SRS Citizen's Advisory Board

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Old Radioactive Waste Burial Ground Focus Group

Meeting Summary

September 27, 2000
Aiken Federal Building
Aiken, SC

The Consolidated Incineration Facility (CIF) Focus Group met on Wednesday, September 27 at 5 p.m., Aiken Federal Building, Aiken, SC. The purpose of the meeting was to hear an update on PUREX Treatment/ Pretreatment Technologies Currently Under Evaluation; an Overview of DOE Headquarters Projects Concerning Incineration; a review on CIF Resource Conservation and Recovery Act (RCRA) Permitting; and hear public comment. Attendance was as follows:

Focus Group Members	Stakeholders	DOE/Contractors
Wade Waters, CAB	Rick McLeod	Helen Belencan, DOE-HQ
William Lawrence, CAB	Paula Austin	Ray Hannah, DOE
Karen Patterson, CAB		Peter Hudson, BNFL
Perry Holcomb, CAB		Sonny Goldston, WSRC
Bill Willoughby, CAB	**Regulators**	Bill Maloney, WSRC
Murray Riley, CAB	None	Helen Villasor, WSRC
Ken Goad, CAB		
Mike French		
Doug Leader		
Lee Poe		
Bill Lawless		
Bill McDonell		

Wade Waters, Consolidated Incineration Facility (CIF) Focus Group Administrative Lead, welcomed those in attendance and asked for public comments. There were none.

PUREX Treatment/Pretreatment Technologies Currently Under Evaluation

Before proceeding with an update on the PUREX Treatment Technologies, Ray Hannah said that in response to the special notice in the August 29, 2000 issue of the *Commerce Business Daily*, 14 responses to the Request for Information (RFI) had been received. The RFI requested data and information on alternative technologies to incineration for mixed transuranic and alpha low-level waste.

Mr. Hannah said that both the responses and the results of the Creativity Committee have been reviewed and put through a core screening to determine if any of the suggested alternatives met the five criterion described in the core screening process. They are as follows:

1. Treatment processes are needed for both the organic and aqueous phases of the legacy PUREX waste.
2. Secondary waste generated from PUREX treatment must comply with RCRA disposal requirements, and the radioactive constituents must meet the appropriate Waste Acceptance Criteria (WAC) for disposal.
3. The lifecycle treatment cost must be less than the combined re-start and operational cost to treat the waste in CIF.
4. The alternative option must provide for treatment of at least 16,000 gallons of legacy waste by the end of FY09.
5. The alternative process is a mature technology that can be demonstrated as a potential solution for PUREX waste treatment by mid-FY02.

Mr. Hannah mentioned that the screening process is in its early stage; however, the following technologies currently under evaluation met the established criteria:

- Ion Exchange (incorporates spent resin in a waste form matrix)
- Sodium Permanganate Oxidation (drives contaminants to aqueous phase then captures through ion exchange with cleaned organics undergoing further treatment)
- Tank Farm (send to Tank 50 via the Effluent Treatment Facility or send directly to the Tank Farm)
- Bioreactor (rad tolerant bugs to break down tributyl phosphate (TBP) to dibutyl phosphate (DPB) so that contaminants partition to the aqueous phase; couple with ion exchange for aqueous and further treatment for cleaner organic)
- PUREX Washing (follow up on studies performed in the 1980s regarding alumina column to wash contaminants out of the solvent)
- Optimization of CIF (reducing dilution ratio to increase PUREX throughput to the plant)
- Mobile Incinerator (issue an RFI for mobile thermal treatment)
- Stabilization (solidify and stabilize waste in a form acceptable to a disposal facility which will allow disposal as low-level waste (LLW))
- Plasma Enhanced Melter (high temperature process producing glass waste form (DC Arc Method) which can be dispositioned as LLW)
- Gasification/Vitrification (thermal treatment producing glass waste form)
- Pyrolysis/Steam Reforming Thermal Process (vaporize aqueous, destroys organics, volatilizes metals; package waste residue)
- Chemical Oxidation, Precipitation, Filtration Trains (destroy organics, precipitate and filter contaminants; solidify secondary waste residue)
- Industrial Boiler (incineration for energy recovery)

Lee Poe pointed out that with respect to some of the listed technologies, it is his opinion that the RFIs are not reaching the appropriate audience. Mr. Poe said that several technologies related to commercial reactors are available and since appropriate responses are not being received, apparently something is wrong with the process. Mr. Hannah noted that he, too, wondered if the responders shared the same concern as Bill Lawless, that if DOE was moving away from incineration, it might be the reason why many companies did not respond. Mr. Poe suggested that SRS divide the RFI into two phases, i.e., organic and aqueous since it is difficult to compare the different kinds of technologies for both.

At this point in the meeting, Bill Willoughby mentioned that copies of a report, "West Valley Demonstration Project: Implementation of the Kerosene Mitigation Plan" had been received from West Valley and were available to the attendees. In the report, Mr. Willoughby said that the results of a detailed investigation to determine the location and source of the kerosene mitigation; the remediation plan to mitigate the migration, and the actions taken to stabilize the kerosene are discussed in the West Valley report.

Mr. Hannah pointed out that the Stabilization technology (solidifying and stabilizing waste in an acceptable form) had been demonstrated at SRS in August and noted that additional demonstrations will be scheduled. However, Mr. Hannah said they are working to better define and understand processes

such as PUREX Washing with subject matter experts. Citing a historical perspective, Perry Holcomb said it would be difficult to wash radioactivity out of the PUREX. Mr. Holcomb mentioned that the PUREX contained "dobads" that are connected to zirconium fission products. Historically, SRS began a campaign to move toward cleaner, more expensive kerosene, then went to ultrasene/oleum to wash kerosene to rid it of the dobads. Mr. Holcomb cautioned that depending upon the objective, i.e., to reduce concentrations, SRS should carefully consider the washing process. Mr. Hannah thanked Mr. Holcomb for the historical perspective and noted that the information will be useful to the SRS Alternatives Study Team.

Bill Lawless asked if variability in constituents also holds true with legacy waste. Mr. Lawless referred to the West Valley report that identified the best process used at the facility was activated charcoal to pull out contaminants, with the exception of I-129. Perry Holcomb pointed out that the TBP in West Valley's organics was different than SRS. Rick McLeod asked if the listed technologies are realistic and what is the cost of the technologies versus incineration. Mr. McLeod asked if there was enough time to perform any of the technologies and asked if any reports had been prepared to establish this type of information. In response to Mr. McLeod's questions, Peter Hudson said that the five criteria had been applied to each of the listed technologies and each one had passed all five. Mr. Hudson said that the next phase is a grading criterion that would be applied to a short list toward the end of October. Mr. Hudson said that a matrix could be shared with the group at the next Focus Group meeting.

Wade Waters thanked Mr. Hannah for his presentation and complemented the SRS Alternative Study Team for the significant progress it has made.

Overview of DOE Headquarters Projects Concerning Incineration

Mr. Waters welcomed Helen Belencan of DOE-HQ and extended his appreciation for Ms. Belencan's acceptance of the Focus Group's invitation to visit SRS and share the DOE-HQ perspective of the team study Ms. Belencan is leading.

Ms. Belencan opened her presentation by noting it was her pleasure to also attend the SRS CAB meeting in Barnwell, SC on September 26, 2000 and hear some of the discussions, especially those related to CIF. Ms. Belencan added that her objective at this meeting was to describe the current on-going DOE-HQ efforts concerning use of DOE incineration systems while also discussing the different study groups. Recognizing the confusion on the different groups studying alternative technologies, Ms. Belencan outlined each of the studies including the following:

- Blue Ribbon Panel appointed by Secretary Richardson
- Environmental Management (EM) Study Group on Alternatives to DOE Incineration
- SRS Alternative Study Team

In reviewing the Blue Ribbon Panel, (BRP) Ms. Belencan said it had been formed in April 2000 as a result of a settlement agreement on the *Keep Yellowstone Nuclear Free* lawsuit, which concerned the proposed incinerator component of the Advanced Mixed Waste Treatment Project (AMWTP) at the Idaho Nuclear Engineering and Environmental Laboratory (INEEL). The group is a 50/50 split of scientists and lawyers. Ms. Belencan said that the settlement enabled DOE to proceed with construction of other AMWTP components while remaining in compliance with compliance agreement milestones.

In its charter, Ms. Belencan said the panel will evaluate whether alternative technologies could be implemented by DOE in time to comply with all legal requirements for treating waste, including those contained in the Settlement Agreement and Consent Order signed by the State of Idaho, DOE, and the Navy (commonly referred to at the Batt Agreement). In addition, the panel will consider issues raised by the public and evaluate and recommend new technology initiatives that DOE should pursue to establish alternatives to incineration. The panel also intends to help DOE meet the Secretary's commitment to deal with waste at all of its sites, in Idaho and across the country, and focus DOE efforts on developing the best possible treatment technologies. The panel's report is due to the Secretary by December 15, 2000.

Ms. Belencan noted that she would share any information with the Focus Group that her office receives regarding Blue Ribbon Panel reviews.

In response to a comment made by Rick McLeod that the Blue Ribbon Panel appeared to be set up for technologies across the complex, Ms. Belencan responded that initially it looked that way. However, DOE said that was not the case and instead the panel was being chartered to look at Idaho first so that the work would have value to other sites in the Complex.

In a discussion on the firmness of the December 15 date, Ms. Belencan said that it appeared to be definite. Ms. Belencan said that it is a guess, but since there are some available technologies, the panel would probably lean toward implementing a research and development plan rather than selecting a technology in its December 15 report. Lee Poe asked Ms. Belencan if she knew the Idaho commitment date. It is Mr. Poe's speculation that the Idaho date appears to be connected to the settlement agreement rather than the end of the current administration.

Ms. Belencan continued contrasting the different study groups by discussing the EM Study Group on Alternatives to DOE incinerators, which Ms. Belencan is leading. One of the major issues the group is studying is the availability of viable commercial-sector alternatives for waste streams currently targeted for DOE incinerators. Another topic includes the decision whether DOE should continue with current planning to close the Oak Ridge incinerator in 2003. However, Ms. Belencan added that cost was not one of the considerations under evaluation by her team.

Participants in the EM Study Group include federal and contractor staff from nine DOE field offices/sites and the Navy; DOE-EM-HQ – Office of Integration and Disposition; Idaho EM Integration; and Mixed Waste Focus Areas. Savannah River is a participant. Both the EM Study Group and the Blue Ribbon Panel are relying upon similar resources including the Cooley report, "Analysis of Treatment Systems for Mixed Low Level Waste". Carl Cooley is the lead DOE technical resource for the Blue Ribbon Panel. Ms. Belencan noted that the question before her Study Team involves DOE's three incinerators. These incinerators include CIF, which cannot treat offsite waste under its current permit conditions; Toxic Substance Control Act Incinerator (TSCAI) at Oak Ridge, which is slated to treat waste through fiscal year 2003; and the Waste Experimental Reduction Facility (WERF) at the INEEL, which would cost approximately $10M to upgrade to meet the Environmental Protection Agency's (EPA) Maximum Allowable Control Technologies (MACT) Standard. It was mentioned that WERF is the least robust of Doe's incinerators and has already submitted a notice to the Idaho State Regulators of its intent not to comply with MACT.

In the Study Group's preliminary analysis, results indicate there is an adequate need for incineration, which would justify operating TSCAI through the current planning baseline of 2003, as well as potential justification for extending the operational baseline of TSCAI to 2006. One of the major reasons for considering this extension is that the current schedule for treating polychlorinated biphenyl (PCB) waste from the Fernald site is tight and any disruption could be problematic. Other reasons include demonstrating commercial sector alternatives for PCB treatment and the remaining uncertainly concerning waste from closure sites.

Before concluding her presentation, Ms. Belencan assured the group that DOE-HQ was looking at all waste streams across the complex. Bill Lawless said that he wanted to be sure that DOE was not going to create more waste by pleasing environmentalists. It was also noted that the Inspector General's (IG) Report (DOE/IG-0453, dated October 1999) did not help from a technical perspective and only called more attention to the cost of incineration.

Ms. Belencan said it is her observation that each site appears to be making site-specific decisions based upon their own priorities that may or may not eventually affect the complex. However, Ms. Belencan added that Study Team results indicate DOE is not looking at building something else in place of incinerators. Lee Poe posed the question if DOE-HQ is considering risk, i.e., risk of an accidents,

damage, contained storage of materials, etc. in any of the studies. Mr. Poe also noted that funding should be reverted to incineration rather than spending it on Environmental Restoration activities that pose hardly any or no risk at all. Peter Hudson added that some funding has been directed to the PUREX studies that are underway.

In closing, Ms. Belencan said the Study Group has determined that the majority of wastes can be treated by the commercial sector. Wastes for which commercial alternatives were not identified include waste with high levels of mercury contamination; classified waste; sodium-uranium waste; high organic content sludges; and PUREX solvents. Through the Mixed Waste Focus Area, the Study Team has deferred to the on-going evaluations at SRS to more effectively evaluate alternatives for the PUREX solvents.

In clarifying the question that DOE appears to be moving away from incineration, Ms. Belencan said the CIF Focus Group was being provided this briefing as a "heads up" on the results of the Study Team's analysis. Ms. Belencan said this same brief will be presented to Carolyn Huntoon in the middle of October, and will include a recommendation to carefully assess the situation before proceeding with plans to close TSCAI in 2003. In fact, Ms. Belencan added that there is always uncertainty as DOE moves closer to closure. For example, Ms. Belencan called out the Portsmouth facility where there are significant quantities of PCBs, which may need treatment at a facility such as the TSCAI.

Ms. Belencan thanked the Focus Group for the opportunity to present her Study Team's preliminary results and also for allowing her to explain how the Blue Ribbon Panel and the Study Group are alike and how they are different. In addition, Ms. Belencan said that she would be happy to come back early next year and provide an update on incineration alternatives and the results of the Blue Ribbon Panel study.

CIF RCRA Permitting

In his presentation, Bill Maloney clarified the following CIF Focus Group questions on CIF RCRA permitting:

- When does the CIF Permit expire?
- Can South Carolina Department of Health and Environmental Control (SCDHEC) delay for six months removing the CIF operating language from the Permit?
- Is it a problem if CIF suspends operation before the Permit is modified?
- What activities are being suspended by the Temporary Authorization (TA)?
- Will the public be provided with the opportunity to comment on the changes to the Permit before it becomes final?

Providing background on the Permit expiration, Mr. Maloney said by RCRA definition, all of SRS is one facility; therefore, SRS has only one EPA Identification Number, Part A/B Permit Application and Permit.

The SRS RCRA Permit was first issued on September 30, 1987 for five years and was to expire on September 30, 1992. The Permit included the M-Area Hazardous Waste Management Facility (HWMF) (seepage basin) and the HWMF. On September 30, 1992, SCDHEC added the CIF and the F/H Area HWMF (seepage basins). Mr. Maloney said that the Permit was to expire on September 30, 1992; therefore, the Permit language for CIF was first issued AND expired all on the same date: September 30, 1992. In fact, the Permit language for the entire permitted unit was to expire September 30, 1992. One of the conditions of the Permit stated that the facility may continue an activity allowed by the Permit beyond the expiration date if a facility submits a Permit Renewal Application at least 180 days prior to Permit expiration. SRS submitted its 1992 RCRA Part B Permit Renewal Application on March 26, 1992. Therefore, the permitted units continued to operate through 1993, 1994, and much of 1995 in accordance with the expired 1987 RCRA Permit. SCDHEC issued the SRS 1995 RCRA Renewal Permit on September 1995. The Permit was issued for five years and was to expire on October 5, 2000. However, CIF was not added to the Renewal Permit because of the EPA Incineration Moratorium (issued under the Clinton Administration) and impending MACT Standard changes. CIF continued to operate per the

expired 1987 RCRA Permit. This gave SRS two RCRA Permits, the 1987 RCRA Permit (CIF) and the 1995 RCRA Renewal Permit for all other permitted units.

In response to the question when the CIF Permit expires, Mr. Maloney said it expired on September 30, 1992; however, CIF was allowed to continue operating beyond the expiration date. As for the six-month permit extension, Mr. Maloney mentioned that CIF stopped receiving waste on April 10, 2000 with the hope that more economical alternatives to CIF could be found. A small possibility that CIF would receive additional waste exists; however, regulations would require CIF to begin closure by May 10, 2000 unless SCDHEC grants an extension. CIF would then be given six months to complete closure and at the completion of closure, the CIF RCRA Permit would terminate.

Mr. Maloney said SCDHEC has agreed to an extension to the closure requirement and in return, SCDHEC intends to remove the operating language from the RCRA Permit. SCDHEC stated it would anticipate modifying the Permit in January 2001, which is several months longer than the November 10, 2000 deadline requirement had the regulators not granted the closure extension. Therefore, CIF was granted a significant extension to final RCRA closure and a several month extension to modify the RCRA Permit to remove the operating language. If the regulators were to extend the RCRA Permit for an additional six months from now, as the Focus Group was thinking of recommending, then SCDHEC would modify the Permit in March 2001. This is only two months longer than the regulator's current schedule for the Permit modification. No new information would become available in the two months that would help SRS decide if CIF should resume operation or not. It is Mr. Maloney's observation that nothing would be gained from delaying the Permit modification until March 2001.

Mr. Maloney said that SRS is required to follow existing RCRA Permit conditions until the Permit is modified. The Permit has numerous conditions that are irrelevant to CIF in the suspended mode, i.e., being manned 24 hours a day and meeting most of the inspection requirements. The regulators indicated it might be possible to use a Temporary Authorization (TA) to temporarily supercede the RCRA Permit conditions with the approved Suspension Plan. The TA allows a facility to perform an activity without a permit for up to 180 days and allows important activities to begin prior to permitting. To qualify, Mr. Maloney said the facility must meet one of five criteria:

- Timely implementation of closure/corrective action
- Allow treatment/storage to meet land disposal restrictions (LDR) requirements
- Prevent disruption of waste management activities
- Respond to sudden changes in type/quantity of waste
- Other changes to protect human health/environment

In response to a question if SRS could request a TA to burn half of the solvent that exists today, Mr. Maloney said that if SRS could meet any one of the five criteria they would have to convince the regulators that it can be completed in 180 days.

The TA was approved on September 11, 2000 and beginning October 1, CIF will begin to follow the TA rather than the 1987 RCRA Permit conditions. Mr. Maloney said the benefits of the TA include the elimination of having to perform unnecessary tasks, it saves money, and allows CIF to maintain full compliance with RCRA.

Speaking in terms of the opportunity to provide public comment, Mr. Maloney indicated that SCDHEC intends to solicit public comment on the Draft Permit Modification prior to issuing it final. Start of the comment period began September 27, 2000 and will run for 45 days. Bill Lawless said the Focus Group is currently evaluating the permit modification and associated background documents and there is a potential that the SRS CAB will develop a recommendation to SCDHEC concerning the permit modification. The next meeting of the SRS CAB will be November 14, 2000, at which time the CAB will vote on new recommendations. The current public comment period, which ends November 13, 2000, will not allow the full CAB the opportunity to evaluate and approve a potential recommendation. Therefore, it

was determined by the Focus Group that a letter be sent to SCDHEC requesting an extension of the public comment period through November 17, 2000.

Mr. Maloney concluded his presentation by discussing other opportunities for public participation in the permit process. However, Mr. Maloney suggested that if a hearing is requested, oral comments typically have no more weight than those provided in writing. Mr. Maloney also suggested that in writing the letter to SCDHEC, the Focus Group should be sure to include appropriate language and justification such as closure and alternatives funding.

One of the Focus Group's major concerns is timing and the closure date, which would begin April 1, 2002. In order to compensate for the public comment schedule, it was suggested that first a letter be sent to SCDHEC requesting an extension on the initial 45-day public comment period. The next approach is to include the potential CAB recommendation in the Responsiveness Summary. Lastly, it was suggested that each member of the Focus Group and members of the public in attendance write a letter with the Focus Group's comments and each person mail a copy of the letter to SCDHEC.

The following future agenda items were discussed:

Draft October Topics
Update on CAB Recommendation
PUREX Legacy Waste
R&D Associated with Alternatives
Life-cycle Cost of Operational Strategies Including Alternatives Closure Costs

Draft November Topics
Status of Extension Letter
Budgeting Process
Potential NRDC Presentation

Public Comment

Mr. Waters asked if there was any other public comment. With there being none, Mr. Waters adjourned the meeting after announcing that the next meeting will be held October 30, 2000 and the November meeting will be held November 28, 2000.

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