SRS Citizen's Advisory Board

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Nuclear Materials Committee Meeting

Aiken Federal Building, Aiken, SC
January 10, 2005

The SRS Citizens Advisory Board (CAB) Nuclear Materials Committee (NMC) met on Monday, January 10, 5:00 PM, at the Aiken Federal Building, Aiken, SC. The purpose of this meeting was to discuss the Spent Nuclear Fuel Disposition Planning Status, Nuclear Materials Processing and Storage, Issues for the Nuclear Materials Committee's 2005 WorkPlan, and the Status of NM Recommendations. Attendance was as follows:

CAB Members	**Stakeholders**	**DOE/Contractors**
- Jerry Devitt	Mike French	Kevin W. Smith, DOE
- Karen Patterson	W. Lee Poe	William F. Spader, DOE
- Perry Holcomb	Tracey Carroll	J. L. Taylor, DOE
- William Lawrence	Jon M Peterson	Gerri Flemming, DOE
- Robert Meisenheimer	Russ Messick	Amy Poston, DOE
- Jean Sulc	M. Carl Benhardt	Randy Ponik, DOE
Leon Chavous	Bill McDonell	Wes Bryan, WSRC
Murray Riley	Richard Herold	Bob Hottel, WSRC
	Joe Ortaldo	David Burke, WSRC
	Kelly Hunter	Bill Swift, WSRC
	Manuel Bettencourt	Sonny Goldston, WSRC
		Bob Martini, WSRC
		Les Sonnenberg, WSRC
	DNFSB	John Dickenson, WSRC
- NM committee members	John Contardi	Albert Holloway, WSRC
		Teresa Haas, WSRC
		Lyddie Broussard, WSRC

Note: Bill Willoughby, is a CAB member of the NMC, but was unable to attend this session.

Welcome and Introduction
Karen Patterson, NMC Vice Chair, welcomed the group at 5:00 PM, and requested that each attendee identify themselves and their affiliation. She explained that Jerry Devitt had been delayed and she would chair the meeting until he arrived. She introduced the evening's agenda and asked that the attendees look in their meeting package to see two letters from DOE. She explained that because of the Design Basis Threat Guidance, an update to the Plutonium Storage Study for 235-F is required. She said the Department of Energy (DOE) has agreed to provide more information at a later date.

Ms. Patterson introduced Randall Ponik who has been asked to explain how DOE Environmental Management (EM) and the National Nuclear Security Administration (NNSA) will split their responsibilities for spent fuel at SRS.

Spent Nuclear Fuel (SNF) Disposition Panning Status, Randall Ponik, DOE-SR
Mr. Ponik opened by saying the focus of this presentation would be to bring them up to date on what has changed since they last heard about the SNF Program at SRS. He explained that a recent significant change was the possibility of bringing fuel back from countries that had not been previously identified to participate in the Foreign Research Reactor (FRR) Program. As a result of the Global Threat Reduction Initiative announced in May 2004, our nation's goal is to bring material back as soon as possible if it couldn't be adequately secured in its current location from malicious use.

According to Mr. Ponik, the NNSA is responsible for implementing this new initiative, which has resulted in some SNF Program responsibilities shifting from EM to the NNSA. Under this change, the NNSA will coordinate the planning and transporting of foreign fuel into the United States. The receipt of fuel at SRS will remain with EM as well as the responsibility for the interim storage and disposal of the material. Mr. Ponik explained that this change does not affect the final disposition of the fuel and it would have little impact on the onsite activities at SRS.

Another change detailed by Mr. Ponik is that the Foreign Research Reactor (FRR) mission has been extended in response to a request by forty international reactor operators. Originally, these reactor operators had been offered an incentive to convert from highly enriched uranium fuel to low enriched uranium fuel provided by the United States. He said the timetable called for the receipt of the highly enriched fuel to close in 2009, but as a prerequisite, the SNF had to be out of the reactor and cooled for three years prior to shipment to the United States. Mr. Ponik explained that the program to provide low enriched fuel is behind schedule. The extension to the receipt of fuel was provided because without the low enriched fuel that was promised the foreign reactors would be forced to shutdown. As a result, the amended Record of Decision allows the fuel to be accepted until May 2019 provided the fuel meets the 3-year cooling criteria. According to Mr. Ponik, plans are to ship the fuel from SRS to a federal repository by 2020.

An exception to the newly extended FRR mission is for target material and damaged fuel. Mr. Ponik stated that the disposition path for such material requires H-Canyon to be operational. Under the projected life of H-Canyon, accepting such material after 2009 could potentially leave it without a disposition path and therefore, it was excluded from the 2019 extension of the FRR mission.

Since 1996, 25 shipments of foreign fuel have been received at SRS. The current inventory represents approximately 61% of the projected total for this program. In addition, Mr. Ponik said the Domestic Research Reactor (DRR) Program accepts aluminum clad fuel from research reactors throughout the United States and approximately 67% of that fuel has been received. He said both domestic and foreign fuel is stored underwater in L-Basin. He detailed the project plans that ensure storage in L-Basin was more than adequate for the projected forecast.

Mr. Ponik fielded numerous questions relative to the methods of handling damaged fuel, packaging requirements, and the process by which foreign countries participate in the FRR Program. He acknowledged that in the past the CAB had expressed some potential concerns with the SNF program, but he assured them that there are no plans to store material that doesn't have a disposition path. He stated that if additional fuel is identified through the FRR or DRR Program, further rack expansion to increase capacity could be added in L-Basin. When considering the schedule for the Treatment Storage Facility, Mr. Ponik explained that a delay until 2010 does not represent a serious program risk. He said DOE is pursing a license to allow material acceptance in. the repository including direct disposal of aluminum-based SNF.

Mr. Ponik concluded his presentation by characterizing the program as strong and flexible and that SRS can fully support the interim storage mission.

Nuclear Materials Processing and Storage, John Contardi, Defense Nuclear Facilities Safety Board (DNFSB)

Mr. Contardi introduced himself as the DNFSB site representative to SRS. He thanked the committee for the opportunity to speak to them and to provide the Board's perspective on nuclear material stabilization and storage activities at SRS, and opened his presentation with the background of the DNFSB. He explained that the intent of Congress was to have the DNFSB provide independent oversight of DOE by nuclear safety experts. In that capacity, the DNFSB is charged to evaluate standards; conduct investigations; analyze design and operational data; and provide formal recommendations. Mr. Contardi detailed the powers vested in the DNFSB by Congress and explained the DNFSB mechanisms for communicating any concerns associated with DOE activities. He said the communication tools include a wide range from the informal staff engagement up to a direct notification to the President. He explained that the step to communicate a concern directly with the President was one that would only be used in the event of an imminent or severe threat. He believes the formal recommendation process has been a very effective means of notifying the Secretary of Energy of the need to respond to very serious issues.

Mr. Contardi characterized the DNFSB staff as a relatively small group, but its makeup is one of specialists in a wide range of technical disciplines. In addition, they augment their staff with outside experts when needed for specific issues. While Mr. Contardi serves as a continuous site presence at SRS, other members of the DNFSB are also involved in reviews of various processes including nuclear materials stabilization and storage at SRS. He summarized the DNFSB's conclusions on the three major nuclear materials programs as follows:

Spent Nuclear Fuel at SRS: Mr. Contardi said that overall the DNFSB has not had many issues with the SNF Program at SRS. They have seen drastic improvements in the water chemistry of the storage basin that holds the spent fuel. He stated that a new rack project will increase the storage capacity of L-Basin.

He said the DNFSB does have a concern about the disposition of spent fuel. According to Mr. Contardi, the opening of the federal repository at Yucca Mountain in 2010 is uncertain. He explained that there are shipping issues and other unresolved concerns that have led the DNFSB to conclude that the disposition path for SNF is uncertain at this time. He also said the means for

interim storage is still undecided and a decision is needed on how to get the SNF out of L-Basin. He observed that the Treatment Storage Facility is not in the current contract.

Plutonium Storage: The DNFSB has evaluated plutonium (Pu) storage at SRS at the request of Congress. He said the current strategy is to store the Pu in 3013s within robust 9975 Type B shipping containers in KAMS. Mr. Contardi explained that the DNFSB has questioned DOE's decision to rely on 50-year old facilities in which to store the plutonium. As a result, while the current configuration of KAMs is considered safe, the DNFSB believes a thorough evaluation of the suitability of 235-F is warranted. He stated that DOE Headquarters has ordered a new storage study and the new 235-F rack project has been suspended. While no final decision has been made, Mr. Contardi said he believes consolidation of plutonium in KAMs is a step in the right direction relative to safety, security, and cost. He said the DNFSB supports that move.

He said DOE is considering placing a Pu vitrification process in 105-K. One issue to be resolved is the determination of whether or not the end product of such a process will have to meet the spent fuel standard. There will also be timing constraints associated with vitrification because the Defense Waste Processing Facility (DWPF) would have to be operational to support this potential disposition path. Mr. Contardi characterized the disposition plans for Pu as very pre-decisional and as such, a thorough review by the DNFSB has not been conducted at this time.

Canyon Utilization: Mr. Contardi explained that the DNFSB issued Recommendation 94-1 and 00-1 to ensure the stabilization of legacy nuclear materials was addressed, and significant progress has been made. The Pu stabilization and packaging efforts in FB-Line will soon be completed, and HB-Line has begun production of Neptunium oxide. At the current time, H-Canyon is successfully running a blenddown process for highly enriched uranium.

Mr. Contardi said the utilization of H-Canyon is well defined and funded through this contract and HB-Line is also productive. However, the DNFSB is concerned that potential materials for the canyon are not being adequately considered. He said that future funding is lower than expected to meet the Project Management Plan. Mr. Contardi explained that the availability of H-Canyon is required as per the Record of Decision for Spent Nuclear Fuel. He characterized the DNFSB's position as one that since the canyon has to be available; it should be used as appropriate.

According to Mr. Contardi, materials that should be considered for processing through H Area are slightly irradiated nuclear materials, spent nuclear fuel, Pu, and NNSA nuclear materials which do not have a disposition path. He explained that while wet storage in L-Basin is adequate for now and Pu vitrification is a potential option, consideration should be given to reducing the scope of those projects. He said that given the proven track record of H-Canyon and HB-Line, it is reasonable to use them to reduce the inventory of remaining legacy materials rather than wait on new and expensive facilities. He cited several examples of past projects that DOE had at one time considered prior to the options now under consideration.

Mr. Contardi opened the floor for questions and clarified several points in his presentation. He provided his contact information and encouraged the stakeholders to review current reports on the DNFSB website. Several committee members thanked Mr. Contardi for the information

provided in his weekly reports. He responded by saying that information included in those reports doesn't necessarily mean that there is a problem but rather it is an issue that he wishes to provide a status on to the DNFSB. When asked about the next report to Congress on Pu Storage, Mr. Contardi explained that the report will be updated annually and the next report will be issued in June 2005. Mr. Contardi was asked to present to the full Board and he agreed that he would attempt to do so in the near future.

When questions were raised about hearing from DOE on the changes to 235-F storage, Ms. Patterson advised the committee that DOE has agreed to make a presentation at the January CAB meeting. As a follow-up to this presentation, Karen Patterson asked DOE representatives to provide whatever documents are available on a Pu disposition study or strategy. She also asked DOE to provide additional information on orphan materials in the near future.

Issues for the Nuclear Materials Committee's 2005 Workplan, Karen Patterson, NMC Vice Chair

Karen Patterson provided an overview of those issues that were part of the 2004 workplan. She explained that at the January CAB meeting, the full Board would review all of the CAB's topics and rank them accordingly. She opened the floor for discussion on what nuclear material topics the stakeholders felt should be a priority for the committee during 2005.

Lee Poe asked that either this committee or the FD&SR committee consider adding the topic of end states to the CAB's list. A discussion was held as to what the current status of F-Canyon was and the committee was told that the next F-Canyon presentation would be scheduled for the March CAB meeting in North Augusta, SC.

Upon further discussion, the stakeholders agreed that Pu Storage and Pu Disposition are the two most important issues for this committee to consider during 2005.

Status of NM Recommendations, Jerry Devitt, NMC Chair

Jerry Devitt asked if there was any discussion on potential recommendations. It was agreed that additional information would be needed before any new recommendations could be considered.

Public Comment

Mr. Devitt asked for any other public comment and with none, he then adjourned the meeting.

For additional information or meeting handouts, call 1-800-249-8155.

Follow-Up Actions

1. Schedule a DNFSB presentation to the full CAB. (Responsible Party: Lyddie Broussard)
2. Provide document(s) on the Pu disposition study/strategy (Responsible Party: George Klipa)
3. Provide additional information on orphan materials (Responsible Party: George Klipa)
4. Schedule the next F-Canyon presentation for the March CAB meeting. (Responsible Party: Lyddie Broussard)