



## **SRS Citizens Advisory Board**

### **Consolidated Incineration Facility Focus Group**

#### **Meeting Summary**

May 7, 2001  
Aiken Federal Building  
Aiken, SC

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The Consolidated Incineration Facility (CIF) Focus Group met on Monday, May 7, 2001, 5:00 p.m., at the Aiken Federal Building, Aiken, SC. Attendance was as follows:

#### **FG Members**

Wade Waters, CAB  
Murray Riley, CAB  
Perry Holcomb, CAB  
Jean Sulc, CAB  
Karen Patterson, CAB  
Bill Willoughby, CAB  
Ken Goad, CAB  
Bill McDonell  
Lee Poe  
Bill Lawless  
Mike French  
Ray Hannah  
Sonny Goldston  
Peter Hudson  
Helen Villasor

#### **Stakeholders**

Rick McLeod, CAB Tech.  
Advisor  
John Hewson

#### **DOE/Contractors**

George Mishra, DOE  
Charlie Anderson, DOE  
Ed Stevens, SRTC  
Marshall Looper, WSRC  
Michael Chandler, WSRC  
Steve Pye, WSRC

#### **Regulators**

None

Wade Waters opened the meeting at 5:00 p.m., by inviting introductions and thanking everyone for coming. Sonny Goldston introduced the Solid Waste program personnel who would be supporting the meeting.

Mr. Waters then gave a brief report on the recent alternatives to incineration conference in Salt Lake City, Utah that he attended as a member of the Interstate Technology Regulatory Cooperation (ITRC). In his report, Mr. Waters stated that he had participated in several workshops, including one where the new Alternative Technologies to Incineration Committee (ATIC) was discussed. Mr. Waters said that some of the discussion focused on the makeup of the membership (i.e., technical versus stakeholder), as well as the identification of the group's roles and responsibilities. In another workshop, Mr. Waters said that he had an opportunity to present some of the concerns of the Savannah River Site (SRS) Consolidated Incineration Facility (CIF) Focus Group, including SRS's involvement in the investigation of an alternative technology to incineration and some of the related costs. For example, Mr. Waters said that he learned

that the spending for Fiscal Year 2001 will total approximately \$425K. In the funding breakdown, Mr. Waters said that he has learned that \$175K will be spent on stabilization, \$150K on pretreatment, \$50K for the alternative option study and \$50K for program support. Mr. Waters concluded his report by noting that it would be a better use of resources if the CIF Focus Group moved to holding meetings bi-monthly instead of monthly. However, he added that if meetings are required because of regulatory commitment dates, etc., they would be scheduled accordingly.

#### **Public Comments:**

None.

#### **CIF Suspension Activities Update:**

As a new feature to keep Focus Group members informed of ongoing suspension activities, Ray Hannah provided a brief update of CIF's suspension mode to date. Mr. Hannah said that the facility is in an official suspension of operations posture since November 2000. In April 2000, the facility ceased receiving waste and personnel cleaned the facility to the requirements that were determined by the South Carolina Department of Health and Environmental Control (SCDHEC). Mr. Hannah noted that all of the cleanup work was accomplished within budget. From April until February, the facility was under a Temporary Authorization (TA), which meant that the facility was still legally permitted; however activities had been scaled back. In February 2001, SRS received the permit modification. Mr. Hannah said that SRS was preparing to meet with SCDHEC within the week to present a more detailed update of the PUREX study, along with proposing a date to discuss CIF closure. Mr. Waters asked that Mr. Hannah provide an update on the regulatory status once SRS has received a definite answer from the regulators. Mr. Waters also suggested that it would be helpful if SCDHEC came back to make a presentation to the Focus Group on its posture regarding CIF. Rick McLeod reminded the group that a closure plan is required by October 1, 2001 if SRS intends to change the existing permit.

#### **PUREX Alternative Treatment: Review of Alternatives:**

Peter Hudson opened his presentation by noting that perhaps SRS had placed too much emphasis on just one of the alternative technologies in earlier meetings. Mr. Hudson said he wanted to correct any misconception that any single option had been identified and instead provide a detailed review of the complete list that has been captured since the decision was made to place CIF in a suspension mode. Mr. Hudson explained that the complete list of technologies had been identified from sources such as the SRS Creativity Committee at a meeting in June 2000; the Requests for Information (RFIs) published in *Commerce Business Daily*; the PUREX Solvent Task Team; the CIF Focus Group; and the Savannah River Technology Center (SRTC).

Mr. Hudson provided the full list prior to coarse screening as follows:

#### **Treatment Technology**

Radiolysis (electron beam, accelerator)  
Radioactive scrap metal recycle  
Hybrid microwave

#### **SRS Future technologies/Processes**

- Am/Cm
- Melt and Dilute
- MOX

- Pit disassembly and Conversion
- Plutonium Immobilization

#### Pretreatment for Radionuclide Removal

- Ion Exchange
- Sodium Permanganate Oxidation
- Biotechnology
- Strontium/MnO<sub>4</sub>/EDTA
- Chemical Washing
- Alumina
- Colloidal filtration

#### CIF Optimized Processing

- Hazard Category 3 Upgrade
- Incinerate Offsite waste (SC or DOE/DOD)

#### High Level Waste Tank Farm (aqueous phase only)

Bypass ETF, Direct to Saltstone

Tank 50 Treatment Vendor

Small Liquids Incinerator (mobile unit)

Low Temperature Furnace (plasma torch, torrodial incinerator)

Transportable Vitrification System (Oak Ridge)

TRU Alternative Oxidation Technology (AOT)

Alkaline Hydrolysis (BNFL)

#### RFI # 1 Responses (Onsite/Offsite Commercial)

- Plasma Enhanced Melter (Technical Resources International, Inc.)
- Direct Chemical Oxidation (M&EG)
- Pyrolysis and Steam Reforming (Studsvik)
- Industrial Boiler (DSSI)
- Gasification/Vitrification (ATG)
- Steam Reforming/Evaporation (Duratek)
- Diluent/TBP recovery (COGEMA)
- Electrochemical Oxidation (AEA Technology)
- Super Critical Water Oxidation (General Atomics)
- Bilger Dispersed Sodium (EarthFax Engineering, Inc.)
- Catalyzed Wet Chemical Oxidation (Delphi)
- Pyrolysis Process (NUKEM Nuclear)
- Molten Aluminum (Clean Technologies)
- Plasma Pyrolysis (Plasma Pyrolysis Systems, Inc.)

#### RFI #2 Responses (Onsite Commercial)

- Steam Reforming (GTS Duratek)
- CMS Thermal Oxidizer (Vortex Corporation)
- Fluidized Bed Incinerator (Arrakis, Inc.)
- Rotary Hearth Furnace (ARI Technologies, Inc.)
- Liquid Incinerator (Williams Environmental)
- Liquid Incinerator (IT Corporation)
- Hyperbaric Sublimation (RACE, Inc.)

- Molten Salt Oxidation (ATG, Inc.)
- Performance Development Company (Incinerator/CIF)

#### Highly Enriched Uranium (HEU) Process Option

- Treatment/Disposal technology for HEU program

#### Microbial Catalyst Biodegradation

- Biodegrade organic PUREX in membrane bioreactor
- Remove radionuclides from aqueous permeate using ion exchange

Mr. Hudson then provided a block diagram review of the downselect options:

- Offsite Commercial Treatment
- Waste Stabilization
- Saltstone
- Effluent Treatment Facility (no radionuclide pretreatment)
- Effluent Treatment Facility (with radionuclide pretreatment)
- Tank 47/HLW Evaporator
- New Canyon Stabilization Process

In closing his presentation, Mr. Hudson reviewed two other treatment methods that did not make the short list; however, he noted that they might be of interest to the Focus Group. The first was Molten Aluminum, which Mr. Hudson said that SRS has been looking at to destroy Transuranic (TRU) solid wastes. The other was the Silver Mediated Electrochemical Oxidation Process.

In response to a question raised concerning the acceptance criteria for those options that made the short list, Mr. Hudson said that acceptance criteria had not been changed and still included technical maturity, lifecycle cost, process availability, operational flexibility and stakeholder acceptance. Mr. Hudson also responded to a question on secondary waste by noting that at this time no information is available; however, Mr. Hudson did say that the amount of secondary waste would probably be small.

#### **Draft Motion Discussion:**

The Focus Group began its review of the first draft motion, "Consolidated Incineration Facility (CIF) Closure Schedule Alternatives". In the draft motion, the recommendations are for the regulators to allow CIF to remain in suspension until an alternative treatment technology is operational and all of the legacy waste treated; SCDHEC not impose a date of closure notification until all the legacy waste has been treated; and to allow SRS to extend the closure schedule beyond 180 days. It was agreed by the Focus Group that some modifications need to be made to the draft motion; therefore each person was asked to provide his or her comments to Rick McLeod, the CAB's technical advisor. The objective is to have the draft motion ready for discussion again before the CAB's next meeting date of July 24, 2001.

The second draft motion, "PUREX Recovery Alternatives", which Bill Lawless said was only a working draft, explores the possibility of reducing the solvent recovery process of non-Legacy PUREX. Another recommendation of this draft motion was to provide the CAB with a cost-benefit analysis of solvent recovery in the canyons versus ultimate treatment options. It was agreed that until more information is available as to whether the solvent retains hazardous metals, or if continued use leads to further degradation and retainment of hazardous metals, the motion should be tabled. Therefore, it was suggested that a presentation by the Nuclear Materials Stabilization and Storage program to the Nuclear Materials Committee be made in the fall, and the Waste Management Committee work with the Nuclear Materials Committee on the draft motion then. Jean Sulc asked that in the interim, it would be helpful if

the Focus Group were provided with any available reference materials on the issue so that they could be studied. Mike Chandler said that he would review some laboratory information that might be of help and if possible, provide a copy to Helen Villasor for distribution to the Focus Group.

**Public Comment:**

None.

Wade Waters adjourned the meeting at 7:55 p.m.

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