Concern for the Effective Utilization of H Canyon
Draft Recommendation
Rose Hayes/Donald Bridges- March 22, 2011

Background

The SRS Citizens Advisory Board is concerned about the effective utilization of H Canyon during the remainder of FY 2011 and FY 2012. A number of uncertainties cloud the situation relative to planning for operations for the immediate future. We understand that the budget picture drives a decision to move the H Canyon to a warm standby condition in the latter part of FY 2011. Also we are aware that there is considerable uncertainty about which nuclear materials will be selected for processing through H Canyon since significant plutonium and used nuclear fuel disposition studies are ongoing (and NEPA decisions are not fully concluded), budget resolution is not completed so as to allow some activities to occur, and input is still needed and sought from external activities such as the Blue Ribbon Commission on America's Nuclear Future. The CAB understands that ongoing studies are still not complete and as the "bigger picture" is developed a clearer picture for H Canyon use as it relates to plutonium and used nuclear fuel disposition may be forthcoming.

As the planning for H Canyon proceeds the CAB feels it is essential to consider a number of key factors including:

-Efficiency and economy of operations. As previous presentations and supporting documents have indicated many nuclear materials need stabilization. The cost differential (and hence savings) between full H Canyon operations and warm standby does not appear to adequately large to merit a "reduced operation scenario". Cost data indicates that full operation would maximize savings.

-Potential loss of capability. With the operating staff reduced and certain operations curtailed there is a real question how likely it would be to ever restore operations to a facility approaching 60 years of age. Restarting H-Canyon would likely require a full scale ORR (Operational Readiness Review) meeting more extensive safety analyses, facility modifications, and personnel training. Further, there are used nuclear fuel assemblies presently at risk in need of processing, that could develop a problem and need stabilization by H-Canyon..

-Increased Safety Risks to Workers and Public. With the loss of H-Canyon disposition capability for materials such as plutonium and used nuclear fuel there is some increased risk by long-term storage at SRS. Further SRS remains in non-compliance with Public Law 107-107 which requires a disposition plan before bringing plutonium to SRS.

-Impact on Stakeholders. A decision to change the operational status of H-Canyon impacts numerous stakeholders without an opportunity to provide input to DOE. These include: TVA which has used highly enriched uranium from SRS down-blended for use in commercial reactors; South Carolina Governor's Nuclear Advisory Council which has expressed concern over the inability of DOE to complete nuclear materials disposition in a timely manner; the Defense Nuclear Facilities Board and their concern about the need to keep H-Canyon operational for nuclear materials stabilization and

disposition; and the Aiken County Legislative Delegation which has touted H-Canyon as a unique national asset.

Given the above factors, the CAB believes the priority of H-Canyon should be to process at risk nuclear materials such as UNF and plutonium. While decisions are still pending on disposition options on some materials and the Canyon is still available, this situation may offer a unique opportunity. One such approach is to acknowledge that certain of the nuclear materials (a limited quantity) of the very large amount under consideration could be effectively processed in H Canyon while this larger matter is being assessed.

If a small subset of the materials under consideration could be removed from the larger quantities and processed in H canyon valuable production time and scheduled end point time would not be lost. In many instances the programmatic or environmental impact or cost is not vastly different, so identifying this smaller subset may be relatively straightforward. The smaller quantities should be large enough to keep the Canyon productively occupied while at the same time ridding DOE of the more vulnerable materials during a period awaiting decisions for all the materials involved which could take many more months or possibly years.

However, this would require that priority be placed on H Canyon operations along with the emphasis on the liquid high-level waste activities.

As we understand it H Canyon will have completed processing all available and approved Used Nuclear Fuel, Plutonium, and Highly Enriched Uranium by mid summer 2011. By taking this approach DOE would not be faced with the difficulty of shutting down operations (and the potential loss of operators), while somehow maintaining that facility in a state of readiness. It seems on the surface that financial savings would not be significant driver between full constructive operations and a minimal safe condition.

Therefore, the most cost-effective approach would be to process additional materials and using the full capabilities of H Canyon and the related HB Line. This adds the greater benefit of preparing materials for disposition in a constructive manner and avoiding schedule delays while awaiting decision for the larger amounts of materials.

Recommendations:

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.
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).
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).

4. Describe the approval process that would be involved in sending significant amounts of plutonium to WIPP and the degree of confidence DOE has that such a plan would be fully implemented.
5. 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.
6. Assess the entire 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.).
7. 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.
8. Explain how the Department of Energy FY 2012 Congressional Budget Request is consistent with current Public Law 106-398 – October 30, 2000, Section 3137. The FY 2012 budget request states "H-Canyon will be maintained in a safe standby state, pending the decision on spent (used) nuclear fuel processing". Whereas, Public Law 106-398 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 operate and so maintain such facility".
9. Provide the path for the disposition of UNF/SNF foreign and domestic fuel that is currently being stored in the L-Basin. Storage of used nuclear fuel raises the concern that SRS will unnecessarily store used fuel in the L-Basin if the ongoing program to process the fuel in H-Canyon is discontinued. The basin is almost full and additional fuel assemblies are planned. The citizens of SC should not be subjected to the risks, real or not, of storing UNF/SNF and are supposedly protected from by Public Law 10-107, section 3155, 4(a).
10. Provide a forum such as a public workshop in which stakeholders can provide input regarding the proposed transition of H-Canyon from an operational facility to a flushed/deinventoried facility. This decision impact numerous stakeholders and their input should be considered by DOE in a forum that permits a clear understanding of the issue and impacts. Invitees to such a forum should include:
    a. TVA
    b. SC Governor's Nuclear Advisory Council
    c. Defense Nuclear Facilities Safety Board
    d. Local Community Leaders.

References

1. Recommendation 259, 11/18/08. "GAO Report Regarding Additional Materials at the SRS H-Canyon". CAB recommended that DOE continue to pursue measures to keep the H-Area assets (people and equipment) fully engaged in stabilizing and dispositioning all DOE legacy nuclear materials.

DOE responded that H-Area assets are fully engaged to operate through 2019 to process 7.5 MT of HEU, 13.5 MT HEU in aluminum clad spent nuclear fuel, and 5 MT plutonium not suitable as feed to the MOX Facility. Closed 9/28/10.

2. Recommendation 235, 7/25/06. "Nuclear Materials Stabilization – H-Canyon and HB-Line". CAB reaffirmed its stance on the importance and continued operation of H-Canyon recommending that DOE aggressively pursue alternatives to keep the H-Area assets (people and equipment) actively conducting risk reduction, such as stabilizing and dispositioning legacy nuclear materials. DOE responded that they are actively and aggressively pursuing H-Canyon /HB Line missions for the future to take full advantage of these key resources. Closed 3/24/09.
3. Recommendation 100, 9/28/1999. "Canyon Utilization and Spent Nuclear Fuel Melt and Dilute Technology". CAB recommended that the Secretary of Energy provide formal assurance that the SRS reprocessing capability will be retained in an operational status suitable to process aluminum-based spent fuel until the melt and dilute technology and engineering development program is successful and NRC formally deems it acceptable for disposal in the national repository and the melt and dilute processing facility is constructed and operational. Recommendation was closed, date not recorded.
4. Spent Nuclear Fuel Management Record of Decision. 65 FR 48224.