



SRS Citizens Advisory Board

Nuclear Materials Management Subcommittee

Meeting Summary
September 23, 1996
Beaufort, S.C.

The Citizens Advisory Board (CAB) Nuclear Materials Management (NMM) Subcommittee held a two-part meeting on Monday, September 23 at the Holiday Inn in Beaufort, SC. Subcommittee members attending the afternoon session were Tom Costikyan, chairperson, Bob Slay, CAB chair, Brendolyn Jenkins, Ed Tant, Suzanne Matthews, and Thelonius Jones. Savannah River Site resource personnel attending included Donna Martin, WSRC, and Jay Bilyeu, Department of Energy-Savannah River, Associate Designated Deputy Federal Officer, DOE-SR. Other WSRC employees attending were Mary Flora, Ray Conatser and Rick Geddes. Leigh Ann Williams represented the South Carolina Department of Health and Environmental Control. Public attendees were George Minot, K.B Raut, CAB, Bob Matthews and Janakiram Naidu. CAB facilitator, Walt Joseph, also attended.

In the evening session, Joy Powell, SCDHEC, Trish McCracken, Augusta Citizens Advisory Board, Pat Pickney, and Nancy Thomas attended in addition to subcommittee and resource personnel listed above.

AFTERNOON SESSION: 2 - 5:30 P.M.

Ten Year Plan Presentation

Jay Bilyeu, DOE-SR, gave a presentation on the nuclear material aspects of the DOE-SR Draft Ten Year Plan. (See attached slides) Bilyeu said the presentation was the same one given to Al Alm, Assistant Secretary of Environmental Restoration and Waste Management and DOE visionary of accelerating DOE cleanup work to within a 10-Year period.

The Ten Year Plan is DOE-SR's baseline to achieve certain clean up and stabilization projects. Bilyeu said several upfront issues of the Ten Year Plan included the question of whether DOE should extend the lifetime of the canyon and delay deactivation to assist with stabilization of materials from other facilities, particularly Rocky Flats. Another issue not included in the baseline plan was the pending requirement of SRS blending down 25 metric tons of high enriched uranium to low enriched uranium. After the material is stabilized, sale of the low enriched uranium to the Tennessee Valley Authority if successfully negotiated.

Concerning storage of Rocky Flats material at SRS, Bilyeu explained a vault will be constructed to store SRS materials such as actinides, neptunium and americium/curium to get those materials

out of the canyon buildings in preparation for deactivation. Bilyeu added that expanding the vault design at SRS would be more cost effective than building a new facility at Rocky Flats.

George Minot, public attendee, asked if the additional materials would create more risk at SRS. He also questioned public support of transporting the material from Rocky Flats to SRS.

Discussion then turned to canyon deactivation as outlined in the Ten Year Plan baseline. Bilyeu said the seismic issue with F Canyon was resolved, with the H Canyon seismic issue to be resolved next.

Costikyan asked about potential decisions of using one canyon versus two to complete stabilization work and new missions. Bilyeu said new missions would change the current baseline scenario in the Ten Year Plan and could implement mortgage reduction opportunities thus supporting Alm's goal to reduce the total cost of the DOE-wide program. Cost estimates are being developed to identify which is the most cost effective to build new facilities and store material at each site or to consolidate all material at one or two DOE locations.

Mary Flora, WSRC, said due to political and economic pressure in Denver, Rocky Flats is destined to be closed and the land turned over to the municipality. Geddes said some jobs oriented citizens, primarily Rocky Flats employees, continue to support storage and stabilization of nuclear materials at Rocky Flats.

Minot said it appears groups and organizations are wanting to bring material to SRS to continue jobs. He asked if DOE would have to "redo" previously completed SRS environmental impact studies. Geddes responded that a new EIS will be prepared for the Rocky Flats plutonium residues.

Minot added the public's perception is that SRS is not taking any other material; he added the public will likely construe SRS is going into the business of being a dumping ground. Bilyeu said all potential new missions would deal with stabilizing the material and preparing it for final disposal. Minot again asked if a DOE would have to reevaluate earlier EISs. Ray Conatser, WSRC, said base cases including ranking are in the EIS. New impacts can be developed and built upon the existing data.

Bilyeu said the basic components of devising a strategy to manage spent fuel at SRS included (1) the technical strategy just completed, (2) an EIS to evaluate all viable alternatives and selecting a preferred alternative and (3) building a transfer and storage facility that will enable DOE to take the fuel out of wet storage. He added the facility will likely be privatized.

Delays in SNF management have resulted from a potential lawsuit by the governor of South Carolina. Conatser added that South Carolina did proceed with a lawsuit to be heard on November 22.

After Bilyeu completed his talk, Costikyan said the subcommittee needed to identify questions and issues, then determine where a CAB opinion could provide the most impact. Costikyan did

not feel privatization was a good focus for the subcommittee. He did think the question of whether Rocky Flats material should be shipped to SRS warranted consideration.

Technical Strategies for Treating, Storing and Disposing of Aluminum-Based Spent Nuclear Fuel presentation

Jean Ridley, DOE-SR, gave a presentation and background on a report developed to identify alternate technologies to treat, store and dispose of aluminum-based spent nuclear fuel. (See attached slides) The report was issued in June 1996 and focused on technical issues only.

Ray Conatser, WSRC, emphasized the report was developed to compare the alternatives, not to compare the alternatives with processing. He said processing is could be considered a baseline.

Ridley said the team was composed of eight individuals from DOE-SR, DOE-HQ and Westinghouse. The options evaluated were (1) Direct disposal in small packages(2) Co-disposal with the Defense Waste Processing Facility (3) Press and dilute (4) Melt and dilute (5) Vitreous Ceramics~Plasma Arc Process (6) Borosilicate glass~GMODs and Dissolve and Vitrify and (7) Uranium Separation/Dilution Options~ Electrometallurgical treatment and Canyon processing (Reference Case)

The concept of direct disposal in small packages addresses criticality concerns. The small packages would then be placed in a larger container for shipment to Yucca Mountain. Co-disposal with borosilicate glass will be placed inside of DWPF containers and be shipped to Yucca Mountain.

Melt and dilute is taking depleted uranium and melting it to a lower enrichment. In electrometallurgical treatments, the uranium and aluminum are taken out of the fuel and the aluminum is disposed of as low level waste. Conatser added the electrometallurgical treatment is similar to reprocessing but on a smaller scale.

Costikyan asked how the various technologies were rated. Ridley said a high score on a 1 - 10 scale was good. The direct co-disposal received the highest rating while advance technologies such as Plasma Arc received lower ratings. Ridley emphasized again the report made technical comparisons only.

Costikyan then said the Record of Decision on the Foreign Research Reactor Spent Nuclear Fuel stated treated of the fuel would begin quickly. He asked about DOE's confidence in using the new technologies by the deadlines imposed by Secretary O'Leary. Ridley said DOE would comply with the milestones of identifying a technology by 1999, then starting the treatment by 2000.

Several members asked about processing spent fuel and if a rating system had been applied to processing. Conatser said processing was originally considered as a reference case and when the rating system was applied, processing received a 98% or 99% rating. However, Conatser emphasized the goal of the study was to compare the alternative technologies to each other, all of

which were in research and development stages. Again, he pointed toward direct co-disposal as the leading choice of the eight options.

Bob Slay, CAB chair, then asked Ridley to provide some background on the task team study on alternative technologies for spent fuel management. The decision to compare alternative technologies was made due to DOE's current policy direction not to process (chemically separate) spent nuclear fuel. The team consisted of persons in the DOE Radioactive Waste Program, DOE-HQ and SR, WSRC and Idaho.

Conatser further explained that processing is discouraged by DOE for stabilizing spent nuclear fuel because of several reasons (1) concerns over nonproliferation (2) profiles of spent nuclear fuel shipments—FRR shipments will continue for about 13 years although the domestic fuel would be shipped for another 20 years on a sporadic schedule.

A steady flow of fuel into SRS would occur over the next 10 years would warrant continuation of the canyons if a processing option was selected. However, Conatser said it would not be financially economical to keep the canyons running for small amounts of material.

Conatser said DOE wanted to get all the potential options out on the table and compare them. Geddes added the comparison to processing would occur in a Site Specific EIS on spent nuclear fuel management.

Slay explained that the CAB made a recommendation in 1995 to bring FRR fuel to SRS and to process the material for stabilization. Part of the recommendation—bringing the fuel SRS—was embraced by DOE, although DOE appears not to support processing the material, Slay continued. At this point, Slay said he did not feel DOE had a plan to manage the fuel and as a result, he has reservations about the 1995 recommendation.

Conatser said DOE's choice to bring the fuel back to SRS was much preferred to leaving it in unstable countries. He pointed out that DOE is making major decisions, with the first being to bring the FRR back to the country. The next decisions will be how to stabilize the fuel, with the final decision being the how and where to dispose of the material.

Geddes asked if DOE could initiate a new technology within three years and not impact the shipping and treatment schedule of the FRR. Slay said the public is not getting a straight answer from DOE and it is getting harder to wait for answers.

Conatser again pointed to major decisions DOE has made. When the canyon seismic study was completed, processing of at risk fuels restarted and will continue to process the materials. Slay said the CAB simply wanted to follow up on its first recommendation and ask, reflectively, what DOE is willing to do.

Minot questioned why DOE-SR is taking back the FRR material while it is in the process of environmental remediation. He said the SRS will soon become filled with foreign fuel and other offsite material. Minot suggested comments on the Ten Year Plan should specify what should not be in the plan.

Attendees then questioned why the SRS draft Ten Year Plan calls for the permanent shutdown of the canyons by 2008. Ridley stated once again that DOE-HQ current policy direction is not to process. Geddes added the Ten Year Plan baseline indicates other technologies are preferable to processing FRR.

In the direct co-disposal of spent fuel alternative, Ridley said one package of SNF could be placed in a canister with five DWPF logs in preparation for longer term containment. Slay said he feels DOE has already made the decision not to process spent fuel, particularly since DOE continues to study other technologies. Ridley emphasized again direction from DOE-HQ was not to process the FRR fuel.

At that point, Slay said the CAB may consider joining with the governor of S.C. and other organizations to insist that DOE consider processing. He added the CAB may revisit its recommendation, specifically the portion recommending processing. Slay also wants to know the reasons why DOE is against processing while it appears processing would save money and reduce the bulk of material.

Conatser and Geddes said the CAB subcommittee could ask DOE to include all options during the scoping period for the Site Specific SNF EIS. Conatser said the EIS will look at all fuel not included in the Interim Management of Nuclear Materials EIS as well as all foreign and domestic aluminum-clad SNF.

Costikyan said he personally was not concerned about processing not being included in the final technical strategy report looking at alternative technologies. However, he does hope DOE will not discard processing as a choice, which could turn out to be the number one choice.

In discussion of other needs for canyon operations, the Rocky Flat plutonium residue EIS and the Storage and Disposition of Weapons Usable Fissile Materials were highlighted. Slay said operations of the canyons should continue if SRS assists with either mission.

Geddes said even making mixed oxide from surplus plutonium requires some canyon functions. Most of the 35 tons of surplus plutonium will have to be stabilized, he added. Most of the material needing stabilization was in DOE's Material and Disposition Program. Slay asked if processing wasn't appropriate for FRR fuel, why was it appropriate for other functions. Geddes said the proliferation risks are lower for spent fuel because it had a radioactive barrier from its irradiation in the research reactors.

In conclusion of her presentation, Ridley said the task team did use processing as a baseline in comparing various alternative technologies. Several members asked if there would be a processing alternative since processing was at the top of the rating scale during initial comparisons.

For clarification, Costikyan asked again if it is an acknowledged fact processing will not be the preferred technology. As before, Ridley said processing will not be the stabilization technology for FRR fuel under the current policy and direction from DOE-HQ. Conatser added that processing will be considered as a viable alternative in the Site Specific SNF EIS.

Ridley emphasized the decision on a technology will not be made until fiscal year 1999 and more direction is provided from the Nuclear Regulatory Commission on waste form criteria. She did say DOE is following the concept of "road ready" condition for SNF.

Concerning the new storage facility, Ridley said the role of the SNF Storage and Transfer Facility will be to treat and package the material for "road ready" form. Costikyan asked if it would still be needed if processing was chosen as the stabilization form. Conatser said such a facility is needed for all of the options, even processing at a later date. The facility would receive the shipments, unload them and store the material before treatment. This would get the material out of wet storage.

In a question about waste streams from processing, Geddes said the volume of stored material would be reduced if you process. Small amounts of high level waste go to DWPF while the separated aluminum becomes low level waste and is sent to the Saltstone facility and mixed with flyash concrete.

In final comments of the afternoon session, Slay said he would like to achieve two goals, (1) ask DOE to provide a comparison of the alternative technologies to processing and (2) sponsor an educational forum on the spent nuclear fuel issue similar to the plutonium disposition education forum sponsored by the CAB in April 1996. Slay also said the primary issue appeared to be operation of the canyons. Matthews said the canyons are the only facilities remaining at SRS to stabilize materials.

Slay continued focusing on an educational forum on the SNF issue to give citizens a chance to hear from experts. He also said the force and support of the public on issues like SNF is important as the CAB pursues answers.

As the subcommittee began summarizing actions, CAB facilitator Walt Joseph said a draft recommendation by another committee on the Ten Year Plan did ask DOE to reconsider deactivation of the canyons. Joseph suggested the subcommittee look at the wording and ensure it agreed.

The subcommittee then adjourned with understanding the path forward and potential recommendation would be developed in the evening session beginning at 7 p.m.

EVENING SESSION: 7 - 9 P.M.

Costikyan opened the meeting and explained the CAB NMM subcommittee was developed to address nuclear material issues. He said the subcommittee heard two technical presentations in the afternoon—None on the 10-Year Plan and the other on a Task Team Study that compared eight alternatives to treat aluminum-based SNF.

The most important aspect of the study, Costikyan said, is that processing was not considered as recommended by the CAB in a 1995 recommendation (#6) on SNF. Costikyan added the subcommittee was told DOE-HQ policy was not to consider processing to treat aluminum-based

fuel, citing nonproliferation concerns as the driver. The subcommittee consensus, Costikyan concluded, was that failure to consider processing was cause for concern.

Slay added the NMM subcommittee had several new members and he wanted to see if they agreed with the processing portion of the 1995 recommendation. Geddes said one aspect has fundamentally changed since the CAB made the recommendation. Processing was a viable option in 1995. It appears that is no longer the case.

Thelonius Jones, CAB, asked which alternative is most cost effective. Geddes said cost estimates will not be determined until DOE conducts cost studies on options in the EIS.

Matthews said if DOE is looking for comments, the CAB should recommend use existing processing resources and prepare for direct disposal. Slay said information is not presented in a way feasible for discussion. It is important, he said for the CAB to have the capability to look at all options.

One suggestion included focusing on processing as an option in the SRS SNF EIS, as well as the draft Ten Year Plan. Matthews said the subcommittee should craft a recommendation asking for processing to be considered as an option.

Several questions on the proliferation indications of processing were asked. Geddes explained that any material could be blended down to low enriched uranium, which is not a proliferation risk. In relation to setting examples to the world of nonprocessing, it was pointed out the U.S. was one of few countries not recycling spent commercial fuel. All members insisted a plan to stabilize the material was needed if DOE intended to store materials at SRS.

In conclusion, Matthews submitted a draft recommendation for comment by the subcommittee. Rather than taking a reactive approach, the subcommittee chose to ask DOE to consider processing as an option in the Ten Year Plan and the SRS EIS. The recommendation also requested DOE provide a comparison of processing with the alternative options.

In final business, Costikyan discussed the upcoming meeting with the safety committee in North Charleston set for Monday, October 21. P.K. Smith was suggested to attend as a technical representative and a CAB member. The general agenda would include introductions by CAB member and North Charleston resident Ed Tant, then an overview of the CAB and discussion on the subcommittee's recommendations by Tom Costikyan.