



## **SRS Citizens Advisory Board**

Nuclear Materials Management Subcommittee

### **Meeting Record**

**July 27, 1998**

**University of South Carolina, Aiken, SC**

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The Citizens Advisory Board (CAB) Nuclear Materials Management (NMM) Subcommittee met Monday, May 18, 1 - 4 p.m. and 7 - 8 p.m. at the University of South Carolina, Aiken, SC. Subcommittee Chair Tom Costikyan presided at both meetings.

Board members attending from 1 – 5 p.m. included Jimmy Mackey, Ed Tant, Mary Elfner, Maria Reichmanis and Wade Waters. Department of Energy Savannah River (DOE-SR) representatives were de'Lisa Bratcher, Associate Deputy Designated Federal Official for DOE, Rick Ford, DOE Office of External Affairs and Bert Stevenson, DOE-HQ, Office of Fissile Materials Disposition (MD). Donna Martin, Mark Dupont and Gail Jernigan attended from Westinghouse Savannah River Company. Trish McCracken, Peter Gray, Rick Geddes and Russ Messick attended from the public. News reporters Craig Gibbs, Aiken Standard, Kathy Steele, Augusta Chronicle-Aiken Bureau and Brandon Haddock, Augusta Chronicle attended.

Persons attending 7 – 8:30 p.m. were Jimmy Mackey, Ed Tant, Wade Waters and Maria Reichmanis and Mary Elfner. DOE-SR representatives were Jean Ridley, Associate Deputy Designated Federal Official, Rick Ford, Office of External Affairs and Bert Stevenson, DOE-HQ. Donna Martin attended from Westinghouse Savannah River Company.

### **Draft Surplus Plutonium Disposition EIS**

Tom Costikyan opened the meeting and introduced Bert Stevenson, DOE-HQ MD, representing the organization responsible for the United States' excess materials disposition program. Stevenson said he planned to begin the presentation with a video created by his office called "The End Game", then give information on the background of DOE's Material Disposition Office and how upcoming decisions relate to SRS.

After the video, Stevenson said five specific initiatives have heavily influenced DOE's policy toward fissile materials disposition:

- End of the Cold War and Arms Reduction Initiatives
  - Inventories of excess fissile materials in the U.S. and Russia
  - Clear and Present Danger---National Academy of Sciences, 1994
- Commitment to eliminate surplus fissile materials---Presidential Directive, 1993

- Establishment of a permanent fissile materials disposition office reportable to the Under Secretary
- Joint U.S./Russian efforts for plutonium disposition—U.S. Russian Summit Agreements
- About 200 metric tons of fissile materials declared surplus to defense needs—President Clinton, 1995

Stevenson explained the Fissile Materials Storage and Disposition Program addressed consolidated storage, disposition of surplus materials and work with Russia. Stevenson emphasized that work with Russia was probably the most critical element because the U.S. is striving for reciprocal actions because of the risk of fissile materials falling into rogue hands. The National Academy of Sciences stated the situation as a "clear and present danger", more so in Russia than in the U.S.

The current Fissile Material Storage and Disposition Program has evolved from decisions made in the Storage and Disposition of Weapons Usable Fissile Materials Record of Decision in 1996. DOE addressed storage of the materials as well as the disposition.

Stevenson said one of DOE's goals is to consolidate storage. Activities include phasing out plutonium storage at Rocky Flats by shipping the pits to Pantex between 1997 and 1999 and the non pit material to SRS by 2002. Stevenson added, however, DOE realized it could save almost \$1.3 billion by sending the nonpit material to SRS early. SRS has proposed temporarily storing the material in K Area. To do this, DOE would have to amend the 1997 ROD or modify the EIS. He said initial review did not indicate any significant environmental impacts from early movement.

Decisions on other activities required to store plutonium and surplus uranium are pending decisions in the Surplus Plutonium Disposition EIS. For example, the decision on where to move plutonium stored at Idaho and Los Alamos National Laboratory can not be made until DOE decides where it will conduct immobilization, mixed oxide (MOX) and pit disassembly and conversion activities.

The hybrid strategy DOE will use for disposition is immobilization and MOX to reach "spent fuel standards." In the immobilization technology, surplus plutonium will be immobilized with ceramic material surrounded by vitrified high-level waste. The MOX technology burns surplus plutonium as mixed oxide fuel in existing, domestic reactors. Stevenson said MOX was included because it is the only approach Russia will use to dispose of its excess plutonium. Russia believes the immobilization option is too easily retrievable. The U.S. will use the hybrid strategy because it also offers redundancy if there are any problems with one of the technologies, he added. President Clinton reinforced the approach in a letter to Congressman Markey by stating the dual track approach, "...best serves our arms reduction and nonproliferation goals."

Ahead of DOE now is the decision on where to locate the three facilities needed for the disposition activities. Stevenson said the draft Surplus Plutonium EIS does list preferred sites, with SRS as the preferred choice for the MOX and the immobilization facilities. DOE stated that Pantex and SRS are the two sites preferred for the pit disassembly and conversion activities.

Stevenson emphasized the document is draft and no decisions will be made until the EIS is completed and cost and nonproliferation studies are completed.

With several concerns over the potential crossover of defense activities into commercial activities from MOX operations, Stevenson said conditions for MOX use are very specific.

- No reprocessing – "Once-through" fuel cycle only
- Government-owned facility and site
- Reactor License Modification – Limited to plutonium disposition
- Finite Nonproliferation Mission – Shutdown upon completion
- International inspection and verification

Tom Costikyan asked if the reactor used to burn the MOX fuel will also be closed after the work. Stevenson said only the MOX facility will be closed.

Mary Elfner asked if material other than the 50 tons of surplus will be used. Stevenson said the activities are limited strictly to material identified in the public venue as surplus.

Stevenson added that activities will not take place unless there is progress with the Russians. To solidify the pre-requisite of work with the Russians, Congress has placed in writing that the design can be completed but no money spent on construction until progress with Russians on fissile materials disposition is proven.

Jimmy Mackey asked if any agreements have been made with Russia on disposition of materials in strategic reserve. Stevenson said only the surplus material identified by both countries will be disposed. Vice-president Gore signed an agreement the week of July 17 to begin technical discussions with Russia, Stevenson added.

Mackey also asked if the countries would come back to the negotiation table if agreements are broken because of instability of the Russian government. Costikyan commented that the entire disposition effort may be derailed if agreements are broken.

Concerning the U.S./Russian engagement on plutonium disposition, Stevenson said the two objectives were to protect the material against theft or diversion (nonproliferation) and protect against reuse in nuclear weapons (arms control). Activities between Russia and the U.S. include the following:

- DOE funding joint scientific & technical work with Russia
  - Joint technical study, completed 1996
  - Small scale tests and demonstrations – ongoing
  - Russian pilot-scale tests and demonstrations – ongoing
- Standing Committee under Russian Defence Council formed – 1997
- Framework of four agreements for plutonium disposition
  - Technical Cooperation Agreement (just signed by Gore)

- Political agreement - 1998
- Binding Agreement for pilot-scale conversion facility – 1999
- Comprehensive agreements (1998-2000)

Stevenson emphasized the plutonium disposition program depends on Russia. If Russia participates and shows initiative, then the U.S. disposition program will proceed.

In conclusion, Stevenson reviewed the schedule for the draft EIS. He encouraged the CAB to attend the public meeting on August 13 and to tell others about the meeting. The final decision will be made in early 1999.

Costikyan asked Stevenson to explain the drivers for selecting the preferred sites and to identify the risks and benefits with the selection.

Stevenson said the sites ranked equally in many categories, including environmental impacts. The Secretary identified the single discriminator as current missions, he said. Secretary Pena wanted Hanford and Idaho to continue focusing on cleanup missions. Additionally, SRS still maintained a workforce and infrastructure capable of performing future missions.

Costikyan said since cost differences did not appear significant, it was apparent an existing infrastructure would be important in identifying a location for activities.

Questions on the safety of shipping plutonium were asked. Stevenson said most people generally believe it is safer to ship pits because the plutonium is in a less dispersable form. There would be a higher probability that powder would be distributed farther in an accident, than if an accident occurred with pits. However, Stevenson added that shipping pits is generally considered a higher security concern because the pits could be readily used in a weapon. Concerning the number of shipments, Stevenson said there were likely be fewer shipments of pits than plutonium oxide.

Tant said he believed the final decision will be a political decision. Stevenson said many factors will be considered, including cost. He added that an independent firm reviewed the recently released cost analysis for the construction and operation of the facilities and changes were made to the draft EIS as a result of the independent review of the cost.

Costikyan then asked what new risks will be introduced with the new missions. Stevenson said the amount of waste created and the risks involved were insignificant, adding that plutonium is not a high radiation material. The operations also would not create any new waste streams. He did say some of the pits were approaching 40 years old and there could be some release of americium and residual tritium. This would possibly occur only at the pit disassembly plant.

Elfner asked why SRS always appeared to be the "chosen" site or site of choice. Stevenson said the political issues were out of his realm but he pointed out the technical capability of the site and mentioned lobbying for new missions by delegations from South Carolina. Stevenson assured Elfner that the Secretary is provided with technical data as well as information about the political atmosphere.

Wade Waters asked if the construction of a new facility would increase the amount of thermal water to the Savannah River. Bert said the amount is comparable to activities ongoing currently. Ed Tant said he was not concerned about the quantity of water but the quality. Stevenson assured Tant the water quality would not be affected.

Mackey asked about the cost of construction and operation of the three facilities. Stevenson said an initial estimate is \$2.3 billion over 25 years.

To conclude discussion and begin developing a recommendation, Costikyan said he had not heard anything throughout the day that caused him concern. He emphasized he would vote against any actions creating unacceptable risk. At this point, the subcommittee agreed to develop a recommendation supporting missions at SRS based on initial information reviewed in the draft EIS and the fact that DOE states risks of operating disposition facilities are insignificant.

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