SRS Citizen's Advisory Board

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Nuclear Materials Management Subcommittee

Meeting Summary

January 24, 2000
Hilton Oceanfront Hotel
Hilton Head Island, SC

The Savannah River Site Citizens Advisory Board (SRS CAB) Nuclear Materials Management (NMM) subcommittee held a meeting on Monday, January 24, to discuss the status of managing nuclear materials at SRS and to finalize two recommendations: one on the draft Yucca Mountain Environmental Impact Statement (EIS) and the other suggesting that DOE work with the Governor's Office to set a date to remove High Level Waste (HLW) from South Carolina.

CAB Members	Stakeholders	DOE/Contractors
Tom Costikyan	Jim Brownlow, SCDHEC	John Anderson, DOE
Beaurine Wilkins	Larry Callair	Donna Martin, WSRC
Ken Goad		
Brendolyn Jenkins		

Nuclear Material Management Status at SRS

Tom Costikyan, CAB NMM subcommittee chair, introduced John Anderson, DOE-SR Materials and Facility Stabilization (MFS) Deputy Assistant Manager, to provide an informal update on nuclear materials management at SRS. Anderson began the discussion by stating that SRS's primary goal is to convert leftover materials from the Cold War to a stable, solid form. He explained that when the Cold War ended and operations were halted, much of the material was left in liquid and mixed form. That material must be stabilized then placed in a disposition program.

One of the nuclear materials to be managed is plutonium. DOE's plan is to place all the excess plutonium, even that in liquid form and in residues, in a disposition program. Before the plutonium can be placed in the disposition program, however, it must be converted to a metal button or oxide powder, Anderson said. Normally, metal buttons are produced in F Canyon and oxide is produced in the HB Line. With the completion of the K Area Materials Storage (KAMS) project, SRS will be ready to receive stabilized plutonium from Rocky Flats this year. In addition plutonium at SRS, excess plutonium pits will come to SRS, be disassembled and converted into a form useable for mixed oxide (MOX) fuel in the Pit Disassembly and Conversion Facility.

Anderson said uranium is another nuclear material being dealt with at SRS. Uranium is used as a fuel for reactors and the Tennessee Valley Authority (TVA) has agreed to use excess uranium from SRS. According to Anderson, the highly enriched uranium will be taken from fuel, dissolved and blended with depleted uranium so that is would be usable by the TVA reactors. Until the programs begin, however, Anderson said both uranium and plutonium has to be stabilized and stored.

Other materials in the nuclear materials program but not part of the weapons program are americium/curium and neptunium-237. The americium/curium is used in scientific research and the

neptunium-237 was converted to plutonium-238 and used by the country's space program. Anderson said the plan for both materials is to put them in a stable form.

As stated earlier, Anderson said one of DOE's immediate goals at SRS is to chemically process the material requiring long-term storage and already approved to be processed through the canyon, complete the use of the canyons and place them in deactivation status.

Larry Callair, public, asked if SRS has enough storage capacity for all the materials requiring stabilization. Anderson said SRS has to make sure enough storage space is available. Originally, SRS had planned to build an Actinide Packaging and Storage Facility (APSF) to store all of the materials. Because there was a possibility of SRS getting new missions, however, DOE felt the facility should be reevaluated to see if a different type of facility would be needed for storage and new missions. Anderson said SRS is currently looking onsite at converting the 235-F building to storage capability.

Anderson emphasized SRS does have adequate storage for onsite materials. The material is stored in a long-term storage container called a 3013 (an inner can in a robust outer can). Both metal and oxide can be stored in the container. Anderson did add that to get an oxide, the plutonium has to be "fired" at a very high temperature. The APSF was going to be used to fire the plutonium to oxide. Brendolyn Jenkins, CAB, asked which had a longer shelf life—metal or oxide. Anderson said they are equal in storage ability.

Ken Goad, NMM subcommittee vice chair, asked if there was a fixed time the 3013 could be stored. Anderson said the general rule for the 3013 is long-term storage of 50 years, although he said the same type of materials have been safely stored in less robust containers since the 1950s. The 3013 container is sealed with helium and no moisture can get inside of the can.

Jenkins asked about the path of the plutonium after it is stabilized and stored. Anderson said all of the material could go to the immobilization program but only a portion could go to MOX because much of the plutonium is not pure enough for MOX fuel. Anderson emphasized, however, that DOE's decision is to pursue a dual track of sending 17 tons to immobilization and 33 tons to MOX. He said the bottom line is that the excess material will be put into a final form that will be acceptable at Yucca Mountain if it becomes the federal geologic repository—either disposed in vitrified glass logs or spent nuclear fuel.

Beaurine Wilkins, CAB, asked if the 3013 would be ready for shipping after it is packaged. Anderson said the 3013 can be shipped in a shipping container as is. In fact, the material coming to the KAMS facility from Rocky Flats will be in 3013s inside of shipping containers. The material will be stored in KAMS in the shipping container.

Costikyan said in a past CAB recommendation, the CAB supported material coming to SRS from Rocky Flats to be stabilized. Anderson agreed some would need to be stabilized although SRS has stated the majority of the material has to be in a stable form before it comes to SRS.

Costikyan then asked about uranium-233. Anderson said most of the U-233 is located at Oak Ridge. SRS has assisted Oak Ridge in the past with technical issues although a specific disposition path has yet to be identified.

Jim Brownlow, South Carolina Department of Health and Environmental Control, asked what was the most inexpensive way to stabilize and store the material. Anderson said SRS was actually looking at three different options of storing and stabilizing plutonium: (1) construct the APSF, (2) look at a combination of 235-F and KAMS, (3) convert all of the material to plutonium metal buttons and store in 3013s in existing vaults. Anderson said the 235-F/KAMS may not be as costly than the APSF because a new facility would not have to be constructed. However, a cost comparison for the third option has not developed. In all options, there will be costs of future handling of the material.

Concerning the biggest SRS decisions ahead in nuclear material management, Anderson said a decision on the storage facility would be made in March. Revising an implementation plan for the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-1 is scheduled for April. With the recent DNFSB Recommendation 2000-1, issued in mid-January, Anderson said SRS will now have to address it as well as proposed changes to 94-1. In Recommendation 2000-1, the DNFSB states it is not satisfied with DOE's progress on 94-1 and suggests that DOE inform the President and Congress that commitments made in 94-1 have not been met. Although the DNFSB is not a regulatory agency, members were appointed by the President to oversee nuclear facility operations. Jessie Roberson, the former DOE site manager at Rocky Flats, is on the DNFSB.

Of the original 43 milestones listed in 94-1, Anderson said only nine milestones remain. Anderson said SRS is at a turning point to get remaining work completed. Before the DNFSB submitted the new 2000-1 recommendation, DOE had already asked the contractor, Westinghouse Savannah River Company (WSRC), to rank the remaining milestones according to risk. Recommendation 2000-1 listed SRS projects in the order of what should be completed first and the list was similar. Stabilizing the uranium solution in tanks outside of H Canyon, regardless of DOE's plan to convert the uranium to fuel for TVA, was considered the most important to be completed, followed by stabilization of the americium/curium and the neptunium.

Anderson said SRS had freed up money to put toward blending down the HEU for TVA. Design plans for the americium/curium are also underway. Anderson emphasized all work depends on the limited budget provided to SRS.

Another project Anderson said SRS is strongly supporting is the Nuclear Material Stewardship Program. In particular, SRS personnel comprise one of three lead groups developing the Nuclear Material Integration Plan in which DOE is taking inventory of nuclear materials at all DOE facilities and identifying disposition path. The report on how to safely manage and dispose of the excess materials remaining from the Cold War is due to Congress in April.

Costikyan said the CAB has supported bringing materials to SRS to assist in the Nuclear Materials Stewardship. However, he said stakeholders will likely be concerned if tons of material comes to SRS without a clear disposition path out of the state.

In the closing, Anderson said he was pleased to say that the KAMS project remains on schedule to bring Rocky Flats plutonium and metal oxides to SRS for storage. He said this was an important project to show that DOE-SR and its contractor can deliver.

Discussion of Recommendations

Costikyan reviewed the Yucca Mountain Draft EIS recommendation and explained how the various comment and recommendation points were included during development of the recommendation. No changes to the recommendation were made.

Concerning recommendation 2, Costikyan said the Statement of Principles agreed upon between the Secretary of Energy and Governor Hodges of South Carolina contained vague wording on removing high level waste from SRS and no date for removal. He said this recommendation simply asks that a schedule and date be included.

Goad agreed with recommendation 2 and added that SRS stakeholders have been very supportive of SRS conducting activities to help close Rocky Flats. He emphasized, however, SRS should not be left "holding the sack".

Meeting handouts may be obtained by calling 1-800-249-8155.