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ADVOCATE

Proposed Plan to Clean Up Bear Creek Burial Grounds Due this Fall

It's hard to comprehend just how much 40 million pounds of uranium is. Harder still is to imagine that much uranium mixed with a witch's brew of industrial wastes and unstable materials, and buried just a couple of miles from downtown Oak Ridge.

But it's not an abstract problem for academics to solve. It's a real issue that the Department of Energy (DOE), its regulators, and the public must grapple with this fall.

The Bear Creek Burial Grounds (BCBG) was a waste repository for almost 40 years, taking a variety of hazardous and radioactive waste from DOE operations at the Oak Ridge Reservation and other sources. The time has arrived at last for a decision on how to address the site.

Most of the waste is uranium metal turnings, other finely crushed material, and industrial waste contaminated with uranium. But also mixed in with the uranium is a variety of solid and liquid industrial wastes, acids, bases, waste oils, coolants, and solvents. BCBG also has its share of thorium, technetium, beryllium, metals, and asbestos.

Parts of BCBG were closed under Resource Conservation and Recovery Act (RCRA) actions from 1983 to 1995, but other areas were not subject to RCRA closure requirements because they did not receive RCRA-regulated wastes. However, all of these units still must be evaluated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

A remedial investigation/feasibility study (RI/FS) for the Bear Creek Valley watershed, which includes BCBG, was completed and approved in 1997. Following completion of the RI/FS, a

decision was made to conduct remediation of the valley using a phased approach. A proposed plan and record of decision were prepared and issued in 2000 for Phase 1 remedial actions in Bear Creek Valley.

The remedy selected in the Phase 1 record of decision primarily addressed two source areas considered to be the most significant contributors to contamination in Bear Creek Valley: the Boneyard/Burnyard and the S-3 Site. The Phase 1 remedial actions at the Boneyard/Burnyard were completed in 2002; remedial actions for the S-3 Site have not yet been implemented.

DOE is now preparing a focused feasibility study to evaluate alternatives for remediation of BCBG. Ten alternatives (plus no-action) were identified for screening in the original Bear Creek Valley RI/FS, and five were selected for detailed evaluation. In the final revision of the FS, two additional sub-alternatives were added, for an effective total of seven action alternatives. While these seven alternatives were designed to address remedial actions for Bear Creek Valley at the watershed level, only those components of each alternative that are pertinent to the BCBG will be considered in the new focused feasibility study.

"When we started this focused effort, the core team agreed that we didn't need to go back to all the original alternatives," said Jason Darby, DOE program manager for BCBG. "We would just look at the ones that passed the initial screening. Everyone agreed that the original selections were good choices. Technology hasn't changed, and there is nothing new in the burial grounds to consider. So we just picked up where

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The Advocate is a publication of the Oak Ridge Site Specific Advisory Board (ORSSAB)—an independent, nonpartisan, volunteer citizens panel providing recommendations and advice to DOE's Environmental Management Program

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Bear Creek Burial Grounds

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we left off. It's a focused study in the sense that the earlier work looked at the entire Bear Creek Valley watershed. This effort will just look at the burial grounds. We have a milestone for the focused feasibility study and the proposed plan to be submitted by September 2008."

The proposed plan will identify a preferred alternative and recommend that it be used to remediate BCBG.

and the state takes the position that there should be assured funding for the area."

Speaking at the April ORSSAB meeting, Owsley said input from the public and ORSSAB is important on this issue. "DOE's current validated lifecycle baseline does not appear to address any remedy other than closure in place for this material," he said. "As the community that will deal with this

A Kentucky congressman has introduced legislation directing DOE to re-enrich depleted uranium stored at Paducah, Ky., and Piketon, Ohio, and there are some discussions underway to reopen a large uranium mine in New Mexico.

So would it be worthwhile to mine the uranium?

"The recovery of the uranium for fuel will be looked at in the focused feasibility study," said Darby. "DOE headquarters has even asked for a position paper on it.

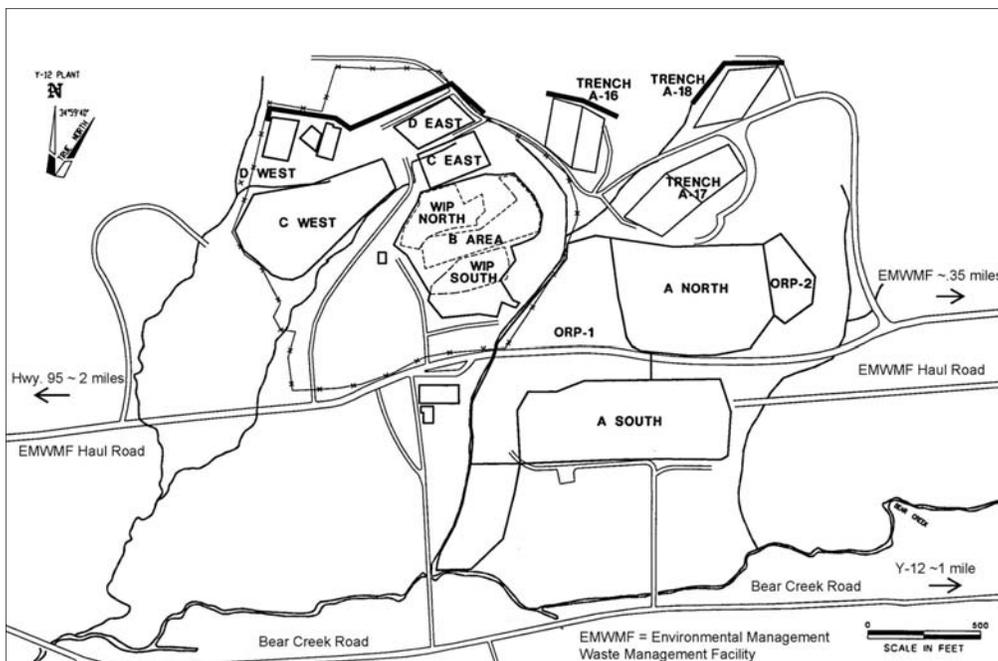
"But what we have here is in a very different form from what is stored at Paducah and Piketon," he said. "It's in the ground mixed with other hazardous wastes: cutting and cooling oils, solvents, and reactive and unstable materials. So it would have to be extracted from all of that. Then because it's a metal it would have to be acidified and fluorinated. So there is a lot of processing that would have to be done to get it in a form that could go through re-enrichment.

"We're going to look at it, but it seems unlikely at this point that it will be cost effective to mine it," said Darby.

What's next?

When DOE completes its first draft of the focused feasibility study and proposed plan it will be provided to the Environmental Protection Agency (EPA), TDEC, and ORSSAB for review. The documents will also be available for the public to examine at the DOE Information Center, 475 Oak Ridge Turnpike, Oak Ridge.

The regulators and the board will have 90 days to offer comments on the fea-



Map showing the various waste disposal areas that make up the Bear Creek Burial Grounds.

Some of the alternatives developed under the Bear Creek Valley Phase 1 record of decision involved leaving wastes in place at the BCBG. At about the same time the state of Tennessee instituted a policy that required ongoing financial assurance for long-term stewardship when final decisions will result in waste being left in place. "CERCLA requires that waste either be removed or managed in place," said John Owsley, director of the Tennessee Department of Environment and Conservation (TDEC) DOE Oversight Division. "If the waste is to be left in place in BCBG there would be a long-term stewardship consideration,

material, the state looks to the community and ORSSAB to determine if the amount of risk being left in place is reasonable." He said while it may be cheaper in the short-term to cap and leave waste in place, it is not cheaper in the long-term since assured funding for stewardship will have to be in place basically forever.

Does the uranium in BCBG have any value?

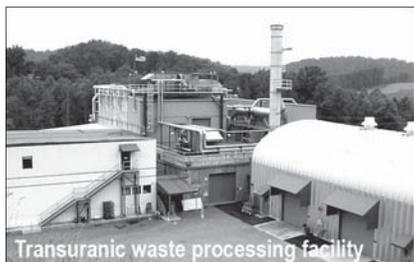
Some news stories have been printed and broadcast recently about the increased value of uranium—as much as 10 times over the last three years.

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Reservation Update

Processing of Remote-Handled TRU Waste Begins

Processing of the first cask of remote-handled transuranic waste (TRU) began May 22 at the TRU Waste Processing Center near Oak Ridge National Laboratory (ORNL). The plan is to process about five casks a month. Each cask holds about 1.6 cubic meters of waste.



Before any of the casks are shipped to the Waste Isolation Pilot Plant in New Mexico, a lengthy process of undergoing a readiness review and certifying the casks for shipment must be completed. The expectation is to begin shipping by the end of November.

The Waste Processing Center has been processing contact-handled waste, but none has been shipped yet. Shipment of contact-handled TRU is targeted for the end of September.

Uranium Removal Finished at Molten Salt Reactor

The last of the uranium-233 was removed from the Molten Salt Reactor on March 25. It's been a difficult job that has seen a number of stops and starts, problems, and solutions. The uranium was mixed with salts in the old reactor, which hasn't operated since the 1960s. DOE needed to separate the uranium from the salt so both can be disposed properly.

The uranium was separated from the salts and then transferred to sodium fluoride traps, which were sent to Building 3019 at ORNL for interim

storage. A final disposition path for the uranium is to be determined.

The remaining salts will be allowed to cool, and a determination for their disposition will be made later.

Inspector General Questions DOE's Uranium-233 Plan

DOE's Inspector General issued a report in early June saying DOE should reconsider its plans to dispose of uranium-233 stored at ORNL.

But Steve McCracken, DOE-Oak Ridge manager for Environmental Management, says he's working under Congressional direction to dispose of the uranium.

Until about a year ago DOE's Nuclear Energy Program had been extracting thorium from the uranium. The thorium was then used to produce isotopes for cancer treatments.

"Congress directed DOE to take over the project and dispose of the uranium," said McCracken at the June ORSSAB meeting. "Unless Congress redirects the disposal mandate, we're required to follow that direction. So we're proceeding with the design and procurement of equipment that would preclude thorium extraction. To change direction again would be somewhat expensive."

DOE Inspector General Gregory Freidman wrote that "...isotopes production from ORNL stocks alone could be used to treat about 6,000 patients annually."

A workshop is planned for fall, where representatives of the DOE Office of Science, the National Institutes of Health, and medical researchers will discuss the issue. Deputy Assistant Secretary of Energy Frank Marcinowski said those representatives

will make a recommendation to Congress on the issue.

TSCAI Heats Up Again

The Toxic Substances Control Act Incinerator (TSCAI) is operating again since being taken out of service in October 2007 for maintenance. During that time the kiln was re-bricked and the secondary combustion chamber and thermal relief valve support were repaired.

Operation resumed on April 26. A faulty kiln roller was discovered in mid-May, but liquid waste incineration was able to continue.

Plans call for the incinerator to operate through FY 2009 and then be shut down. The burn plan estimates about 3.3 million pounds of solid and liquid waste will be fed into the incinerator during FY 2008–09.

Progress Noted at ETPP

Jim Kopotic, Deputy Federal Project Director for East Tennessee Technology Park cleanup, briefed the ORSSAB Environmental Management Committee at its May meeting on the progress of cleanup at ETPP.

Kopotic said that to date 190 facilities have been demolished, 258 have been deactivated, and 235 have been characterized in preparation for decontamination and decommissioning.

Kopotic said about \$56 million was added to the FY 2008 cleanup budget, which allows some earlier missed completion targets to be re-milestoned.

The additional funding will allow the completion of work on the K-1070-B burial grounds and Building K-413 in Zone 2, which encompasses about 800 acres within the former main industrial area of the park.

Recent Recommendations & Comments

Complete recommendation text can be found on the ORSSAB web site at www.oakridge.doe.gov/em/ssab/recc.htm.

Recommendation on the Remedial Investigation/ Feasibility Study for EITP

East Tennessee Technology Park (EITP), the site of the K-25 Gaseous Diffusion Plant, is currently undergoing environmental cleanup, including the decontamination, decommissioning, and demolition of many unneeded facilities.

A final sitewide record of decision (ROD) covering remediation of groundwater, surface water, and soil remains to be developed. Before the sitewide ROD can be written, a remedial investigation/feasibility study (RI/FS) is conducted, which is used to develop the proposed plan to implement the ROD.

In May 2007 DOE issued a RI/FS for the Environmental Protection Agency (EPA), Tennessee Department of Environment and Conservation (TDEC), and ORSSAB to review. EPA and TDEC made a number of comments on the RI/FS, and DOE subsequently issued another version for review.

Because of the complexity of the documents, ORSSAB engaged the services of ARCADIS, an environmental consulting firm, to review both documents and the comments made on them by EPA and TDEC.

Based on the review of the two versions of the RI/FS and the regulator comments, the ORSSAB Environmental Management (EM) Committee developed a recommendation on the RI/FS.

The four main points of the recommendation, approved by the

board at its May 2008 meeting, are as follows:

- ORSSAB recommends the selection of risk-based remedial goals rather than maximum contaminant levels to facilitate active remediation options for groundwater and to allow the establishment of achievable goals.
- ORSSAB recommends a re-evaluation of the 100-year duration for the monitored natural attenuation activities with a focus on a more reasonable time frame of 30 to 50 years.
- ORSSAB realizes that a technical impracticability waiver may be necessary to address the source term in some of the contaminated areas; however, doing so without a source action at those sites may jeopardize successful application of monitored natural attenuation. A technology demonstration should be considered for at least one of the critical areas prior to a final decision to employ a technical impracticability waiver.
- While final decisions on technology options and subsequent proposed plans for EITP groundwater cleanup will require completion of the recommended technology demonstrations, ORSSAB believes that it is very important to complete the regulatory approval of the current RI/FS document as a baseline for future decision documents.

Recommendation on Supporting an Oral History Program for the Oak Ridge Reservation

In April 2007, an ORSSAB subcommittee was formed to explore the possibility of starting a comprehensive oral history program for Oak Ridge (see story on page 7). A community-wide steering committee was formed to oversee the launch and management of the program.

The steering committee has proposed a budget of \$55,000 to start the program and requested seed money from DOE-Oak Ridge and ORSSAB. ORSSAB donated \$7,000 and encouraged DOE to endorse the program and support it monetarily.

Recommendation on the FY 2010 Oak Ridge EM Budget Request

In March 2008, DOE-Oak Ridge asked ORSSAB to comment on the FY 2010 Oak Ridge EM budget request being sent to DOE-Headquarters.

After reviewing the request and supporting budget information supplied by DOE, the board made several recommendations. The board recommended that worker safety remain the highest priority for DOE-EM. The board found it unacceptable that a number of milestones had been missed because of inadequate funding, and it recommended that DOE-Oak Ridge EM funding be restored to at least FY 2006 levels.

The board also recommended that additional funding be supplied for work being done at Building 3019 at Oak Ridge National Laboratory. The recommendation stated that additional money should be requested for handling newly generated waste.

The recommendation suggested that in the future DOE provide the budget request to the board sooner, giving the board more time to review it.

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Bob Olson Stays Active and Involved

ORSSAB member Bob Olson retired from full-time work in 1995, but he has remained active and involved in the community.

Bob sits on the board of directors of Clinch River Home Health, a United Way agency. “We are the only home health care agency that never turns anyone down because of lack of financial resources,” he says. “We have a staff of nurses and nurse assistants who provide health care services in the home.”

He has recently begun volunteering for the Contact Help Line. “If you’re troubled and need someone to talk to, there is someone available to listen. We work confidentially. We don’t ask for names or where someone is calling from. However, if someone calls and they are in real trouble, suicidal for instance, we try to get them the help they need. We have a support staff of psychologists, psychiatrists, and other trained personnel we can call in.”

And even though Bob has a doctorate in nuclear engineering he still spends a lot of time learning and exploring. “About eight years ago I got involved with the Oak Ridge Institute for Continued Learning (ORICL). I’ve taken classes in science and philosophy, and I’m currently the moderator for the Philosophical Society. We have regular speakers on a variety of topics. It’s sort of an Ed Sullivan Show for high-brows,” he jokes. “My primary responsibility is finding speakers, about 30 a year.”



Bob Olson has served on ORSSAB since his appointment in April 2005.

Bob also sits on ORICL’s science and philosophy curriculum committees and acts as a trip planner. “We’ve taken field trips to places as diverse as geological sites and Brushy Mountain State Penitentiary.”

A native of Virginia, Bob attended North Carolina State University, earning a bachelor’s degree in nuclear engineering and a master’s degree in physics. After graduation he worked a couple of years at the Savannah River Site (SRS) nuclear plant in reactor technology and three years at the SRS lab in experimental physics.

At SRS he was convinced by a University of Tennessee professor

to come to Knoxville to pursue his doctorate. He then went to work for Sargent and Lundy, an architectural engineering firm in Chicago. After 11 years in the Windy City, he came to Oak Ridge as an engineering consultant for Science Applications International Corporation. He then worked briefly for the Tennessee Valley Authority in probabilistic risk assessment before returning to SRS in the same capacity. “In 1995 they offered me early retirement and I took it!”

While in Oak Ridge he met Wanda, whom he married when he returned to Oak Ridge after he retired. “I liked living in Oak Ridge and Wanda’s family lived here, so it was a good compromise because Wanda was living in California at the time.”

Bob applied for membership on ORSSAB at the recommendation of former member John Million. “John thought I might like it, and I value John’s opinions so I applied. It’s been a good experience,” he said. Bob was appointed to the board in 2005 and is in his second term.



The Public Outreach Committee has been active this year with presentations to a variety of organizations. Here, committee member Steve Stow addresses the Oak Ridge Lions Club at its April 28 meeting. To schedule a presentation to your organization, call (865) 241-4583.

ORSSAB Says Goodbye to Ashlyn & Hubert...

ORSSAB thanked its two outgoing student representatives, Ashlyn Hall, Oak Ridge High School, and Hubert Gibson, Oliver Springs High School, for their one-year service to the board at its April meeting.



Ashlyn and Hubert were presented with service awards and a special cake at the April board meeting.

They were presented plaques for their service by Steve McCracken, the DOE-Oak Ridge manager for the cleanup program. "I appreciate the participation of these two fine young people on our board for the past year," he said. "Our student representatives bring a fresh view to what we do, and we hope they will take with them what they have learned and apply it to other settings."

Ashlyn and Hubert were active participants on several of ORSSAB's committees. Ashlyn was a member of the Stewardship Committee and Stewardship Education Subcommittee. She helped make revisions to the Stewardship Education Resource Kit, which is used by area educators to teach students about stewardship of land that has been contaminated by hazardous or radioactive wastes.

Hubert was a member of the board's Environmental Management Committee, the Oral History Subcommittee, and the steering committee that organized a public meeting on the

preservation of the K-25 Building. He also participated in an oral history workshop that led to the formation of the Oak Ridge Oral History Steering Committee.

"I learned a lot about how government works and how the public works with the government," says Ashlyn. "It was interesting to see how it's done. It was something of a civics lesson. I also really enjoyed working on the Stewardship Education Subcommittee and the Education Kit. It's good the kit has been developed to help educate students about what was accomplished in Oak Ridge. I don't think kids have

as much appreciation for what went on here as in years past. The kit helps teach them about that."

Ashlyn has been accepted to attend Belmont University in Nashville where she'll study journalism and environmental science.

Hubert plans to study the sciences, perhaps either chemical engineering or environmental science. He'll begin his college career at Pellissippi State Technical Community College and then transfer to either the University of Tennessee or Tennessee Tech.

"It was a great experience being on the board," he says. "I learned a lot about the cleanup program, and I was glad to participate on the planning committee for the K-25 public meeting. I feel strongly that a portion of the K-25 Building should be preserved."

...and Welcomes Claire & Miranda

ORSSAB welcomed two new student representatives to its ranks at the May board meeting.

Claire Campbell will be a senior at Oak Ridge High School in the fall. She was a member of the junior Envirothon team and is the leader of the band's flute section. She was named the 10th best flute player, out of about 500 contestants, in East Tennessee. She is a



Claire Campbell (left) and Miranda Clower.

volunteer at the American Museum of Science and Energy and participates in the First United Methodist choir and First Presbyterian Youth Program.

Miranda Clower will be a senior at Roane County High, where she is an active member of the Young Republicans Club and the Beta Club. She is a member of the Edgewood Baptist youth choir and participates in other church activities. Her career plans include the math and sciences.

"I am always amazed by the caliber of young people we get to serve on our board," said Steve McCracken, DOE-Oak Ridge Assistant Manager for Environmental Management. "What they gain by being a part of this organization will serve them well when they become adult members of their communities."

Oak Ridge Oral History Program Formed

The seeds sown at ORSSAB's Oral History Workshop last fall (see the January 2008 *Advocate*) have now flowed into a comprehensive oral history program called the "Center for Oak Ridge Oral History (COROH)."

Headquartered at the Oak Ridge Public Library, the program is being led by a steering committee that includes representatives from the DOE Oak Ridge Office, ORSSAB, the Oak Ridge Public Library, the American Museum of Science and Energy, the City of Oak Ridge, the Children's Museum of Oak Ridge, the National Nuclear Security Administration/Y-12, the DOE Office of Science and Technical Information, the Tennessee State Library and Archives, the Tennessee Valley Authority, the University of Tennessee Center for Study of War and Society, and two members of the public.

"We are very excited about the potential of making these oral history materials available for the public and researchers, as well as gathering new stories," said library director Kathy McNeilly.

The objective of the program is to provide public access to existing oral histories and to continue gathering additional histories of people who worked and lived in Oak Ridge before, during, and after the Manhattan Project, plus the Cold War Years to the present.

Steve Stow, ORSSAB member and former director of the American Museum of Science and

Energy, first proposed the idea of jumpstarting an oral history program to the ORSSAB Executive Committee in early 2007.



"More than 300 oral histories have been conducted over the years with individuals who worked at the three main plants during and after the Manhattan Project," said Stow. "But they were conducted by various organizations and are stored in various locations. They are not easily accessible to researchers and interested individuals. I believe all of these interviews should be consolidated in one all-inclusive program managed by one entity to make these resources more accessible. We also need a mechanism to continue gathering stories."

The Executive Committee asked Stow to form an ad hoc group of interested persons to study the feasibility of establishing a comprehensive oral history program. The ad hoc committee held a workshop in October 2007

that consisted of representatives of several organizations and individuals interested in the history of Oak Ridge. One of the ideas to come out of the workshop was to form a steering committee to oversee the establishment and administration of an oral history program.

The steering committee had its first meeting in January and decided that the Oak Ridge Public Library will act as the manager of the program. The committee will work with the library to determine how existing oral histories will be catalogued, the final format of interviews, and persons to be interviewed in the future.

ORSSAB has donated \$7,000 in seed money to help get the program started and has recommended that DOE-Oak Ridge endorse the program and support it monetarily.

For more information about COROH contact Kathy McNeilly at the Oak Ridge Public Library, (865) 425-3455.



Spreading the word about COROH at June's Secret City Festival are ORSSAB Federal Coordinator Pat Halsey, center, and Oak Ridge Public Library Director Kathy McNeilly, right.

Bear Creek *continued from page 2*

sibility study and proposed plan. After regulator and ORSSAB comments are received, DOE then has another two months to respond with a second draft of the documents. This process will repeat until comments and recommendations are addressed to the satisfaction of the regulators.

When the feasibility study and proposed plan are approved by the regulators, there will be a 45-day period to gather comments from the public. During that time DOE will sponsor a public meeting on the proposed plan. Once those comments are addressed, a record of decision will be signed by DOE, EPA, and TDEC to begin remediation of BCBG.

SSAB Chairs Convene for Semiannual Meeting

Chairs and other representatives of the seven branch sites of the Environmental Management Site Specific Advisory Board (EM SSAB) gathered in Richland, Wash., April 22–24 for the tenth annual spring chairs meeting. Darryl Bonner, Steve Dixon, and Ted Lundy attended the meeting to represent the Oak Ridge SSAB.

The first day, participants toured the 586-square mile DOE Hanford Site, which was established in the 1940s to produce plutonium for the Manhattan Project. Hanford operated a number of reactors until the 1980s. Today Hanford is undergoing a massive environmental cleanup costing about \$2 billion annually.

The business portion of the meeting opened April 23 with a presentation by DOE Assistant Secretary for EM James

Rispoli. He said DOE-EM manages the largest environmental cleanup program in the world, employing 34,000 workers and covering 4,500 facilities that require cleanup and demolition. Rispoli said while the overriding priority is safety, the program's goal is to reduce risk while maximizing regulatory compliance and strengthening program and project management.

Rispoli concluded his presentation by challenging the SSABs to help the public understand complicated issues.

Additional presentations included an update on the national waste disposition strategy by Christine Gelles, director of the Office of Disposal Operations. Merle Sykes, director of the Office of Strategic Planning and Analysis, explained how budgets are

developed. Mark Gilbertson, Deputy Assistant Secretary for Engineering and Technology, said the mission of his office is to development ways to reduce risk and uncertainties. He said while progress has been made, major uncertainties across the complex must be addressed through innovative technologies.

The meeting concluded with the development of two recommendations. The first commended DOE-EM on the establishment of an Office of Communications and asked for a briefing on the office by its director at the fall chairs meeting. The second recommendation asked that quarterly progress reports be provided to each SSAB for review.

The next SSAB chairs meeting is scheduled for September 16–17 in Washington, DC.

Oak Ridge Site Specific Advisory Board
P.O. Box 2001, MS-7604
Oak Ridge, Tennessee 37831

JOIN US FOR OUR PUBLIC MEETINGS

Board Meetings

- July 9, 6:00 pm – Presentation: Environmental Management Cleanup History and Progress and How ORSSAB has Influenced the Program
- August 9, Annual Planning Retreat, Whitestone Country Inn, Kingston, 8:30 a.m. – 4:30 p.m.

Committee Meetings

- July 16, 5:30 pm – Environmental Mgmt.
- Aug. 19, 5:30 pm – Stewardship
- Aug. 20, 5:30 pm – Environmental Mgmt.

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