SRS Citizen's Advisory Board

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Old Radioactive Waste Burial Ground Focus Group

Meeting Summary

December 6, 2000
Aiken Federal Building
Aiken, SC

The Citizens Advisory Board (CAB) Old Radioactive Waste Burial Ground (ORWBG) Focus Group met on Wednesday, December 6, 5:00 p.m. at the Aiken Federal Building, Aiken, SC. The purpose of the meeting was to discuss long-term stewardship perspectives at other DOE sites, evaluation methods to determine effectiveness of interim action, and the section status of the draft final report. Those in attendance were:

CAB Members	Stakeholders	DOE/Contractors
Karen Patterson	Lee Poe	Rod Rimando, DOE
Bill Willoughby	Todd Crawford	George Mishra, DOE
	Jerry Devitt	Ed McNamee, BSRI
	Bill McDonell	Don Toddings, BSRI
	Bill Lawless	Gerald Blount, BSRI
		Elmer Wilhite, WSRC
		Sonny Goldston, BNFL
		Jim Moore, WSRC

Lee Poe, Technical Lead, said that Jimmy Mackey, Administrative Lead, was unable to attend and extended his apology. Mr. Poe welcomed Rod Rimando, DOE-SR, to the meeting.

Long-Term Stewardship Perspectives at Other DOE Sites:
Rod Rimando stated that several months ago he was requested to look at other sites in the DOE complex to see what had been done in relation to closure actions. Mr. Rimando stated that he would give a brief overview of DOE's release sites, look at the Environmental Management Program burial site perspectives and tritium-contaminated plume management strategies. Mr. Rimando limited his review to the burial site perspectives and tritium-contaminated plumes because of the great number of total sites.

Mr. Rimando reviewed the definition of long-term stewardship and pointed out the DOE program offices that oversee long-term stewardship. There are 113 geographic sites (such as the Savannah River Site) of which 65 sites have been closed, 48 still require assessment and/or remediation.

In closing an Environmental Restoration (ER) release site (which these notes shall call "units" such as the burial ground), there are two phases, the assessment phase and the remediation/completion phase. In the assessment phase, they determine the size of the problem through investigation and characterization. In the remediation/ completion phase, they do field remediation or determine no action is required.

There are 9,700 ER release units of which 3,195 are complete. 1,074 units are scheduled to be completed by fiscal year (FY) 2000. At SRS there are 515 ER units (waste units/ operable units) of which 238 are in the assessment phase. In the ER unit remediation/ completion phase, there are 4,124 complete with 366 scheduled for completion by FY00. At SRS there are 277 of the 515 in the remediation/completion phase.

Mr. Rimando stated there are hundreds of ER units across the DOE complex that have good potential for leaving waste or residual contaminants on-site with caretaker requirements. Mr. Rimando reviewed over 200 ER units. He reviewed the former Utilized Site Remedial Action Program (FUSRAP) units as well as the Uranium Mill Tailings Remedial Action (UMTRA) units, with 24 and 25 units being closed respectively. There are several UMTRA units yet to be closed. The remaining units are under various closure and post-closure authorities such as: DOE Orders, US Nuclear Regulatory Commission (NRC) licenses, Resource Conservation and Recovery Act (RCRA) permit closures and/or corrective action program closures, Comprehensive Environmental Response, Compensation and Liability (CERCLA) remedial action program and/or removal action program and the Multi-Party/Multi-Agency Agreements.

Mr. Rimando reviewed the typical FUSRAP and UMTRA closures. Basically the UMTRA closures consider it more cost effective to keep the contaminated material where it is. The caps are considered to limit radon exposure. UMTRA was also the first site to look at the caps as barriers. There are no FUSRAP closures comparable to the Old Burial Ground.

He then reviewed the units with transuranic-contaminated material. Some detail was given on the following DOE sites:

- **Idaho National Engineering and Environmental Laboratory, Idaho**
- **Los Alamos National Laboratory, New Mexico**
- **Oak Ridge Reservation, Tennessee**
- **Nevada Test Site**
- **Savannah River Site, South Carolina**
- **Hanford Site, Washington**
- **Waste Isolation Pilot Plant, New Mexico**
    - **Mr. Rimando commented that this was the first facility to look comprehensively at passive institutional controls. The emphasis is to communicate to future generations that there is something buried in this location that shouldn't be dug up.**

Commercial burial sites mentioned with transuranic-contaminated materials were:

- **Sheffield, Illinois**
- **Maxey Flats, Kentucky**
- **Beatty, Nevada**
- **West Valley, New York**
- **Barnwell Low-Level Radioactive Waste Disposal Facility, South Carolina**
- **Richland, Washington**

Some detail was given on DOE burial units with radioactive materials. The sites were:

- **Lawrence Livermore National Laboratory, California**
- **Idaho National Engineering and Environmental Laboratory, Idaho**
- **Argonne National Laboratory – East, Illinois**
- **Plot M, Palos Forest Preserve, Illinois**
- **Paducah Gaseous Diffusion Plant, Kentucky**

- **Weldon Spring Site Remedial Action Project, Missouri**
- **Nevada Test Site, Nevada**
- **Sandia National Laboratory, New Mexico**
- **Brookhaven National Laboratory, New York**
- **West Valley Demonstration Project, New York**
- **Fernald Environmental Management Project, Ohio**
- **Portsmouth Gaseous Diffusion Plant, Ohio**
- **Oak Ridge Reservation, Tennessee**
- **Hanford Site, Washington**

Mr. Rimando stated there were twenty-two (22) tritium-contaminated groundwater plumes managed by monitored natural attenuation (MNA) that included radioactive decay and long-term hydrologic monitoring. Mr. Rimando cautioned that MNA, for the purposes of his presentation, was a technological component of the management strategy and not necessarily the approved remedial action. He stated that there are plumes that incorporate the features of radioactive decay and hydrologic monitoring without specifically MNA. There are other variations of management practice, which include MNA such as pump-treat-reinject, with restricted access, with phytoremediation, with containment. Surface water management with phytoremediation manages one plume. Several other plumes are pending a decision. There is no active remediation of tritium plumes.

Twenty-two plumes managed by MNA include:

- **Underground nuclear denotation and test sites (Ten units)**
- **Energy Technology Engineering Center, California**
- **Laboratory for Energy and Health Related Research, California**
- **Lawrence Berkley National Laboratory, California**
- **Lawrence Livermore National Laboratory's Site 300, California**
- **Burke County Aquifer, Georgia (Public) (Thought to be precipitation fallout from Savannah River Site, South Carolina)**
- **Sheffield LLW Site, Illinois (Commercial)**
- **Maxey Flats, Kentucky (Commercial)**
- **Los Alamos National Laboratory, New Mexico**
- **Mound Plant, Ohio**
- **Three Mile Island, Pennsylvania (Commercial)**
- **Barnwell Low-Level Radioactive Waste Disposal Facility, South Carolina**
- **Oak Ridge Y-12, Tennessee**

Four plumes managed by MNA with pump-treat-reinject

- **Brookhaven National Laboratory, New York**
- **Lawrence Livermore National Laboratory's Main Site, California**
- **Savannah River Site, South Carolina – F-Area Seepage Basins Plume**
- **Savannah River Site, South Carolina – H-Area Seepage Basins Plume**

One plume managed by MNA with restricted access

- **Idaho National Engineering Environmental Laboratory, Idaho**

One plume managed by MNA with phytoremediation

- **Argonne National Laboratory, Illinois**

One plume managed by surface water management with phytoremediation

- **Savannah River Site, South Carolina (RCRA remediation for the Southwest plume of the ORWBG)**

Two plumes managed with MNA with containment

- **University of North Carolina Mason Farm (Public)**
- **Oak Ridge national Laboratory, Tennessee**

Decision pending on other tritium plumes:

- **Hanford Site, Washington**

- **Savannah River Site, South Carolina**

Changing the subject to discussions DOE has had with the regulators, Mr. Rimando stated that the action being considered for the ORWBG closure and post-closure consists of the following:

- **Maintain engineered rainwater infiltration controls**
- **Provide structural stability of 22 old solvent tanks to preclude collapse and subsequent damage to cover/cap system**
- **Maintain existing groundwater monitoring program (RCRA Part B Permit)**
- **Continue groundwater corrective action program (RCRA Part B Permit)**
- **Continue active access and land-use controls to prevent access to buried and residual hazards**
- **Communicate the presence of persistent hazards**
- **Burial Ground Complex Record of Decision will integrate final closure of ORWBG**

Mr. Rimando stated that SRS and SCDHEC agreed to the RCRA Part B Permit items above. The site is committed to groundwater monitoring until the maximum contaminate level (MCL) of the plume meets the drinking water standards.

Mr. Poe requested the curie content of the tritium and transuranic waste inventories at the various units. Mr. Rimando stated that he had the information and would forward it to the Focus Group. In addition, Mr. Rimando agreed to supply a list of his references as well as his notes used at the meeting.

Mr. Poe thanked Mr. Rimando for the report and complemented him on the amount of information and quality of the presentation.

<u>Evaluation Methods to Determine Effectiveness of Interim Action:</u>
Gerald Blount, BSRI, gave a status on the plans to be used to effectively monitor the tritium reduction in the southwest (SW) plume using irrigation as the interim action. He stated that background or the tritium levels before the dam was in place were obtained to know the starting point. A control point will also be used to verify there are no natural occurring changes versus changes from the irrigation system. At this time, the location of the control point has not been selected.

For the monitoring of the interim action, there are two components, application of the tritiated water on the trees or evapotranspiration and the groundwater. The evapotranspiration will be the hardest element to measure. The water vapor will be collected in a weep tube and monitored. The

water vapor loss is expected to be about 75 to 80%. For measuring the vadose zone, the factors below the dam will be measured and subtracted from the factors above the dam to obtain the results.

It was noted that the dam has been built, is closed and is being filled up with water. With the resulting loss of water being fed to the creek, preliminary data indicates there has been a 50% reduction of tritium to the creek. The capacity of the irrigation system is approximately 30 gallons per minute. The recharge of the water to the dam is about 25 to 30 gallons per minute.

The data obtained from the monitoring will be reported in the Corrective Action Report as well as the Environmental Report. The Focus Group requested copies of the Corrective Action Report when it is transmitted to the regulators.

<u>Section Status of the Draft Final Report:</u>
Lee Poe reviewed the status of the sections of the draft Final Report. He stated his concern that the drafts of the appendix sections were not being completed on schedule. There is also a hold up in obtaining the data required to complete sections D and E. Mr. Poe asked for suggestions on obtaining the data. He will continue to follow up on this item. For section F to be completed by Bill McDonell, Ed McNamee will provide that data next week. Mr. Poe stated he would have section G completed by January 1. Bill Willoughby said he would work on completing section H once Rod Rimando sent him the information.

For the main sections of the report, the responsibility to complete section 9 was incorrectly reported. Mr. Willoughby is responsible for that section instead of Mr. McDonell. Bill Lawless stated that he would attempt to have section 10 completed by January 1. It was stated that Mr. McDonell had completed a draft description of the ORWBG, which is section 3.

Mr. Poe stated that in considering the information that would be included in the report, there were several items that may come out as recommendations. They are as follows:

1. **After the solvent tanks buried in the Old Burial Ground are filled with grout, a cap should be placed over them. That cap should be the same as the cap that will be placed on the rest of the burial ground so that the whole area looks the same and there isn't a hole in the middle of the burial ground.**
2. **The number 1.4 inches/year should not be used as the erosion factor. If that factor is used, all the burial ground will be washed away in 5,000 years. A more reasonable erosion factor should be used. Mr. Willoughby said he would send some references on the Environmental Protection Agency (EPA) erosion rate.**
3. **If someone does build or digs into the burial ground, they will not receive an acute dose of radiation.**

<u>Adjourn:</u>
With no other comments, the meeting was adjourned.

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