

Research and Development for Reprocessing of Used Nuclear Fuel
Draft Recommendation
Rose Hayes/Donald Bridges- March 22, 2011

Background

The Blue Ribbon Committee on America's Nuclear Future seems likely to suggest that reprocessing of Used (Spent) Nuclear fuel may be viable and should be studied further. H-Canyon seems to offer a great deal of capability for any needed studies and should be retained as such until the BRC presents its recommendations to the DOE.

The shielded Chemical Processing H-Canyon is an ideal facility for feasibility and cost studies for many aspects of reprocessing. Further, Used nuclear fuel currently being stored in L-Basin could possibly be used to support this work.

The SRS Citizens Advisory Board supports the reprocessing of foreign and domestic research nuclear fuel and maintaining the H-Canyon capabilities to process these fuels. The CAB also supports studies in support of the reprocessing of commercial used nuclear fuel. In general, the CAB supports any such related studies that extend the life and use of Site facilities in the performance of work that is comparable to the production activities of the past 55 years.

In view of this it would be prudent for the Site to be proactive in establishing SRS as a location to be considered in R & D for reprocessing. Reprocessing seems to conceptually offer a number of positive attributes:

- 1) Reduces the amount of high-level nuclear waste requiring long-term storage.
- 2) Minimizes risks associated with storage of used fuel in spent fuel pools.
- 3) Conserves natural resources by extracting nuclear fuel for further irradiation.
- 4) Reduces cost for securing fuel at commercial reactor sites.

Recommendations:

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