

Savannah River Site

Citizens Advisory Board

Recommendation 308

Request for Long-Term Assessment:
Disposition of Research Reactor Fuels stored in L-Basin

Background

The Department of Energy (DOE) has for many years had a program for the receipt of Research Reactor (Spent Nuclear Fuel SNF) at SRS. Over the past 40-50 years this has been a successful international safeguards program. The Department of Energy has received and stored this Research Reactor SNF in L- Reactor Basin for the last 10-15 years. The Research Reactor SNF is continuing to be received at SRS and will be received until approximately 2019. DOE has been assessing disposition plans for this L-Basin SNF for a number of years and has kept open the options for the disposition of this material. In the year 2000 DOE issued a Record of Decision which established Melt and Dilute as the preferred alternative for the disposition of the Research Reactor Spent Fuel. A number of years later this decision was reassessed and this option was no longer favored.

In the 2010 timeframe the Research Reactor SNF disposition issue was documented in a Supplemental EIS. No clear disposition option has been fully approved by DOE. However in 2012 DOE made a decision to process a relatively small portion of the SNF which was considered to be “at-risk”. Processing began on the “at risk” material (SNF which was considered to be somewhat vulnerable to corrosion) in 2012 so that portion of the SNF is being processed through H-Canyon in accordance with continued recommendations by the CAB to process the material in that manner. Further, DOE made an additional incremental decision in 2013 (Amended ROD dated March 2013) to process another portion of the SNF inventory (approximately 1000 bundles and 180 HFIR units) in H-Canyon which again is a positive measure which the CAB supports. This latter decision has the very practical feature of allowing the Site to receive all the SNF from Research Reactors that is now programmed for receipt at SRS without requiring an expansion of the L-Basin storage capacity.

The two processing decisions are considered very positive and commendable actions by DOE.

Discussion

The remaining Research Reactor Spent Nuclear Fuel not subject to the decisions noted above continues to have an uncertain disposition path. DOE surveys the remaining SNF very carefully and has implemented an Augmented Monitoring and Condition Assessment Program which looks at the SNF closely to ensure extended life integrity. Based on that and other assessments DOE now contends that the remaining fuel can be safely stored for 50 years.

By all outward indications DOE seems likely to store the remaining Research Reactor SNF for 50 years.

Since DOE is handling these disposition actions in a piecemeal manner it raises the question, “What is the long-range thinking on this issue?” From a CAB perspective there is an immediate option available of processing this material through H-Canyon. This approach is viable, being both cost-effective and technically feasible. Lurking in the background is the concept that H-Canyon may not be available for operation too many more years and it seems that a timely decision would much desired.

On the other hand the CAB has been told that dry storage of the remaining Research Reactor Spent Nuclear Fuel may be a desirable approach.

This entire issue seems to be confused and unclear.

Recommendations

The Savannah River Site Citizens Advisory Board recommends that DOE:

1. Assess the disposition of Research Reactor SNF being stored in L-Basin and Research Reactor SNF yet to be received and:
 - a. Advise the CAB of the process for reaching a decision on the disposition of the remaining Research Reactor Spent Nuclear Fuel
 - b. Provide the CAB some insights on when such a decision will be made.
 - c. Provide the CAB some insights on where the program is going “long term” if the disposition decision is not imminent within the next 2-3 years.