning and Dry Storage of Spent Nuclear Fuel

- 1. Continue to disposition all research reactor spent nuclear fuel stored in L-Basin using the H-canyon and considering the highly enriched uranium which can be utilized by the private nuclear power industry.**
- 2. Assess the status of SNF disposition planning and advise the CAB when disposition plans can be developed for both SNF presently at SRS and the remaining SNF yet to be received.**
- 3. Assess the feasibility of SNF dry storage and advise the CAB which if any of the SNF should be placed in dry storage with an emphasis on SNF slated to remain at SRS in an extended storage configuration.**

# Recommendation #287, Disposition Planning and Dry Storage of Spent Nuclear Fuel

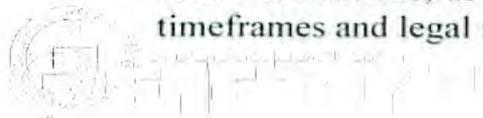
## Department Response (August 8, 2012)

Thank you for your recommendation on Disposition Planning and Dry Storage of Spent (Used) Nuclear Fuel (UNF). The Department is currently evaluating the Recommendations from the Blue Ribbon Commission (BRC) on America's Nuclear Future regarding long-term waste and UNF storage and disposal as mentioned in the Department's June 19, 2012, letter responding to your Recommendation Number 286 and 290. The Department's response to the BRC recommendations is expected this summer.

As you are aware, a decision to process additional aluminum-clad UNF utilizing H-Canyon beyond the currently planned processing of certain vulnerable UNF has not been made and would require amending the existing Savannah River Site (SRS) UNF Record of Decision, which identifies melt and dilute as the method to be used to dispose of such UNF.

Furthermore, UNF disposition planning is dependent on decisions that have yet to be made and are expected to emerge as part of implementing the Department's response to the BRC recommendations. Once the response is submitted to Congress, the Department will provide a briefing to the CAB on how disposition of UNF will be considered as part of implementing the Department's response.

Currently, SRS is evaluating the potential for dry storage of the L-Basin UNF. The CAB received a briefing on this work in the 2012 Full Board meeting on July 24, 2012. The Department values the CAB's supportive position of the SRS programs' capabilities and readiness to actualize the final BRC recommendations, as quickly as possible. The Department appreciates the CAB's understanding of the timeframes and legal requirements necessary before decisions can be made regarding these programs.



## Recommendation #291, Development of Defense Waste Processing Facility Canisters and Research Reactor Spent Nuclear Fuel Shipping Facility and Shipping Cask

**The Savannah Rivers Site Citizens Advisory Board recommends that DOE commence plans and actions to remove the DWPF canisters and research reactor spent nuclear fuel from SRS to include:**

- 1. Development of shipping containers for the DWPF canisters and research reactor spent nuclear fuel for off-site shipment to a repository.**

### Department Response (August 27, 2012)

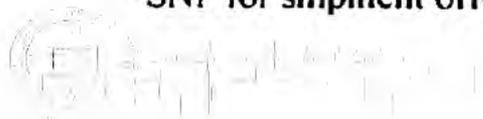
The Department is currently evaluating the Blue Ribbon Commission (BRC) on America's Nuclear Future recommendations regarding long-term waste and SNF storage and disposal, and devising an implementation strategy. In order to maximize the synergy between the High Level Waste (HLW) Glass Canisters, the Savannah River Site (SRS) SNF, and other Department of Energy (DOE) facilities, it will be necessary to first make decisions regarding a federal repository for SNF and HLW. These decisions have not yet been made. Therefore, the Department is not considering the development of shipping containers for the DWPF canisters and Research Reactor SNF at this time. As we committed in our June 19, 2012, response to Recommendations 286 and 290, the Department will brief the CAB once the Department's Response is submitted to Congress and will incorporate into the briefing how transportation infrastructure for interim storage and/or disposal will be considered as part of the overall strategy.

## Recommendation #291, Development of Defense Waste Processing Facility Canisters and Research Reactor Spent Nuclear Fuel Shipping Facility and Shipping Cask

2. **Construction of a facility for handling and preparing both the DWPF canisters and spent nuclear fuel for shipment off-site for disposition.**

### Department Response (August 27, 2012)

The Department is currently evaluating the BRC on America's Nuclear Future recommendations regarding long-term waste and SNF storage and disposal, and devising an implementation strategy. Transportation infrastructure, including casks to be utilized, transportation mode, and loading/unloading facilities, are dependent on decisions that have yet to be made and are expected to emerge as part of the overall strategy for storage and disposal. As we committed in our June 19, 2012, response to Recommendations 286 and 290, the Department will brief the CAB once the Department's response is submitted to Congress and will incorporate into the briefing how transportation infrastructure for interim storage and/or disposal will be considered as part of the overall strategy. However, it is unlikely that a joint facility will be capable of handling both the DWPF canisters and the SNF due to the different loading techniques that will be required and the current distance between the storage areas. Therefore the Department is **not considering the development of a facility for handling and preparing the DWPF canisters and SNF for shipment off-site at this time.**



## Recommendation #291, Development of Defense Waste Processing Facility Canisters and Research Reactor Spent Nuclear Fuel Shipping Facility and Shipping Cask

### 3. Advising the CAB when such actions can be budgeted for and funded.

#### Department Response (August 27, 2012)

The Department's first priority is the safe maintenance and operation of the facilities. When activities are budgeted for future work related to shipments, DOE will advise the CAB.

## Recommendation #291, Development of Defense Waste Processing Facility Canisters and Research Reactor Spent Nuclear Fuel Shipping Facility and Shipping Cask

4. Explain the process for the DWPF canisters and research reactor spent nuclear fuel to be accepted and moved to the WIPP facility.

### Department Response (August 27, 2012)

The Department is developing an implementation strategy in response to the BRC recommendations. Recommendations related to disposal of HLW and SNF will be discussed and coordinated with local, state, and national stakeholders. At present, WIPP's mission is limited to disposal of defense Transuranic (TRU) waste; therefore, its design and regulatory approvals only support TRU waste disposal. Additional evaluation is necessary to determine whether any technical barriers exist to disposal of HLW and SNF at WIPP.

The Department values the CAB's supportive position of the SRS programs' capabilities and understands the CAB's desires for movement of the DWPF canisters out of the State of South Carolina. The Department also understands the CAB's and the local community's concerns associated with the current lack of a path forward for the disposition of HLW and SNF. However, the Department must move at a pace that ensures any actions taken are done so that the environment and public are safe. As stated previously, the Department is currently evaluating the BRC on America's Nuclear Future recommendations regarding long-term waste and SNF storage and disposal. Once this evaluation has been completed, a strategy for the disposition of HLW and SNF can be developed.

# Recommendation #295, Implementation of Spent Nuclear Fuel Exchange Program with Idaho

The Savannah River Site Citizens Advisory Board recommends that DOE:

1. Conduct an economic study to determine the feasibility of reinstating the Spent Nuclear Fuel Exchange Program with Idaho to include:
  - a. Evaluating both the upfront and overall costs of transportation and processing in H-Canyon vs. extended storage and disposition of SNF by some other means.
  - b. Assessing other challenges such as gaining political approval, capital funding for needed shipping facilities and containers, etc.
2. Re-examine the economy of processing SNF through H-Canyon considering that additional HEU will be recovered and made available for reuse by the commercial power industry.
3. Re-examine the advantage of having all SNF processed at SRS and not held for extended storage at SRS.
4. Provide the information developed from this study to HQ and attempt to have this information factored into the HQ evaluation of processing SNF as a disposition option for SNF.



## Recommendation #295, Implementation of Spent Nuclear Fuel Exchange Program with Idaho

### Department Response (November 14, 2012)

Thank you for your recommendation on evaluating the feasibility of reinstating the Used Nuclear Fuel (UNF) Exchange. We cannot accept this recommendation as a Savannah River action at this time since a decision has not been made on processing of UNF in H-Canyon. Without a decision to process the aluminum clad UNF in H-Canyon, it is not in the Department's best interest to consider transfers around the country of UNF.

In regards to the recommendation requests to inform Headquarters (HQ) on the economics and technical capabilities of H-Canyon, HQ is well aware of the economics and H-Canyon's capabilities, and these are being factored into the National Environmental Policy Act decision regarding processing.

The Department understands the CAB's position of wanting to process the UNF, but as you are aware until a Record of Decision regarding processing is made anything else done in that regard could prejudice the decision. Once a decision is made we will brief the CAB on that decision, and could reconsider your recommendation at that time if the CAB so desired.

## Recommendation #296, SNF Processing Credit for H-Canyon Operations

The Savannah River Site Citizens Advisory Board recommends that DOE:

1. Reevaluate the desirability and economics of processing of SNF in H-Canyon considering that revenue generated could be used to offset increased operating costs.
2. Present such an option to HQ and strongly represent the schedule improvements, the saved storage costs, and the potential improved health and safety impacts.
3. Make an appeal to HQ to allow increased cost of H-Canyon full operations be funded in part by the revenues generated from the recovered uranium sales.

## Recommendation #296, SNF Processing Credit for H-Canyon Operations

### Department Response (November 19, 2012)

Thank you for your recommendation on obtaining processing credit from Highly Enriched Uranium (HEU) – blend down sales to offset the H-Canyon full operations costs. We accept the three subparts of your recommendation. The Department is currently evaluating how and under what conditions these funds could be used by the site. This evaluation is in the early stages and is being conducted in a joint effort by Headquarters (HQ) and Savannah River. There are many considerations to evaluate due to funding requirements in the Government.

As you are aware at this time, the Department is not allowed to recoup these fees. If this changes in the future, Savannah River Site will provide a briefing to the CAB on what portion is recouped, and what constraints are in place for its use.

The Savannah River Site Citizens Advisory Board recommends that DOE:

1. Assess the contingency budget input provided herein and commit to dealing with the cleanup consistent with emphasis on production extending from used nuclear fuel processing through production of high level waste canisters.

# Recommendation #302, Contingency Budget Planning Input for Severe Budget Cases – Joint with S&LM Committee

## Department Response (December 4, 2012)

DOE-SR acknowledges the CAB concern with respect to possible increased budget constraints in future years and continues to aggressively position the budgetary needs of the Site to ensure cleanup progress continues. The following are the current categories utilized to prioritize budget development:

- Minimum Safe Operations & Essential Site Services
- Regulatory Milestones & Commitments
- Liquid Waste Production
- Nuclear Materials Safe Storage & Production
- Soil and Water Remediation
- Facility Deactivation and Decommissioning

As a reminder of how stakeholders such as the CAB have a voice in prioritizing cleanup activities at various Sites, each year the Principle Assistant Secretary for Environmental Management requests input and recommendations from stakeholders. This is referred to as the Integrated Priority List (IPL) process. In recent years the CAB has provided such input for Fiscal Years (FY) 2013 and 2014 and those inputs were included with budget submittals to DOE Headquarters.



## Recommendation #303, Disposition of Spent/Used Nuclear Fuel from L-Basin through H-Canyon Considering the Plutonium Processing Impacts likely to be encountered

***Given the disadvantages of the current wet storage system, processing obstacles, lack of an available national repository for years to come, need for additional storage space facing SNF/UNF on the SRS site, and all the associated costs, it is recommended that DOE:***

- 1. Authorize and fund the processing of L-Basin SNF/UNF in H-Canyon as a matter of urgency considering the considerable length of the SNF/UNF campaign and the possible limited life of H-Canyon.***
- 2. Reassess the SNF/UNF processing time and capacities for H-Canyon considering that plutonium will likely be processed in H-Canyon (as a result of a related plutonium disposition program) and may possibly extend the end point for H-Canyon operations.***
- 3. Establish the length of the processing campaign of the SNF/UNF in H-Canyon considering the parallel processing needs of the plutonium being processed for the Mixed Oxide Program.***
- 4. Develop a System Plan to document the revised H-Canyon schedule and the impact on the DWPF schedule.***
- 5. Continue processing the L-Basin SNF/UNF through H-Canyon after the vulnerable fuels have been processed.***

## Recommendation #303, Disposition of Spent/Used Nuclear Fuel from L-Basin through H-Canyon Considering the Plutonium Processing Impacts likely to be encountered

### Department Response (December 6, 2012)

Thank you for your recommendation on disposition of UNF from L-Basin through H-Canyon. We accept all five subparts of the recommendation. As we responded to the CAB's Recommendation #296, the Department understands the CAB's position of wanting to process the UNF in H-Canyon. We are actively working with Headquarters on a pathforward for disposition of some UNF. Discussion of this pathforward is too premature at this time. We believe that after the first of the year the Department may be in a position to brief you on the specifics which should address all subparts of your recommendation.