TRANSCRIPT OF PROCEEDINGS

PUBLIC MEETING AND HEARING)
)
SAVANNAH RIVER SITE)

REVISED AND CORRECTED COPY

Pages: 1 through 299

Place: Augusta, Georgia

Date: June 16, 2011

HERITAGE REPORTING CORPORATION

Official Reporters
1220 L Street, N.W., Suite 600
Washington, D.C. 20005-4018
(202) 628-4888
contracts@hrccourtreporters.com

BEFORE THE
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

PUBLIC MEETING AND HEARING)
)
SAVANNAH RIVER SITE)

June 16, 2011
1:00 p.m.

Bell Auditorium
Augusta Entertainment Complex
712 Telfair Street
Augusta, Georgia 30901-2327

BOARD MEMBERS PRESENT:

PETER S. WINOKUR, Ph.D., Chairman
JOSEPH F. BADER, Board Member
DR. JOHN E. MANSFIELD, Ph.D., Board Member

ATTENDEES:

Xavier Ascanio
Wyatt Clark
Dae Chung
John Dickenson
Fred Dohse
Robert Edwards
David Eyler
David Freshwater
Kevin Hall
Steven Howell
Pat McGuire
Michael Mikolanis
David Moody
David Olson
Geoff Reynolds
Lee Schifer
Terrel Spears

I N D E X

SPEAKER	PAGE
Opening Remarks	
Chairman's Opening Remarks Chairman Peter S. Winokur, Ph.D. Defense Nuclear Facilities Safety Board	5
Statement by DOE Headquarters Mr. Dae Chung Principal Deputy Assistant Secretary for Environmental Management Department of Energy	13
Statement by DOE Site Office Dr. David Moody, Manager Savannah River Operations Office Department of Energy	20
Liquid Waste Processing	
Statement by Board's Staff Mr. Daniel Ogg, Group Lead, Nuclear Materials Processing & Stabilization Defense Nuclear Facilities Safety Board	23
Statement by DOE Site Office Mr. Terrel Spears Asst. Manager for Waste Disposition Project Savannah River Operations Office	35
Questions by Board Members to Panel of DOE and Contractor Personnel	43
Emergency Preparedness	
Statement by Board's Staff Mr. Mark Sautman, Site Representative Savannah River Site Defense Nuclear Facilities Safety Board	102
Statement by DOE Site Office Mr. Michael Mikolanis, Chief Engineer (Acting) Savannah River Operations Office	113
Questions by Board Members to Panel of DOE, NNSA, and Contractor Personnel	120
Public Comments	171
Recess	188

Session II

Nuclear Materials Storage and Disposition Introduction of Speakers and Panel Chairman Peter S. Winokur, Ph.D. Defense Nuclear Facilities Safety Board	189
Statement by Board's Staff Mr. Mark Sautman, Site Representative Savannah River Site Defense Nuclear Facilities Safety Board	194
Statement by DOE Site Office Mr. Patrick McGuire, Assistant Manager for Nuclear Material Stabilization Project, Savannah River Operations Office	207
Questions by Board Members to Panel of DOE, NNSA, and Contractor Personnel	214
Public Comments	267
Chairman's Closing Remarks Chairman Peter S. Winokur, Ph.D. Defense Nuclear Facilities Safety Board	295

P R O C E E D I N G S

(1:00 p.m.)

DR. WINOKUR: Good afternoon. My name is Peter Winokur, and I am the Chairman of the Defense Nuclear Facilities Safety Board [DNFSB]. I will preside over this public meeting and hearing.

I would like to introduce my colleagues on the Board. To my immediate left is Dr. John Mansfield; to my immediate right is Mr. Joseph Bader. We three and Ms. Jessie Roberson, Vice Chairman, constitute the Board.

The Board's Deputy General Counsel, Mr. Rick Schapira, is seated to my far left. The Board's Technical Director, Mr. Timothy Dwyer, is seated to my far right. Several members of the Board's staff closely involved with oversight of defense nuclear facilities belonging to the Department of Energy [DOE] are also here.

Today's meeting and hearing were publicly noticed in the *Federal Register* on May 17, 2011. The meeting and hearing are held open to the public per the provisions of the Government in the Sunshine Act.

In order to provide timely and accurate information concerning the Board's public and worker safety -- the worker health and safety mission throughout DOE's defense nuclear complex, the Board is recording this proceeding through a verbatim transcript and video recording.

The transcript, associated documents, public notice, and video recording will be available for viewing at our public reading room in Washington, DC. In addition, an archived copy of the video recording will be available through our website for at least 60 days.

Per the Board's practice and as stated in the *Federal Register* notice, we welcome comments from interested members of the public at the conclusion of testimony, approximately 4:30 p.m. this afternoon for Session I and approximately 8:30 p.m. for Session II.

A list of those speakers who have contacted the Board is posted at the entrance to this room. We have generally listed the speakers in the order in which they have contacted us or, if possible, when they wish to speak. I will call the speakers in this order and ask that speakers state their name and title at the beginning of their presentation.

There's also a table at the entrance to this room with a sign-up sheet for members of the public who wish to make a presentation but did not have an opportunity to notify us ahead of time. They will follow those who have already registered with us in the order in which they have signed up.

To give everyone wishing to make a presentation an equal opportunity, we ask speakers to limit their original presentations to five minutes. The Chair will then give consideration for additional comments, should time permit.

Presentations should be limited to comments, technical information, or data concerning the subject of this public meeting and hearing. The Board Members may question anyone making a presentation to the extent deemed appropriate.

The record of this proceeding will remain open until July 18, 2011. I would like to reiterate that the Board reserves its right to further schedule and regulate the course of this meeting and hearing, to recess, reconvene, postpone, or adjourn this meeting and hearing and to otherwise exercise its authority under the Atomic Energy Act of 1954, as amended.

I would now like to move on to why the Board chose to hold a public hearing at the Savannah River Site. First, the Board intends to hold more public meetings in communities surrounding defense nuclear facilities. Too many of our public meetings are held in Washington, DC, far from those members of the public who have a vested interest in the sites.

We selected the Savannah River Site because it is one of the highest and most varied workloads -- has one of the highest and most varied workloads in the DOE complex.

At this one site, there are operations involving plutonium, enriched uranium, transuranic waste, tritium, liquid high-level waste, low-level waste, decommissioning, research and development [R & D], as well as several major construction projects. These diverse activities are performed by multiple contractors and managed by different organizations within DOE.

The very complexity of the Savannah River Site creates additional hazards beyond the sum of its individual activities.

There is no way for us to address every potentially hazardous nuclear activity at the Savannah River Site in this forum. Therefore we have limited ourselves to three topics that we believe are high priorities due to their safety implications: liquid waste processing, emergency preparedness, and nuclear material storage and disposition. In the remainder of my remarks, I will briefly comment on these three topics.

The liquid high-level waste system at the Savannah River Site contains one of the largest inventories of radioactive material in the world, approximately 350 million curies.

Currently a significant portion of this liquid waste is held in older tanks, which lack full secondary containment. Space in newer tanks is at a premium. The Board issued Recommendation 2001-1, High-Level Waste Management at the Savannah River Site [SRS], to urge DOE to treat the high-level waste system as an integrated whole with a safety goal of stabilizing its radioactive material in a timely manner while avoiding unacceptable levels of new risk during this stabilization process.

The Board is concerned that in the ten years since we issued Recommendation 2001-1, there has been little progress in reducing the inventories of high-level waste at the Savannah River Site. There has been some progress in reducing the curie content, but the volumes in the tanks remain nearly the same.

DOE and its contractor, Savannah River Remediation, LLC [SRR], have ambitious plans to accelerate waste stabilization and tank closure at the Savannah River Site. This goal is commendable.

However, even with adequate funding resources available, these plans are reliant upon new facilities without a demonstrated capability to integrate seamlessly with aging systems that will need to perform beyond their historical baselines. Delays and system failures can increase risks as old-style tanks are used for even longer periods of time.

The Board wants to better understand how DOE is managing and reducing that risk at a time when Type III tank space, which is necessary for operational flexibility in emergencies such as leaking tanks, continues to hover around 2 million gallons, a relatively small margin.

The Board wants to emphasize that the smooth operation of all high-level waste facilities at the Savannah River Site as an integrated whole provides a critical safety mission for the Department of Energy. Treating and stabilizing legacy waste in underground tanks is the Board's overriding safety concern at the site.

Emergency preparedness has always been a critical part of any hazardous site's safety posture. Recent events in the Gulf of Mexico, Japan, and across the southern United States have shown the world that catastrophic accidents can happen anywhere.

One must prepare for both natural and man-made disasters. One lesson that is clear from both the Deepwater Horizon and Fukushima disasters is that emergency response preparations must include plans for recovery from an event on a reasonable time scale, not just plans for immediate stabilization of the scene.

Operations at the Savannah River Site have the potential to create serious events on their own and as a result of natural phenomena. The Board believes that emergency preparedness programs at the Savannah River Site should be strengthened through improved integration among the contractors and facilities, stronger drill and exercise programs, and the preplanning of post-event recovery actions.

The Board also believes it is critical that emergency preparedness and fire department organizations are fully staffed and trained and have the resources necessary to provide the most immediate on-site response following a natural disaster.

The Board is also concerned about how DOE will dispose of nuclear materials in light of the potential termination of H-Canyon and HB-Line processing. Surplus nuclear materials across the complex with questionable storage conditions and uncertain futures were the topic of two Board recommendations: Recommendation 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex*, and Recommendation 2000-1, *Prioritization for Stabilizing Nuclear Materials.*

While DOE has successfully stabilized, at least into interim forms, most of the immediate hazards described in the recommendations, surplus nuclear materials continue to present safety hazards during storage and processing until they reach their final stabilized form, usually in a waste repository.

DOE recently chose not to process spent fuel -- spent nuclear fuel in H-Canyon following significant preparations on-site in support of this mission. In conjunction with this decision, the Department of Energy began providing direction to Savannah River Nuclear Solutions [SRNS] to prepare for shutting down all processing in the Canyon.

H-Canyon has been the planned disposition path for a large amount of nuclear materials at the Savannah River Site and throughout the DOE complex. While DOE has made some headway in developing new pathways to stabilize a portion of these nuclear materials, there are uncertainties in these new disposition plans.

The site's inventory of aluminum-clad, spent nuclear fuel is not among those materials that have a new proposed disposition path. Therefore, the Board would like to understand whether extended storage of nuclear materials may cause safety problems, specifically the inventories of spent nuclear fuel in wet storage at the Savannah River Site.

This concludes my opening comments. I will now turn to the Board Members for their opening statements.

Do you have an opening statement, Dr. Mansfield?

DR. MANSFIELD: No, not at this time.

DR. WINOKUR: Do you have an opening statement, Mr. Bader?

MR. BADER: No, not at this time.

DR. WINOKUR: This concludes the Board's opening remarks. At this time, I would like to introduce Mr. Dae Chung, the Principal Deputy Assistant Secretary for Environmental Management at DOE, and Dr. David Moody, the manager of DOE's Savannah River Operations Office, and ask them to provide their opening statements.

Your full written statements will be accepted into the record, so I'd ask you to please summarize your comments. Thank you.

MR. CHUNG: Good afternoon, Mr. Chairman and Members of the Defense Nuclear Facilities Safety Board. I appreciate the opportunity to be here today to represent Department of Energy's Office of Environmental Management [EM] and provide a complex-wide perspective on liquid waste processing, nuclear material storage, and disposition and emergency preparedness, with a focus on the Savannah River Site.

With regard to liquid waste processing, EM has approximately 90 million gallons of highly radioactive liquid tank waste throughout our complex. Management and treatment of this waste makes up over 33 percent of the life cycle costs of the EM program, and managing this waste safely is our highest priority.

EM has had an active liquid waste technology and development effort since the mid-1990s. Recent efforts have centered on evaluation of the overall technologies for tank waste treatment through the technical evaluation group and the Environmental Management Advisory Board Tank Waste Subcommittee, which will propose recommendations to the Assistant Secretary this summer via a separate public meeting.

Several tank waste treatment facilities were initiated approximately 15 years ago; specifically the vitrification facilities at West Valley Demonstration Project, which has since been shut down, and at Savannah River Site.

The Savannah River Site has 51 below-ground tanks, two of which are closed. The tanks contain approximately 37 million gallons of waste, containing about 380 million curies.

As noted before, SRS has operated tank waste treatment facilities for some time, the Defense Waste Processing Facility, initiating operations in 1996 for processing sludge waste from the tanks.

Recent changes in the Defense Waste Processing Facility melter design will allow greater waste loading in canisters, which will assist in reducing the cost and schedule of the tank waste mission.

In 2008 the Department began operating the Actinide Removal Process Modular Cesium Removal Unit to separate the higher-activity fraction of the salt waste for treatment in the Defense Waste Processing Facility from the lower-activity fraction that is treated and disposed on-site via Saltstone.

In 2014, DOE anticipates beginning operation of the Salt Waste Processing Facility [SWPF], which will enable more rapid processing of the salt waste.

New innovations are currently being developed for pretreatment in Tank Farms. These are currently in the testing phase to determine their effectiveness and, when deployed, should result in increased [sic] cost and schedule for separating the waste.

Key technologies being considered include a next-generation cesium extractant for the Salt Waste Processing Facility, rotary microfiltration, and a small-column ion exchange system. EM recently performed an external technical review of the latter two technologies, and they are also being evaluated by the Tank Waste Subcommittee that I mentioned earlier.

The Board has been closely involved in our efforts in this area. On March 23, 2001, the Board issued Recommendation 2001-1, *High-Level Waste Management at*

Savannah River Site.

In response to this recommendation, the site has made progress in developing and implementing processes to treat salt waste and improvements in its tracking and monitoring system for available tank space.

The safety concerns posed by the tank space have been mitigated to some extent by the number of tanks that have been emptied through the accelerated tank closure program.

Additionally, the site utilized $200 million of Recovery Act funds on Tank Farm infrastructure upgrades and also has an active program to address potential vulnerabilities posed by aging Tank Farm facilities.

With regard to nuclear materials storage and disposition, H-Canyon is a key component and is currently operating to complete blend-down of the enriched uranium recovered from dissolution of about 5.6 metric tons of unirradiated highly enriched uranium [HEU] materials provided by National Nuclear Security Administration [NNSA] that has been ongoing for about the last three years.

The Department intends to complete the current highly enriched uranium blend-down work in 2011, and H-Canyon will then continue in a operational condition. At this time, there are no plans to process any significant quantity of materials in H-Canyon beyond completion of the highly enriched uranium blend-down activity.

However, in fiscal year 2012, H-Canyon activities will include proficiency runs to maintain operator qualification, continued receipt and processing of sample returns from Savannah River National Laboratory [SRNL] and F-and-H Process Laboratory, working with other program secretarial offices to identify proof of concept demonstrations that may be performed there, and continued remediation of legacy transuranic waste.

Additionally, DOE plans to utilize HB-Line to begin blending surplus non-pit plutonium material with an additive to make the material difficult to recover for subsequent disposal at the Waste Isolation Pilot Plant [WIPP] for final disposal and to complete research and development work on a vacuum distillation process to determine whether certain plutonium can be processed to meet the Mixed Oxide [MOX] Fuel Fabrication Facility acceptance specification.

The Secretary of Energy has determined that no processing of aluminum-clad used nuclear fuel [UNF] will occur until the recommendations of the President's Blue Ribbon Commission [BRC] on America's Nuclear Future are issued and evaluated by the Department.

The proposed use of H-Canyon will still allow the flexibility to process aluminum-clad used fuel and any other appropriate nuclear fuels in the future, should that decision be made.

In the interim, the aluminum-clad used fuel will remain in safe wet storage in L-Basin at the Savannah River Site. Any future decision will consider alternatives such as processing in H-Canyon, placing it in dry storage, or implementing a potential future Blue Ribbon Commission recommendation regarding used nuclear fuel.

Additionally, there are currently no surplus nuclear materials in a storage condition that pose safety risks for facility workers, the public, or the environment and that need to be stabilized or processed in H-Canyon.

EM has reviewed NNSA's classified nuclear material inventory assessment, which identifies all of the Department's nuclear materials and used nuclear fuel, to make sure there are no materials on it that might require future processing in H-Canyon for either disposition or stabilization purposes.

As noted in the Department's April 22nd, 2011, letter to the Board, there are no orphan special nuclear materials that EM is aware of at this time that require processing in H-Canyon to address a safety concern.

With regard to emergency preparedness, EM has a documented and robust emergency management program in accordance with DOE requirements. All EM facilities have implemented, at a minimum, a base level emergency management program which provides a framework for the response to serious events involving health and safety, the environment, safeguards, and security.

All EM sites develop plans and procedures to respond to emergency events based on their hazards, train and exercise emergency response personnel to respond, and coordinate with the state, local, and tribal governments regarding the hazards, response capabilities, and plans.

In addition, our facilities perform annual self-assessments of their emergency management program, and a full-participation exercise is conducted at a minimum of once a year.

EM headquarters performs oversight of the sites' emergency management programs, including performing assessments every three years and observing emergency management exercises.

Off-site entities are invited to participate in the exercise at least once every three years; however, depending on agreements with response resources such as fire, medical, local law enforcement agencies, most of the sites exercise annually with their off-site entities.

The recent events at the Japanese Fukushima Daiichi nuclear site prompted the Department to evaluate several issues at its sites with regard to beyond-design-basis events and the robustness of site emergency management plans.

SRS identified some areas for improvement in emergency management. An example of a planned improvement is to develop and execute emergency management drills focused on common-cause events affecting multiple facilities and multiple organizations.

In summary, we are making progress towards our goal of treating liquid waste, applying lessons learned to continuously improve our emergency preparedness posture in light of the recent experience in Japan, and have processes and facilities necessary to safely store nuclear materials until their ultimate disposition.

Thank you.

DR. WINOKUR: Thank you, Mr. Chung.

Dr. Moody.

DR. MOODY: Good afternoon, Chairman Winokur, members' of the Defense Nuclear Facilities Safety Board, the Board's staff, and members of the public. I, too, welcome the opportunity to address the Board today and respond to any questions you may have regarding the liquid waste processing mission, safe storage and disposition of nuclear materials, and the state of emergency preparedness at the Savannah River Site.

Mr. Chung just provided an excellent overview of these three topics, and I would like to open this meeting with a few remarks concerning our vision of the Savannah River Site mission.

The heart of the future vision for the Savannah River Site is the idea that unique nuclear materials expertise and assets reside at the site, which can be used to benefit the nation.

This expertise and infrastructure support three business segments: clean energy, environmental stewardship, and national security.

The new H-Canyon mission touches two of these business segments: clean energy with advanced fuel reprocessing R&D and national security in the areas of nonproliferation and material disposition.

Traditional H-Canyon operations will continue through calendar year '11 and transition to new missions in calendar year '12. I expect the Board to hear a lot more about this tonight during the third panel.

For environmental stewardship, our objective is to lead the Department in the deployment of innovative radioactive waste cleanup technologies, to accelerate current DOE national program priorities. During the first panel today, you'll hear about some of our recent successes and the real progress being made in remediating tank waste.

Implementation of the Savannah River Site vision will require some workforce restructuring as we develop new technical capabilities in small modular reactor design and operations, fuel cycle research and development, and national deterrence programs. We will also strive to retain existing technical capabilities, especially in canyon and line disposition of proliferant materials.

Evolving missions and workforce restructuring will create a number of challenges and require balancing priorities as we maintain safety, reduce risk, and meet legal and regulatory commitments.

We must carefully consider options when assuring emergency preparedness and moving forward with actions to decrease the risk associated with legacy materials.

We will continue to close tanks and to vitrify and grout tank waste. We will ship all of the legacy transuranic waste to the Waste Isolation Pilot Plant, and we will disposition other legacy nuclear materials.

In emergency preparedness, we will evaluate the scopes of drills and their frequency and continue programs to monitor operability of safety equipment in our nuclear facilities. I expect the Board will hear more about this during the second panel.

Again, I want to say that I appreciate the opportunity to be here this afternoon, and I look forward to these discussions, questions, and comments from the Board.

DR. WINOKUR: Thank you, Dr. Moody.

At this time, I would like to introduce Mr. Daniel Ogg, who will provide testimony from the Board's staff.

Mr. Ogg, I'll take your full written statement for the record, so please summarize your written statement in ten minutes or less.

MR. OGG: Good afternoon, Mr. Chairman and Members of the Board. For the record, my name is Daniel Ogg, and I am the Board's Group Lead for Nuclear Materials Processing and Stabilization. I direct the oversight of the nuclear cleanup activities conducted by the Department of Energy at the Savannah River Site. I will submit the full written statement for the record.

In this session of the public meeting, the Board is considering DOE's efforts to safely store, retrieve, and stabilize liquid high-level wastes held in underground storage tanks at the Savannah River Site.

I will provide a brief history of the high-level waste system at the Savannah River Site, then I will discuss the risks presented by the system and the actions taken by the Board and DOE to address the risks. Finally, I will discuss DOE's efforts to treat high-level waste at the Savannah River Site and the challenges where improvement is needed.

The Board has long focused its oversight on DOE's efforts to safely store and treat high-level wastes throughout the complex. At the Savannah River Site, DOE and its contractor manage approximately 38 million gallons of high-level waste containing approximately 350 million curies of radioactive isotopes in 49 underground storage tanks.

This collection of waste is one of the largest inventories of radioactive material in the defense nuclear weapons complex, and its safe storage and treatment should be among DOE's highest priorities.

DOE started using the high-level waste storage tanks at the Savannah River Site beginning in 1954. The oldest 22 of these tanks have been in service for more than 55 years, do not include modern design features for containment, and are generally considered not suitable for continued long-term storage of the waste.

The newer 27 tanks, called Type III tanks, do include modern features such as full secondary containment, but they are so full of sludge, saltcake, and liquid waste that DOE's retrieval and treatment efforts have been hampered by a lack of operational space and flexibility.

I'll briefly explain the waste forms. The sludge waste includes dense materials like plutonium that settle to the bottom of the tanks. The saltcake and liquid wastes include other radioactive materials like cesium that dissolve easily in water.

In 1996, DOE started the Defense Waste Processing Facility or DWPF to turn the highly radioactive portion of the waste into a stable glass form suitable for permanent disposal. DOE intended to treat both sludge wastes and salt wastes at the DWPF; however, when the site's main salt processing capability failed in the mid-'90s -- that was the in-tank precipitation process, or ITP -- DOE was forced to process only sludge wastes at DWPF.

This is significant because more than 90 percent of the waste by volume is salt waste, and most of it will remain in the high-level waste tanks until DOE starts the new Salt Waste Processing Facility, the replacement for the ITP process.

In 1990, DOE began operations of the Saltstone

Disposal Facility to treat the less radioactive portion of the waste resulting from waste retrieval and treatment operations. Operators at Saltstone produce a cement waste form that they dispose on site in disposal cells.

After the failure of ITP, DOE began several initiatives to treat and dispose of salt wastes. In 2008, DOE started a new process to treat salt waste, the ARP/MCU process; that's the Actinide Removal Process and the Modular Caustic-Side Solvent Extraction Unit.

This process serves two purposes. One, it is a test bed for the full-scale Salt Waste Processing Facility, and, two, it removes salt waste from the high-level waste tanks, but at a low flow rate. And finally, for the past eight years, DOE has been designing and building the Salt Waste Processing Facility.

Although DOE has removed some salt waste from the high-level waste tanks using these processes, progress has been slow, and total waste volume remains high. This is particularly true with space in the newer Type III tanks, where DOE expects waste volume to remain high until the Salt Waste Processing Facility begins operations.

High waste volume leads to inefficient operation of the liquid waste evaporators, creates a lack of flexibility to respond to large waste leak from a tank, and necessitates a larger number of small waste transfers, which may cause more risks to workers from leaks or spills.

The Board remains concerned about the aging tanks, the slow progress of waste retrieval, and the continuing challenges that DOE faces in inefficient and produc -- I'm sorry -- inefficient and productive operation of its waste processing facilities.

These concerns bring me to a discussion of risks at the Tank Farms. The most significant risks posed by the liquid high-level wastes are large accidents such as explosions that can spread radioactive contamination, threatening both site workers and the public at the site boundary.

Other risks include waste leaks and spills that can present chemical hazards, inhalation hazards, and direct-radiation hazards to site workers.

Regarding leaks, the primary barrier is the integrity of the high-level waste tanks and the waste transfer piping. However, as I mentioned earlier, some of the high-level waste tanks at the Savannah River Site are more than 55 years old.

Underground carbon steel tanks like those at the Savannah River Site were expected to have service lives of about 40 years when they were built. Many of the oldest tanks are known by DOE to have cracks and leak sites in the tank walls, but the full extent of the cracks is not known, due to the limitations in DOE's ability to inspect all surfaces of the tank walls.

This situation is well illustrated by the events of 2000 and 2001 that led the Board to issue Recommendation 2001-1, *High-Level Waste Management at Savannah River Site*.

Briefly, DOE's contractor had decided to store wastes in one of the oldest tanks, Tank 6, that they thought was sound and not leaking. However, shortly after waste transfers began, operators discovered waste leaking through cracks in the walls of Tank 6.

Subsequently the Board recommended several corrective actions, including the removal of waste from Tank 6 to a level below all known leak sites, acceleration of the waste salt -- salt waste processing capability, and the development of a better integrated tank space management program.

DOE has taken action to restrict waste storage in tanks with known leak sites and to improve the chemistry control program to prevent new leak sites from developing. DOE also performs inspections of tank walls, looking for new leak sites, an effort the Board has suggested should be expanded to include a much larger percentage of the tank wall surfaces.

Regarding postulated large accidents at Savannah River Site, earthquakes can lead to explosions in the high-level waste tanks, releasing significant quantities of radioactive material. DOE estimates that these accidents, if unchecked, could lead to radiation exposures to the public exceeding the DOE limit of 25 rem at the site boundary.

The Board and DOE remain focused on careful evaluation of these accidents and on the identification and implementation of adequate controls to protect the workers and the public. Overall, the high-level wastes at the Savannah River Site continue to pose significant safety risks to the site workers and the public.

Although DOE maintains several controls to prevent and mitigate potential accidents, the most definitive long-term solution is the removal and stabilization of the high-level wastes in the tanks.

I believe the Board and DOE are firmly in agreement regarding this course of action. As a high priority, DOE should direct all necessary resources to improving waste retrieval and treatment processes.

At this point, I will move to a discussion of areas that the Board believes need improvement, and I'll highlight three areas needing improvement: salt waste processing, Saltstone operations, and DWPF operations in conjunction with tank space management.

As I noted earlier, more than 90 percent of the tank waste volume consists of salt wastes. For several years, the Board has urged DOE to accelerate the development and implementation of salt waste processing capabilities. Today, DOE's efforts in this regard include the operation of the ARP/MCU process and the design and construction of the Salt Waste Processing Facility.

Generally, the ARP/MCU process has been successful in demonstrating the technology to be used by the Salt Waste Processing Facility. However, DOE has experienced a number of technical problems with the process that have limited its efficiency and its flow rate.

For example, after startup, DOE had expected a flow rate of approximately 40 [sic] gallons per week at ARP/MCU. At times, DOE met this goal for short periods, but during fiscal year 2011, the average flow rate has been about 20,000 gallons per week.

Additionally, the ARP/MCU process has experienced difficulties in removing organic materials from the product stream that goes to the DWPF, which has a low tolerance for organic materials.

The Board continues to urge DOE to follow these developments, determine causes and solutions, and ensure that all lessons learned are communicated to its contractor building the Salt Waste Processing Facility.

When the Salt Waste Processing Facility begins operations, it is expected to be the main workhorse of the high-level waste system, quickly removing salt waste from the tanks and therefore achieving the fastest risk reduction.

However, this Facility, too, has experienced a number of delays, some programmatic and some technical. To illustrate this, in 2005, DOE planned startup in four years. In 2008, DOE planned startup in four years. And today, DOE has committed to startup in 2015, still four years away.

Although DOE has not delayed the startup since the beginning of construction in 2009, the Board cannot emphasize enough that DOE must apply appropriate resources and oversight to the Salt Waste Processing Facility to ensure that further delays do not occur.

DOE also faces challenges at the Saltstone Production Facility. For the past three years, operators at Saltstone have experienced many operational problems such as clogged process lines, fluctuations in flow rates, and unplanned shutdowns.

In order to support the Salt Waste Processing Facility, Saltstone must process more than 11 million gallons per year. However, overall flow rate at Saltstone during the past three years has been less than 2 million gallons per year.

The Board continues to urge DOE to make improvements in Saltstone operations and demonstrate as soon as possible that Saltstone can operate at a higher flow rate.

Finally, I'll address DWPF and tank space management. DWPF has been one of DOE's more consistent and productive facilities in the high-level waste system. It has achieved significant risk reduction by converting more than 70 million curies of sludge waste into stable glass form, suitable for disposal in a deep geologic repository.

The downside of DWPF is that it creates more waste volume than it removes. This volume increase is due to many steps of waste washing and chemical adjustment necessary to prepare the waste for treatment.

The DWPF waste stream contains low concentrations of radioactivity, but puts a continuing strain on the available space in the Tank Farms. For example, one of three evaporator systems in the Tank Farms is dedicated solely to reduce the volume of DWPF waste stream.

In response to the Board's Recommendation

2001-1, DOE has implemented actions to minimize the impacts of DWPF operation on available tank space. An example of these actions is the beneficial reuse of the waste stream to dissolve saltcake in the high-level waste tanks.

However, when the Salt Waste Processing Facility begins operations, the volume of the DWPF waste stream will increase significantly, and DOE will have to plan carefully to manage this waste.

DOE can also improve tank space management through gains in evaporator efficiency and by making Tanks 48 and 50 available for high-level waste service. These two tanks are newer 1.3 million gallon tanks, and their return to service would add operational flexibility and space for emergency leak response in the Tank Farms. However, DOE managers recently suggested that they might not return Tank 48 to service until 2021.

In closing, I'll reiterate that I believe the Board and DOE clearly have the same goal with regard to the high-level waste system at the Savannah River Site; that is the expeditious removal and treatment of the tank wastes, thereby achieving stabilization of one of the largest inventories of radioactive material in DOE's nuclear weapons complex.

The goal is clear, but progress has been slow, and the Board urges DOE to make improvements in many areas. Complicating the path forward are several factors, including aging tanks and infrastructure, poor reliability of some processing systems, and heavy reliance on an aggressive schedule that leaves little room for error.

Because many of the systems and facilities are closely coupled, if any major operating system or planned system fails, nearly all waste processing will stop. This could significantly lengthen the time the wastes are stored in the aging and degrading tanks.

This completes my prepared testimony. I would be happy to answer any questions from the Board.

DR. WINOKUR: Do the Board Members have any questions for Mr. Ogg?

DR. MANSFIELD: Not at this time.

MR. BADER: No.

DR. WINOKUR: Hearing none, thank you, Mr. Ogg.

I'd like to introduce the panel of witnesses from DOE and its contractor organizations for the topic of liquid waste processing to take their seats.

(Pause.)

DR. WINOKUR: Let me introduce them.

Mr. Terrel Spears is the Assistant Manager for the Waste Disposition Project at DOE's Savannah River Operations Office.

Mr. Michael Mikolanis is the Acting Chief Engineer at DOE's Savannah River Operations Office.

Mr. David Olson is the President and Project Manager for Savannah River Remediation.

Mr. Wyatt Clark is the Interim Operations and Deputy Project Manager for Savannah River Remediation.

And Mr. John Dickenson is the Senior Technical Advisor for Savannah River Remediation.

Does any member of the panel wish to submit written testimony at this time?

(No response.)

DR. WINOKUR: Seeing none, let me say that the Board will either direct questions to the panel or individual panelists, who will answer them to the best of their ability.

After an initial answer, other panelists may seek recognition by the Chair to supplement the answer, but what I'd hope is that the panel member who responds to the question would be the person who's most prepared to provide a qualified answer to the question.

We have a lot of questions and a lot of material to cover.

MR. SPEARS: Mr. Chairman?

DR. WINOKUR: Yes?

MR. SPEARS: Mr. Chairman. Do I get an

opportunity for an opening statement, sir?

DR. WINOKUR: Yes. I'm getting to that in a moment.

MR. SPEARS: Thank you.

DR. WINOKUR: If panelists would like to take a question to the record, the answer for that question will be entered into the record of this hearing at a later time. With that, we will continue with an opening statement by Mr. Spears.

Mr. Spears, the Board will accept your written testimony. I'd ask you to keep your opening statement to a length of ten minutes or less.

MR. SPEARS: Thank you. Good afternoon to you, Chairman Winokur and to other Members of the Board, the Board's staff, and the members of the public present here today.

I appreciate the opportunity to discuss with you the accomplishments we have made in the liquid waste program here at the Savannah River Site. As the Federal Project Director for the Liquid Waste Project, I'm responsible and accountable to execute the liquid waste mission safely, efficiently, and effectively.

I wish to assure you that I place an emphasis on safety above all and am committed and devoted to fostering a culture of planning safety into everything we do and then executing all our work safely.

I wish to note here that the Department's contractor for execution of the liquid waste mission, Savannah River Remediation, Limited Liability Company, received just this last month recertification of its Star status under the Department of Energy's Voluntary Protection Program, commonly known as the VPP.

As you know, VPP Star status connotes the highest level of safety and health performance recognized by the DOE Office of Health, Safety & Security [HSS]. I commend SRR for its excellent safety and health record as demonstrated by receipt of this prestigious award.

In the time available for my remarks today, I wish to touch on just a few of the highlights associated with the significant progress that we've made in remediating tank waste at the Savannah River Site.

Our Defense Waste Processing Facility continues to perform a workhorse role in immobilizing the high-activity fraction of sludge and salt waste through vitrification and then pouring the vitrified glass waste form into stainless steel canisters.

We have produced over 3100 canisters at DWPF so far, slightly more than 40 percent of the estimated life cycle total. Following the retrofit of four argon bubbler systems into the DWPF melter last September, we have seen a substantial increase in melter throughput capacity, such that the time to fill a canister has been reduced from somewhat more than 30 hours to approximately 20 hours.

Other planned improvements at DWPF will further increase the capacity of this facility to process sludge and salt waste as part of our ongoing effort to effect improvements in the local waste system to accelerate waste processing and complete the liquid waste mission as early as we possibly can.

As you are well aware, the total amount of curies in tank storage are approximately evenly split between two waste types: sludge and salt, yet salt waste comprises approximately 90 percent of the stored tank waste by volume.

You also know that the DWPF has spent much of its operational period processing sludge waste only. Therefore, while DWPF has made a substantial contribution to risk reduction and stored tank waste by immobilizing sludge waste in glass, the processing of sludge waste alone has not appreciably reduced the total volume of stored waste in the Tank Farms to facilitate tank emptying and closure.

Thus, commencing salt waste processing activities while awaiting the start of operations of the Salt Waste Processing Facility was a DOE imperative and led us to develop an interim salt waste processing capability in the form of our Actinide Removal Process and Modular Caustic-Side Solvent Extraction Unit, generally referred to as ARP/MCU.

I'm most pleased to report that our ARP/MCU facilities have performed in excess of our expectations. While our design for ARP/MCU was established to receive a decontamination factor, or DF, of 12, for the predominant source of radioactivity in our salt waste, cesium 137, our operational experience has far surpassed this goal by routinely achieving DFs above 100 and at times exceeding 400.

This means that substantially more of the radioactivity associated with the salt waste processed by ARP/MCU went to DWPF for immobilization in canisters, and substantially fewer of the curies went to the Saltstone Facility for disposal in the form of grout waste in on-site vaults.

I also note that we have achieved a 50 percent increase in the processing rate at MCU, which now operates nominally at six gallons per minute, and we've processed more than 1.7 million gallons of salt waste since ARP/MCU startup in 2008.

While this level of performance is noteworthy, we are constantly seeking opportunities to improve upon our current performance. To that end, we have plans to introduce a new solvent into the MCU flow sheet, which promises even better DF performance than is currently being experienced.

This new solvent, which we refer to as the next-generation solvent, is the product of past investments made by the Office of Environmental Management in the development of new waste treatment technologies.

This new solvent holds the promise of achieving a higher DF and operational throughput in the ARP/MCU and the SWPF in the future.

This is but one example of where the efforts of the overall DOE Office of Environmental Management, coupled with those of the DOE Savannah River Operations Office, have brought a singular focus on improving liquid waste processing operations to the benefit of the Liquid Waste Project at Savannah River Site.

Aside from the benefit of dispositioning salt waste through the operation of ARP/MCU, a further benefit is being realized through the record of operational experience at these facilities, since the SWPF utilizes the same technologies employed in ARP/MCU, only on a much larger scale, to support much greater waste throughput rates.

This operational record provides the SWPF project with a wealth of technical data which the SWPF project team is capitalizing on to increase confidence in the effective and efficient future operation of this facility.

All the progress I've described thus far has contributed greatly towards getting waste out of our old-style tanks and achieving the tank closure commitments set forth in our Federal Facilities Agreement with the Environmental Protection Agency [EPA] and the State of South Carolina.

We presently have more tanks engaged in the tank closure process -- fully 15 tanks -- than has ever been the case until now. We have two tanks, Tank 18 and 19, that are ready to close.

We have declared bulk waste efforts completed in four tanks, and we are poised towards readying more tanks for closure in the near future as we continue in our efforts to remove and process sludge and salt waste.

I would like to turn now to a topic with which the Board is also quite familiar, and that's Recommendation 2001-1, entitled *High-Level Waste Management at the Savannah River Site*, wherein the Board expressed concern with what it termed the critical shortage of tank space in the high-level waste system.

In response to the issuance of this

recommendation in 2001, the Department issued an implementation plan wherein it made commitments to execute actions aimed at addressing the Board's concerns.

Over the years, the Department has made good on a multitude of its commitments, proposed new commitments to account for changing status in the Liquid Waste Project over the years, and in so doing revised and resubmitted the implementation plan to the Board accordingly.

While DOE has not yet reached a point where all commitments have been fulfilled such that the Board can consider the recommendation to have been fully addressed and resolved, substantial progress has been made, and the current state of tank waste availability in the Tank Farms is much improved over the circumstances that existed in 2001.

That said, the process of preparing sludge and salt waste for removal from tanks, preparation for feeding to treatment facilities, and associated interim storage means that we will be continuing to make use of tank space for these purposes, while ensuring the availability of sufficient tank space to permit the transfer and storage of waste from a tank, should a leak be experienced.

The Department remains committed to resolving the concerns underlying Recommendation 2001-1, and I look forward to our further interactions toward that end.

In my brief remarks here today, I've sought to feature some of our recent successes and also to tout the real progress being made at SRS in remediating tank waste. Our ultimate goal -- that is, the processing of all tank waste into glass at DWPF or into grout at the Saltstone Facility -- and the closure of the tanks and the Tank Farms will be the ultimate safety achievement for the Department and for the public, and I'm committed to achieving this goal as safely and as soon as possible.

Thank you.

DR. WINOKUR: Thank you, Mr. Spears.

With that, we'll continue with questions from the Board Members to the full panel, and we'll begin with Mr. Bader.

MR. BADER: I think the first question that probably would be good to direct towards Mr. Spears, at least to start with.

You talked about the performance of ARP/MCU, yet in 2009 you processed 622,000 gallons, and in 2010 that dropped to 475,000 gallons. Could you comment on what you understand is the reason for the decrease and what's being done to reverse that?

MR. SPEARS: Yes, sir, Mr. Bader. I would like to give an opening response to that and refer it to one of my colleagues as well for some substantial detail there.

But I will tell you that we have a dual purpose, as you perhaps are aware, for the ARP/MCU, one of which was, starting at 2008, to provide an operational capability to begin treating salt waste at Savannah River.

As correctly noted in 2001-1, there were significant space issues; we needed space in order to process, so it was important that we get a start on salt processing to gain that space so we could continue operating DWPF and we could also begin to free up tank space to be able to begin emptying old-style tanks, clean them, and close them.

So we started that facility up, number one, to gain some processing capacity at a fairly low level, recognizing that we would not be able to make substantial progress in terms of emptying tanks until the Salt Waste Processing Facility became available.

But the second purpose of the ARP/MCU, and one that we also have found to be very valuable, is that of gaining operational experience with the Actinide Removal Process and, moreover, the Caustic-Side Solvent Extraction process.

Never been operated in practice before, so in that sense we consider ARP/MCU to also be a pilot facility that leads and informs the operations and, in some cases, the design of the SWPF.

So while you are correct that we experienced some operational issues, in fact, all through the life cycle, up unto last year and in fact currently we continue to experience some operational issues, upsets, and anomalies that we have to explore, we consider those not to be necessarily impediments but value-added situations, because as we learn from those, we use them to inform SWPF.

That being said, we did experience issues that were both chemical in nature and mechanical in nature, and in each of those we stopped, of course, resolved those issues, and proceeded ahead with operations so we could continue to gain tank space and process in order to gain tank space to empty tanks, but also continued, as we experienced those things, to learn from them and to communicate that learning to the SWPF project team.

And there are a number of instances where they've learned things that have affected the design as well as the future operations, so I can give you more detail regarding the specific instances, if you like, but that's the general response.

MR. BADER: Well, let me continue, because I have a couple of questions in this regard. You've also had a drop in your DF, in your decontamination factor.

MR. SPEARS: Yes, sir.

MR. BADER: Is that something that you have a good explanation for so far?

MR. SPEARS: We have studied that. In fact, we are considering that to be one of the learnings. Generally speaking, we consider, I believe, that there's -- as you continue to operate with the -- with what's commonly known as the BOB Calix solvent, the solvent that extracts the cesium from the waste, it continues to age.

So I think we're seeing some aging phenomenon there, but for a detailed response I'd like to ask Wyatt Clark to step in here and give you some details on that from an engineering perspective.

DR. WINOKUR: I would ask you, though -- I know you want to give us a detailed response, but let's try to be concise also. We do have a lot of questions, so we really want a good exchange of information, but, you know, try to balance that need here in the hearing. Okay?

MR. SPEARS: Thank you, Chairman.

MR. BADER: Yeah, we have a long way to go in a short time.

MR. CLARK: I do understand.

Thank you, Terry. [Terrel Spears]

Mr. Bader, you pointed out a good observation with respect to performance of MCU. This year alone we're on target for a million gallons of production. In fact, if you look at the last three weeks, all three weeks have run well over 40,000, and we even have demonstrated a 50,000 week, which is a record performance for MCU.

Recognizing that it's a test bed, as stated by Mr. Ogg earlier, we have gained quite a bit of information that we have passed on to SWPF. I can give a very lengthy dissertation on the number of modifications or benefits, but I'm not sure that's necessarily where you want to head here, so as it relates to the DF specifically, Terry [Terrel Spears] indicated that we believe we may be observing an early indication of aging.

One of the features we've gained from MCU is to recognize life expectancy of components and additional benefits, chemistry adjustment, solids management. Those were directly of benefit to SWPF, and we are integrating that in the flow sheet going forward with salt management.

We expect that the knowledge that we're gaining on organic management, including the pause in operation that we had last year, as it relates to organic management, will directly benefit SWPF as well.

All of those lessons are communicated; they are evaluated fully, and in the case of our DF, we are coupled up with SRNL, working through detailed analysis of the solvent that's in play.

We develop a thorough path forward, reach a conclusion, as is the case for the modifications we've put in place, and then pass them back.

So we do believe we may be seeing an aging-related issue with the solvent. We also believe we may be seeing a contaminant in the solvent. Both of those clearly beneficial to long-term performance. I will emphasize that, even in its current condition, it's running a DF of 100, well above the design of the process.

MR. BADER: If I look at this and take all of your comments into consideration on this being a test bed, yet with the delay in SWPF, at some point you're going to have to run ARP/MCU really almost in a production mode for about three years, given the current schedules.

Have you made any conscious effort to figure out what modifications and changes you have to make to run this really in a production mode?

MR. SPEARS: Yes, sir, we have. As a matter of fact, we do have a program that's underway and more work planned on service-life extension for ARP/MCU. As you correctly point out, the SWPF has in fact now established a start date of -- our planning purposes is 2014. The range they have on their schedule, of course, is between 2013, 2015.

Currently the project is on track to start up in 2014, and we're planning around that, so we're planning to extend the service life of ARP/MCU to bridge that gap, as you correctly point out.

MR. BADER: Yet it's beyond its design basis or design life at that point.

MR. SPEARS: Yes, sir. It's beyond the expectation that we went into. In fact, I think I would like to call on John Dickenson to give us some specifics there, because we have a lot of detail around that. We'll give you a summary of that detail specifically related to the design life.

MR. DICKENSON: Thank you, Terry. [Terrel Spears]

As you point out, the ARP/MCU was originally placed in service with an expectation for a three-year service life. When the system planning got to the point where we needed to extend the operational life of ARP/MCU, we conducted a comprehensive evaluation of the experience we've had at the facility, the parameters that surrounded the original design of the facility and the original construction.

And we've put together a plan to go address those things that need to be addressed in order to give us the confidence we need to extend the service life until the startup of SWPF.

Very briefly, the kinds of things that are incorporated in that comprehensive plan are implementation of process and equipment upgrades and improvements; further evaluation of the need for spare parts; the procurement of those parts, so that we have them on hand; the necessary revisions to preventive maintenance schedules, so that we do the necessary surveillances and ensure that the equipment is continuing to perform as designed; increased equipment performance monitoring during the extended life period; and then of course obtaining all the necessary regulatory approvals to continue to operate the facility.

MR. BADER: I'd ask one more question. Have you -- you've experienced, I would say, higher than normal exposure doses to people doing maintenance.

DR. WINOKUR: Excuse me. Can we track down what that -- what's going on here; what these thumps are? They're a little annoying. I don't know if the audio folks can give a little thought to that or pinpoint that for us. It would be appreciated. Thank you.

MR. BADER: Have you considered what you need to do in order to reduce the dose rates to the maintenance people? It went with your planned performance of maintenance.

MR. SPEARS: Wyatt [Wyatt Clark], why don't you take that one.

MR. CLARK: Thank you.

One of the key aspects of MCU is a facility that was, as you stated earlier, built for a short period of performance.

MR. BADER: Yeah. Now you have to use it as a production --

MR. CLARK: Yes, sir.

MR. BADER: -- mode facility.

MR. CLARK: It was built modular; it was built with a design that allowed us to do maintenance but required us to do a significant amount of prep to get ready to do maintenance.

John [John Dickenson} identified a number of activities that we were going after as it relates to the extension of operations. One of the key aspects is to go after some of the components that have given us the most -- the largest amount of maintenance work.

I specifically point to the coalescer and the pumps. Those are two of the key components that we've gone into. The modifications that we'll install will give us the ability to remoteably remove the coalescers and replace them without entering the cell. That's a significant improvement to the workers.

I'll emphasize that one of the key aspects to the approach we've taken to do maintenance on MCU as a whole is to build some fairly unique maintenance stands, bridges that could be installed, shielding that could be installed, flushes that we would get the rates down.

But entering the cell contributes to that exposure, so our objective was to hit those two critical maintenance items, coalescers being one, the other one being pumps.

The original design used a Lutz pump strategy, and our experience so far has shown that pump to be less reliable than we would like, requiring us to enter the cell more frequently.

We've redesigned that pump. Within the outage we're planning to take on, we'll go in and replace those pumps with a much more robust pump, similar to what we use on pump tanks throughout the Tank Farm.

The third focus that we're taking as it relates to reducing exposure would be to rebuild the contactors to support the new solvent that was discussed earlier. While we're in that repair, our plan is to address the active components, the bearings, and set those up for an extended run.

So our target is hit the key items; we've looked at that in our pereta perspective; we've incorporated it in our plan.

DR. WINOKUR: Okay. Thank you for that. I think we'll turn to Dr. Mansfield now. Thank you.

DR. MANSFIELD: Thank you, Mr. Chairman.

Just one question, Mr. Clark. The high -- unexpectedly high Isopar carryover, was that related in any way to the lifetime of the chemicals involved, or what seems to have caused that?

MR. CLARK: It's a twofold answer. Probably the most targeted answer would be we allowed the solvent, though it was still in band, still in our specification, that lower limit of specification allowed the solvent to not separate as well as we would expect.

The separation then affected its ability to be coalesced and then decanted, so it moved towards the strip effluent side, towards DWPF.

We went back and added a number of features to address that. First is quality control. We've tightened the bands with respect to the quality we run on the solvent.

The other is to actually go in and add in features for the operators, to give them indications if they saw an upset condition. So we did not just rely on that; we added those features, which were -- are pretty significant.

DR. MANSFIELD: Would that be like a

differential pressure measurement on the coalescer or what?

MR. CLARK: The coalescer differential pressure is not a good indicator of that condition, no, sir. In fact, some of the better conditions would be to look at flow rates, especially those systems that are contributing to the balance of flow at the contactors.

DR. MANSFIELD: Do you think you'll have to redesign coalescers in any way to stay in your band of acceptance?

MR. CLARK: We do not plan on redesigning coalescers, outside of the remotability discussion I said earlier.

DR. MANSFIELD: Yes.

MR. CLARK: Now, we are looking at an alternative to extend the size of the coalescers to give us more capability to handle solids management as we go through, but that's not a function of the organic; it's really a function of us trying to get increased attainment in the plant between maintenance outages.

DR. MANSFIELD: All right.

Thank you, Mr. Chairman.

DR. WINOKUR: Let me just go back and make sure I understood what you said. You said that you're planning for the fact that you're going to extend the life of the system and that you know that you're going to need to eventually replace pumps and other components. Is that true?

MR. CLARK: That is correct, sir.

DR. WINOKUR: And you've made these procurements, and you have this all set up and ready to go.

MR. CLARK: That is correct, sir.

DR. WINOKUR: Thank you.

I wanted to start to talk a little bit about another component here, and that's Saltstone, I know a topic, Mr. Olson, you're very interested in.

And I note that the volume of waste processed through Saltstone fell about 48 percent between 2009 and 2010. I know it's been a very challenging system to work with.

What are the causes of this decline, and what did you do to reverse that trend?

MR. SPEARS: Wyatt [Wyatt Clark], why don't you respond to that.

MR. CLARK: Thank you.

You've properly characterized our attention on Saltstone. In fact, as stated earlier, we've only produced 4.7 million gallons of saltstone since operation.

I will emphasize that this very weekend we tripped a million gallons within this fiscal year, so we've shown a significant attention to reliability.

Some of the briefs that we've done earlier focused in that area, and last year, knowing we needed increased demand from Saltstone, we stood up a technical group, independent, to assess the plant, the process, and the features we'd need to include to ensure increased reliability, as well as increased throughput. Clearly 1 million is good; it's not near the capacity we need for an SWPF operation.

Three elements contributed to the 1 million gallons this year, of which has significantly improved reliability. The first was to include some instrumentation into our dry feed system, so that we get a better appreciation for how dry feeds are conveyed into the process.

I should lead that with just a little bit of information for the public, in that the Saltstone Facility is really two segments. There's a processing facility, which takes decontaminated salt solution from the Tank Farm and mixes it with a grout solid to have a flowable, nonhazardous material that is then transferred to the disposal facility, where it sets up on a monolithic saltstone hardened concrete.

Flowability and monitoring the flowing

conditions of the grout going into that liquid stream is very important, so adding that instrumentation gave us the ability to gain new information and new knowledge.

The second feature that we included as a result of the independent review -- and probably the most significant -- is the ability to have a smart transition.

Historically, the vast majority of problems we have in terms of setting up hardened material in the line come from the transition at the end of a production run, where you're flowing material and you're backing away from that to secure the process.

The smart transition approach took four key parameters to monitor the acceptability of our flush on the end of that transition or to make sure that the flush occurred on a transition where we shut it down, to ensure the line was adequately clean.

Previously it was very time sensitive; we used time. Now we use four parameters that measure really the quality of the material flowing through the line.

The third element was to install real-time system monitoring. Now, that is system health monitoring by engineers post each run, so when we perform a Saltstone run, we grab the data associated with that run, evaluate it with the knowledgeable subject-matter experts, and make a decision, "Are there things we should do? Do we see indicators? Should we make changes before the next run?"

Those three changes have been significant in reliability. In fact, we've had no hardening, no rock-up events in the line since we've implemented that.

Now, those really only address short-term changes to give us increased reliability for the short duration. We have a plan, similar to the MCU extension, to improve the performance of that facility, and that's incorporated in the ELAWD [Enhanced Low Activity Waste Disposal] strategy going forward.

DR. WINOKUR: What would you consider to be the reliability of this system today?

MR. CLARK: We've measured that since we've brought it back on line, and if you evaluate the reliability, recognizing we wanted at least a four-hour run when we brought it up into service, after Tank 50 sent material to Saltstone, it's been 90 percent reliable.

DR. WINOKUR: So you're planning on it being 90 percent reliable?

MR. CLARK: We will increase reliability and throughput through ELAWD performance.

DR. WINOKUR: I don't know if this is included in the long-term planning, but one of the things we had heard back in Washington was that one of the challenges of this facility was that it wasn't really being run on a continuous basis; that the frequent starting and stopping of the system could present challenges to you and that you might demonstrate with a four-day run, 24 hours a day, four days in a row, you might demonstrate a number that might be more reflective of the actual reliability of the system when SWPF begins to operate.

MR. CLARK: Chairman, may I pass the question to John Dickenson? He would characterize the ELAWD process and some of the --

DR. WINOKUR: Okay.

MR. CLARK: -- That we have -- improvements.

DR. WINOKUR: I would like a brief answer, though; thank you.

MR. DICKENSON: Very briefly, Mr. Chairman. The modifications that we're making fall into two categories. The first category is equipment upgrade; the second category is staffing increase.

The facility is currently staffed to run day shift only, and part of our plan is to increase the staffing so that it will be fully staffed with qualified personnel to operate 24 hours a day, seven days a week. That in itself will expand the capability and throughput of the facility.

The equipment upgrades -- let me just speak to a couple of them very briefly, and then I'll get specifically to your question.

One of the things we're going to do is the grout hopper in the facility today currently has a working volume of 12 gallons, and our plan would replace that with a much larger grout hopper with the capability to agitate, which will get at these pluggage issues we've been having and give us significantly greater capacity and reliability in that area.

The other thing we're going to do to address those kinds of issues is expand the capacity and the reach and extent of the flushing Facility, or the flushing capability that's built into the facility.

Thirdly, we're going to significantly improve dry feeds flow and the metering capability for dry feed addition, one of the areas that Mr. Clark spoke to earlier.

We're confident that the combination of those equipment upgrades that we're going to go install over the next couple of years, coupled with increasing the staffing to support 24x7 operation will give us the full reliability and throughput capacity that we need at Saltstone to support bringing SWPF on line and the other things that we have in our system plan.

Now, directly to your question about how do we confirm that reliability. Saltstone has recently, as Mr.

Clark said, demonstrated significantly higher processing rates, and the ability to achieve annual rates in the 6 to 8 million gallon per year range have been demonstrated recently in short-duration runs.

For example, in December we processed about a half a million gallons in one month. Also, in April of 2011, in an eight-day period, we processed almost 240,000 gallons.

So for a couple of short-duration runs that we've done in the recent past, we have seen reliability. Now, what we plan to do going forward over the next couple years, the facility will, for parts of the year for the next two or three years, be in an outage to do the upgrades I just mentioned.

For those periods of the year where the facility is in operation, not supporting one of those outages, we will have accumulated a significant volume of decontaminated salt solution in the hold tank and feed tank for Saltstone, and our intent will be to perform several what I'll call demonstration runs over not too short a period, but weeks period, where we can demonstrate the capability to sustain operation over that period of time and process several hundred thousand gallons in a run that would then give us confidence that when we extrapolate that rate, we can do the kinds of annual throughputs that the facility will have to support.

DR. WINOKUR: Thank you for that.

Let me ask one more question on this. Am I right to assume that Saltstone could be the long pole in the tent when it actually comes to running SWPF, because obviously a lot of things have to work well to process the salt waste.

Mr. Spears, this sounds like you want to answer that question. Please.

MR. SPEARS: Yes, sir. I don't know if I'd characterize as the long pole in the tent, but I would characterize it as a critical facility going forward, absolutely.

The large volumes of salt waste, the low-activity waste coming from SWPF, and perhaps other treatment capabilities in the Tank Farm -- small-column ion exchange, et cetera -- will certainly exceed the kinds of volumes that have ever been processed through that facility in the past.

So you're absolutely right; we are focused on that and the reliability of that facility and demonstrating that reliability. The 24/7 operations I believe is critical going forward, so very keen observation.

I did want to add one or two other quick points to some of the questioning that you've provided thus far on Saltstone.

The Department is also focused on reliability of Saltstone and demonstrating that improved reliability. I will say that we have metrics in place now, as well as performance incentives for SRR to focus on and improve and demonstrate improved reliability.

We've recently reviewed some of the metrics associated with that and, you know, I think there's a couple of factors here.

And one is that we've seen an improvement based on the instrumentation and the data gathering and the observations associated with the plant as it does operate, in order to make sure we're making decisions on improved reliability, improved equipment, and improved processing capability that are based on data rather than just haphazard guessing.

So we're getting a lot of data inputs into the decisions that are informing, so we believe that that's helping to provide or make sure that the right equipment and so forth is being installed.

I'll also tell you that the reliability has been measured in a way that demonstrates that both prior to receipt of waste from Tank 50 into Saltstone we have seen improvements in that.

We have seen the tendency in recent -- over the last several months, anyway, to take corrective actions associated with early indicators, as the process is being started up, that helps avoid the need to shut down for extended periods and deal with rock-ups associated with real waste in there.

And as a result of that, most of the early shutdowns that we've seen in recent months has been during that initial, I call it, startup phase before waste is received into the process.

Secondly, after that waste transfer from Tank 50, there have been, I believe, only one -- I could be wrong, but very, very few, certainly, and I believe the answer is one -- failure associated with once waste has been received in the facility.

So we've seen a trend of improvement there with respect to reliability. There is more to do.

DR. WINOKUR: Thank you.

MR. DWYER: Mr. Chairman, could I just follow up with that?

DR. WINOKUR: Yes. Actually you'll have the next question, so feel free to follow up.

MR. DWYER: So if I understood what you just said, Mr. Spears, the -- part of the reason for your improved reliability is, if you're going to have a problem, you're catching it before introducing waste, and so you're able to stop the startup, if that's the proper way to phrase it.

MR. SPEARS: Take early action, yes.

MR. DWYER: Take early action. Okay. So a reliability number of 90 percent, I believe Mr. Clark said, would argue that there'd be very few of those, but you're talking as if there are several. Can you help me --

MR. SPEARS: Yes. I think, as I mentioned, there's a distinction between once waste has been introduced into the process and then prior to that, we are running on the water flushes and so forth to get the system primed and operational early on.

And so I think what I'm referring to is that during that early phase, before waste is introduced, we've experienced a number of conditions that have caused us to stop after we started that startup process, go back, regroup, figure that out, and then start again.

But as we process waste, once we've introduced that waste, we've had very few. And, again, I agree with Wyatt's [Wyatt Clark] 90 percent. It's on the order --

MR. DWYER: So --

MR. SPEARS: -- of 90 percent

MR. DWYER: -- So --

MR. SPEARS: -- success.
MR. DWYER: -- 90 percent reliability means once I've committed to waste --
MR. SPEARS: Yes.
MR. DWYER: -- I'm 90 percent reliable.
If I said, "Well, how many times do I pause in my startup and address a problem?" what would the reliability number be?
MR. SPEARS: I would say approximately 70 percent. And I've got some numbers on that. We do have metrics that we could share.
MR. DWYER: Okay. And that's measured -- I guess that's data since you made these upgrades.
MR. SPEARS: Yes, that's correct.
MR. DWYER: So data since November, since January, since --
MR. OLSON: It's August of last year.
MR. SPEARS: That's data since August of 2010.
MR. DWYER: Since August of last year?
MR. OLSON: Yes.
MR. DWYER: Okay.
MR. OLSON: Yes, sir. Saltstone operation, like a lot of batch plants, if you bring the plant up, get it stable on cold feeds, start generating a grout stream, and then introduce the hot feed, the radioactive feed --

it's during those -- stabilization during the startup mode that we've seen some transients. Not to the point of rock-up, but enough instability to shut back down, re-establish, and then go again.

MR. DWYER: And then just to finish drawing out the conclusion, before you made these enhancements, you would not have seen the anomalies as clearly, and you would have, in those cases, not been able to take action before committing to waste.

MR. OLSON: That's correct.

MR. DWYER: So with the outage that you have planned and the further improvements -- so you're expecting to go further along in the reliability -- are you expecting to have less trouble with the anomalies and adjustments, or are you talking about working on the 90 percent reliability number once you're actually processing waste?

MR. SPEARS: I believe I'd characterize the future improvements to be additional improvements to enhance reliability, to either maintain or improve upon the 90 percent factor, to go beyond that if at all possible.

MR. DWYER: So, again, that would argue getting into steady-state operations and trying to maintain that as long as possible. That's your best bet.

MR. SPEARS: Yes.

MR. DWYER: Okay.

DR. WINOKUR: Thank you. We have one more question on this topic, and then we'll move on.

Mr. Bader?

MR. BADER: If I look at the planned improvements, a number of these, to me, are critical to being able to have a high reliability over a sustained period of time.

How high are these on your infrastructure improvement list for actual funding?

MR. SPEARS: Mr. Bader, I believe that would be in my area.

MR. BADER: Yes.

MR. SPEARS: They're very high on our screen. They are important, as I said, because of the critical nature of Saltstone going forward, so they're things that we certainly want to preserve, even in the face of perhaps reduced budgets going forward. Those are areas that we need to make progress on.

MR. BADER: Thank you.

DR. WINOKUR: Mr. Dwyer.

MR. DWYER: Yes, sir.

Mr. Spears, I believe you said you had some numbers on the reliability. If I could ask you to submit those to us afterwards, that would be great.

MR. SPEARS: Yes, sir. We'll be glad to do that.

MR. DWYER: Okay. Thank you.

I was going to move on to DWPF, Mr. Chairman, if that's --

DR. WINOKUR: Please do.

MR. DWYER: We heard some indication of improvement in DWPF that has led to a higher throughput, and that's good. I wonder if you could walk me through a little bit of further improvements that you have planned there.

MR. SPEARS: Yes. I think for that I'd like to call on John Dickenson to talk to some of these future improvements with DWPF.

MR. DICKENSON: At the DWPF, the sludge processing capacity is essentially a function of Tank Farm sludge preparation capability, DWPF batch preparation capability once the material gets in, the facility, and then, of course, melter processing capacity.

Now, we're going to go -- deal with each of those in what I'll describe as a two-step process for enhancements.

The first step of these enhancements was retrofitting the existing melter in DWPF with what we call bubblers, which basically bubble argon gas into the melt pool to keep it circulated.

We have completed that first step. Those bubblers were installed in the melter last September. We now have some operating experience in the plant with those bubblers in operation, and we have increased the overall capacity at DWPF from what nominally was a 200-canister-per-year rate to what we would now say is about a 3- to 325-canister-per-year rate, just by this first step of introducing the bubblers into the melter.

And in fact we -- the truest measure of a melter pour improvement is that on average what used to take about 36 hours to fill a canister from the melter, now we're averaging about 20 hours to fill a canister. So you can see the improvement that's been made in the melter pour rate step. That's the first step of the enhancements.

The second phase of the enhancements deal with, as I mentioned, the ability to batch the material, get it into the facility, and then within the facility feed it to the melter at a rate that would take advantage of this increased capacity in the melter.

What we plan there are a couple of things. I'll mention just a few. We're going to use an alternate reductant; we plan to use an alternate reductant.

Replacing or minimizing formic acid with a alternative reductant will reduce the catalytic hydrogen generation, allowing for an increase in evaporation rate and cycle time reduction of up to about 20 percent in that unit operation that prepares the material to be fed to the melter.

Secondly, we're going to improve our process for adding frit into the mix. We're going to replace the current slurry-fed transfer design with a dense-phase dry conveying system, which will result in a cycle time reduction, we calculate, up to about 7 percent and yield a reduction of about 250,000 gallons per year in the volume of recycle that is returned from DWPF back to the Tank Farm.

Thirdly, we're going to also deal with reducing DWPF recycle back to the Tank Farm through water separation. We intend to install new equipment to remove wastewater from decontamination frit slurry, and we believe that will result in a cycle time reduction of about 20 percent and will yield another 15,000 gallon a year reduction in the amount of recycled water that comes back from DWPF to the Tank Farm.

And then thirdly, we want to install capability to route the cesium strip effluent stream that's coming in from MCU and, in the future, will come in from SWPF, so that we have the capability to take that stream to either of our main batch preparation vessels, the sludge receipt and adjustment tank or the slurry mix evaporator, either one.

By doing that, it will allow us to more balance -- more appropriately balance the evaporation load in DWPF so that we can fully feed the melter to take advantage of the full capability that it has.

We predict that when these enhancements are fully installed, the overall capability of the facility will be raised to approximately 400 canisters per year.

MR. DWYER: And as I understand, what you said is just by the bubblers alone you've gone from 200 to 325.

MR. DICKENSON: Yes, sir.

MR. DWYER: So when do you expect to be able to reach 400?

MR. DICKENSON: The installation of the equipment that's involved with the enhancements I just described will require a several-month outage in the DWPF processing schedule in order to accomplish that installation.

Our system plan evaluated what is the best timing of that outage. Should we go ahead and plan a separate outage to do that, or should we coincide that outage with an outage we're going to have to take when

SWPF facility is ready to be tied in to the system?

The end result of that evaluation was that the timing would be best, in terms of maximum overall canister production over the life of the program, if we coincide those two outages.

So right now, we plan to have that outage in early 2014 in anticipation of SWPF coming up later in 2014, so that by mid to latter part of 2014, DWPF then would be at full capacity of the 400 projection.

MR. DWYER: Okay. But by doing that -- I realize by doing it that way you're trying to maximize the system throughput, but you're trying to bring up new systems in DWPF at the same time you're trying to bring up a new facility at SWPF. Doesn't that complicate your picture?

MR. DICKENSON: Not necessarily. The system plan anticipates several things that need to happen in the next couple of years.

I mentioned the SWPF tie-in. I mentioned the outage at DWPF to support installation of these processing enhancements. And we are always evaluating the operational capability of the current melter installed in the facility at DWPF, and we're always projecting when we think the next melter replacement may need to happen.

So the system plan continues to look at that on a real-time basis, and ideally what would happen is those three things I just mentioned -- the SWPF tie-in, the DWPF processing enhancements, and the replacement of the melter -- would all occur concurrently, so that we could minimize the overall outage time of the facility, and it's well within our capability to handle all that work simultaneously.

MR. DWYER: So when you installed the bubblers, from start of outage until completion and optimum operation, how long would you say that took?

MR. DICKENSON: The outage to install the bubblers was approximately two weeks.

MR. DWYER: And -- but then you started up and there was some learning process to optimize the throughput at that point.

MR. DICKENSON: That -- we were pleased that that was rather minimal. In fact, when we brought the facility back up after installing the bubblers, I would say we almost saw an instantaneous increase in the pour rate of the melter, recognizing that's just the first step of the overall two-step program I described to you.

MR. OLSON: The modeling at VSL, Vitreous State Lab at Catholic [University of America], along with the mockup facility there, that university was able to deploy bubblers almost in the identical configuration and at the flow rates; that gave us a pretty good predictor of what would happen in DWPF. So it was almost instantaneous, a 0.8 gallon per minute to about a gallon and a half per minute operational change.

MR. DWYER: Okay. And so you're expecting that the upgrades that you're planning -- the options you're giving yourself on routes for strip effluent, the change in the reductant, all of these things will have been tested out at Catholic, or are you -- are you concerned that there's going to be some learning curve on the new systems at DWPF?

MR. OLSON: We're not going to test those at Catholic, but I believe there will be very little learning curve. These are basic engineering applications. We're not developing new technologies, new R&D. It's a dry conveyance system, just mechanical transfer; jumper rerouting within the DWPF. It's basic --

MR. DWYER: Okay.

MR. OLSON: designs we've done before, just applied in this particular situation.

MR. DWYER: And, Mr. Spears, if I can ask -- and DOE is satisfied and has no concerns about all three outages coinciding?

MR. SPEARS: I believe there's always risk associated with changing a process, of course, but, you know, the question is whether or not the changing of those activities in parallel during the same outage would increase that risk. I don't believe that it would.

I'd also like to point out that, you know, we've also had some experience in changing out a melter, so, you know, we experienced a, you know, a fairly smooth, seamless outage. We've got the lessons learned from that now that we can apply to the next outage associated with melter change-out. And also the ramp-up to operations post-outage, as I recall, was very smooth and seamless as well.

So I believe the risk is relatively low.

MR. DWYER: Thank you.

Thank you, Mr. Chairman.

DR. WINOKUR: We're going to move to Dr. Mansfield in a moment. I think Mr. Bader may have one more question on this topic.

MR. BADER: All of these things you're doing with the melter increases the duty on the melter. Have you developed a way to monitor the remaining lifetime? Because they're likely to accelerate the time to failure of the melter.

MR. SPEARS: Wyatt [Wyatt Clark], would you take that question, please? Or John [John Dickenson] are you more prepared? I'm sorry. I'm trying to pick the most prepared.

MR. DICKENSON: I'll be glad to.

MR. SPEARS: Thank you.

MR. DICKENSON: Thank you, Terry [Terrel Spears].

Yes, sir. We -- with the advent of installation of the bubblers, we commensurately have our engineers monitoring the melter performance. And indeed during a planned overall steam outage of the plant recently, within the last couple of months, DWPF facility had to be down, obviously, because of that outage.

During that outage window, we actually went into the plant, pulled the bubblers out of the melter, inspected the bubblers for actual wear versus what our engineering projections had been, looked at some of the systems that support that, just to give you an example of the kinds of things that we're doing in terms of monitoring the plant as we're making these enhancements. So, yes, sir.

MR. BADER: You can run that facility even if the bubblers have been eroded to the point where they're not functioning, but I'm concerned about the melter itself. Are you prepared to replace the melter earlier than planned? Do you have a spare melter?

MR. DICKENSON: Yes, sir. Our policy with respect to DWPF, because it's such an integral part of the system and vitrifying the high-level waste is clearly an activity that we don't want to have a significant unplanned outage in, in addition to the one operable melter that's in the plant today operating, we have a spare melter on standby at the site, equipped and ready to go in in short order if something happened to the one that's operating today.

We also have another melter in the pipeline of the procurement process to be delivered to the site in the near future.

DR. WINOKUR: Dr. Mansfield?

DR. MANSFIELD: Thank you, Mr. Chairman.

I wanted to ask a few questions about tank inventory. You have -- over the last ten years you've removed quite a bit of material from the tanks, especially the old-style tanks.

How many curies have been removed from the old-style tanks and, presumably, put into glass?

MR. SPEARS: Well, as you know and as you correctly point out, we are focused on removing waste from the old-style tanks to meet our Federal Facilities Agreement commitments to the State and to the EPA, so we are focused on that and, as a result, utilize our new-style tank space as processing capacity to allow that waste to come in there to be treated and dispositioned appropriately.

As far as the amount of curies that we've dispositioned from our old-style tanks during that process, I think I'd like to ask, John [John Dickenson], can you field that question, please?

MR. DICKENSON: Yes, sir. Be glad to. Thanks, Terry. [Terrel Spears]

Since the start of DWPF operation, we have placed a little over 37 million curies of activity into glass through the DWPF facility.

The vast majority of those curies came from old-style tank inventory. The process for retrieval, adjustment, and treatment of waste, we have priority on retrieving waste from old-style tanks, moving it through the disposition facilities, so the vast majority of 37 million curies came from old-style tanks.

I will tell you that in order to move the material from the old-style tanks to the vitrification facility, we did have to create some working space in the newer-style tanks, so we actually dispositioned some volume of waste that was in the new-style tanks to create space to get the waste out of the old-style tanks, but the vast majority of 37 million curies came from old-style tanks.

MR. SPEARS: If I could add just one thing -- and I agree with the number; thank you.

But of that, most of that is, of course, sludge curies. Since about 2008, of course, we've been processing salt and probably have somewhere in the neighborhood of 400,000 curies of that 37 million that is also from salt.

DR. MANSFIELD: Yes. But just that -- that's several million gallons, I suspect. That's several compliant tanks, so that's pretty good.

That's all I have, Mr. Chairman.

DR. WINOKUR: Let me ask this question. You said a couple of times that ARP/MCU -- I think you might have said it in your comment, Mr. Spears -- allowed you to increase the available Type III tank space, and yet in discussions we've had with Savannah River Remediation, I didn't think that was the case, that you were obviously processing waste with ARP/MCU, but it really wasn't significantly increasing the Type III available tank space. Am I misunderstanding that?

MR. SPEARS: I think perhaps, Mr. Chairman, we're both correct, SRR and yourself, in that the gain in tank space is not altogether apparent.

As I mentioned earlier, we utilize Type III tank space more or less as a commodity. It's something that we gain but then we utilize in order to be able to move waste out of old-style tanks and into the new-style tanks. Basically, if it's salt waste, so-called unzip it or prepare it for transfer to treatment facilities like ARP/MCU and on to Saltstone and then preparing sludge from those old-style tanks for feed to DWPF.

So as we gain that space, we utilize it by basically taking the waste out of the old-style tanks and moving it to the new-style tanks.

While we've gained some space, the amount -- the significance of that is not altogether apparent, because we tend to use it as a commodity.

DR. WINOKUR: So you are using it operationally, but you're not really increasing effective Type III tank space. I guess that's my understanding.

What I'm trying to get at is, are you comfortable with the risk associated with the amount of Type III tank space you have right now in the Tank Farms?

MR. SPEARS: Yes. I think -- comfort is a relative thing. We want to basically make progress in removing, treating, and dispositioning waste. We'd like to continue to see that progress accelerate.

Part of the reason is, obviously, because of the risk that that mobile source term in our tanks poses to the public. Now, as you mentioned, and correctly so, and as Mr. Ogg mentioned in his opening statement, the fact that we have that mobile source term and that we have -- you know, we don't have -- we have operating space that I believe is sufficient to minimize that risk at the time. Our goal is to continue to process waste, get the waste out of the environment as quickly as we possibly can and, at some point, begin to turn the corner on gaining space.

Now, let me also say that as we -- I want to clarify, because we believe we have sufficient space. Okay? And I believe that as we go through the life cycle of the Tank Farm, for much of that we'll maintain sufficient space for operations, but we won't gain excessive space, and that is that beyond necessary for what I consider to be safe operations, as well as to have that emergency space, should we have a tank leak, because as we close old-style tanks, as we transition then from that, our goal will be to empty, clean, and close new-style tanks.

And, of course, as we empty a tank and as we close that tank, that space won't be available for operations as well.

Now, I would see a margin gained, but I won't say that we're going to basically empty a lot of tanks and have them sitting there. Our goal is, once they're empty, to clean them and close them.

DR. WINOKUR: So in your opinion, or your judgment, 2 million gallons is sufficient to -- and you're comfortable with the risk associated with that.

MR. SPEARS: I am reasonably comfortable with that, but I would say we have some margin above that that we don't normally report that's in tanks that we utilize for processing and so forth in the Tank Farms.

We don't report that as available space, but it is in fact empty space, so we have a little beyond that what we normally report as available, useful space in the Tank Farms that we could rely on, should we have to. But I'm reasonably comfortable with the available volume that you mentioned there, the available space, the useful space in the Tank Farms, because it enables our continued processing while at the same time allowing us to empty, clean, and close tanks.

DR. WINOKUR: And the additional space you're referring to, that was not Type IV tank space; that's still other Type III tank space. Is that correct?

MR. SPEARS: Yes. It is other Type III tank space.

DR. WINOKUR: Okay. And, Mr. Olson, you have a comment?

MR. OLSON: If I could add one item to that, the technical risk and risk involved in Tank space management is a constant item of attention. Terry [Terrel Spears] and I co-chair a risk management board that meets monthly in that regard.

And I would tell you we do have another decision point coming up, as we do periodically. Mr. Ogg mentioned operational flexibility with tank 50. Tank 50 will be available, mechanically, to put back into high-level waste service, if we so chose to, this coming January or February.

We're choosing today, however, for flexibility to keep it used as a decontaminated salt solution collection point ahead of Saltstone, because Saltstone today just has in front of it a 4,000-gallon feed tank, so not much capacity between it and Tank 50.

Recovery Act is putting in place two 60,000-gallon tanks in front of Saltstone. They'll be ready about the same time as Tank 50. So, again, it will be a conscious choice: Are we okay with where we are relative to tank margin, or do we think it's appropriate to put that Tank 50 Type III Tank into that margin relative to tank space?

That's an ongoing thought process, decision-making process we go to on a continuum.

DR. WINOKUR: All right, Mr. Bader?

MR. BADER: Always interesting to talk about tank space. Let me give you a variant on that. You've decided not to work on Tank 48 to add to that tank space. For some period of time you've looked at alternatives.

As part of that process, have you looked at what risks there might be to simply leaving Tank 48 with its contents untouched for what I would have to say at this point is an undefined period of time?

MR. SPEARS: Yes, sir. We have looked at that, and we're continuing to look at options for remediating Tank 48 as well.

And I'd like Mr. Olson to address the question specifically, if you don't mind.

MR. BADER: Okay.

MR. OLSON: Your question was specifically what are the safety risks inherent --

MR. BADER: Yeah.

MR. OLSON: -- in leaving Tank 48 in as-is condition.

MR. BADER: It's going to continue to sit for an undefined number of years. Have you looked at the risk of allowing it to do that with the contents from --

MR. OLSON: Yes, we have. It is covered within our safety basis. When I'm finished, I'll let Michael Mikolanis expound upon that.

We manage the chemistry within the tank. It is a stainless steel tank that it's resident in. It is not emitting benzene at any measurable quantity at this point relative to organic management. And the source term is one that is manageable in that -- the state that it's in.

So it is safe as is. It's being managed safely within the safety basis and could stay resident that way for a lengthy period.

Michael [Michael Mikolanis], you want to --

MR. MIKOLANIS: Sure.

Okay. To give you a little bit more detail regarding that, the controls that were in place for the operation when the in-tank precipitation process was going to work are still in place in the Documented Safety Analysis [DSA], so we still have the inerting capability; we still have the monitoring for flammable gas capabilities.

The larger risk due to just leaving it to store in the tank would be the degradation of the tetraphenylborates in the tanks, and we're not seeing a lot of that in the -- in this gas samples that we have taken.

The structural integrity of the tanks. The tank is still under the structural integrity program for the site, so its chemistry control is still maintained.

It still gets the structural integrity inspections, which includes visual as well as ultrasonic inspections that measure the thickness of the tanks.

And those two programs have shown us that over the years, although the tanks were designed with a 40-year, 50-year lifetime, there has not been any significant degradation of the -- or thinning of the tank walls due to the general corrosion.

The phenomenon that you alluded to earlier, some of the opening remarks of cracks and some of the tanks have been cracked -- the phenomenon associated with that is well understood from the initial fabrication process, and those types of cracks are not present or those types -- those types of manufacturing issues were not associated with Tank 48.

DR. WINOKUR: Was it the Department's decision at this time to not pursue cleaning out Tank 48? Was that your direction to the contractor?

MR. SPEARS: Yes, sir. First -- our first step was to ask Savannah River Remediation to evaluate, given the circumstances today, progress that we've made in the Tank Farms, as well as our system planning aspects, technology development, and other factors. Go back and take a look and see what alternatives might exist today, given those circumstances, that might be advantageous to us to shift to or not for remediation of Tank 48.

So we asked for a recommendation first, received that recommendation from our contractor some time back, and based on that, have evaluated that and have determined that there are feasible alternatives that look like make good sense from the standpoint of economic resource stewardship, as well as from a standpoint of availability of tank space and ability to continue on our tank waste treatment mission that it would make sense to shift to.

So we have in fact provided direction to SRR to suspend the Tank 48 fluidized bed steam reforming project at this time, and we are now embarked on looking at and maturing particularly an option on chemical destruction and with a sort of a backup technology of direct vitrification of the waste from Tank 48.

And we can speak on those in more depth if you'd like, sir.

DR. WINOKUR: Do you have any sense for me -- and I know we don't have a lot of time left in the hearing -- as to the Department, I guess, begins one of these projects, and they have Tank 48, and they look at one particular process and they look at, I don't know, chemical -- there was a process, and then there was the other approaches, steam bed reforming, and now a new process.

Why so many false starts? Why so many attempts at cleaning this tank? Why is it so difficult to say, "We're going to clean this tank; this is the technology we're going to use. We're going to mature it and execute?"

Because, you know, it's been -- I'm sure it's been frustrating for you that this tank is still in service, and there have been so many attempts to clean it. Can you give some insight to that?

MR. SPEARS: I agree. It is -- it has been frustrating; we have had a number of starts and stops, but I think the interest here is in doing the right thing for the taxpayer and for the Tank Farm and in order to basically support our mission in the most optimum way possible, using what I see as scarce resources.

So I would like to think that we have utilized good systems engineering judgment with every one of those starts and stops; that they weren't frivolous starts and stops.

And I think -- I can't -- I can't -- I haven't analyzed all the conditions that kind of led us to the number of approaches that we've taken to deal with Tank 48, but I think with time, circumstances change.

And so I think it behooves us periodically to go back and look at what our alternatives are and make sure we are on the right path.

In fact, if you look at our directive system and in particular DOE Order 413.3(B) [Program and Project Management for the Acquisition of Capital Assets], it leads one to those constant -- I would say constant -- periodic alternatives analyses.

In fact, at every critical decision (CD), you know, you're pretty much driven to an alternatives analysis to verify that you remain on the right path.

We simply have executed that, and particularly in this particular case with Tank 48. Prior to CD-2, we look at alternatives, and we've determined there are very highly feasible alternatives that would suggest that we can remediate Tank 48 using technology that's emerging and do it in a manner that's much more economical than building a $180 million fluidized bed steam reformer.

So that's the basis for why we've changed directions in this particular case, and I believe it was based on fairly sound engineering study and judgment.

DR. WINOKUR: Dr. Mansfield, you have a question?

DR. MANSFIELD: One short one. Is it solely a question of this has turned out to be too expensive; go find something cheaper?

MR. SPEARS: No, sir. It was not solely a question of finances; however, you know, resources are very scarce and becoming scarcer, so it certainly was a factor. It was a key factor, but it was not the only factor.

DR. WINOKUR: I think we have a couple of questions remaining. I'll ask one of them.

Can you talk a little bit about the risk of seismically induced waste explosions that could exceed the evaluation guideline and where you are in that analysis right now about what the potential off-site dose consequences are in that scenario?

MR. SPEARS: Yes.

Wyatt [Wyatt Clark], could I call on you to respond to that?

And then perhaps, Michael [Michael Mikolanis], you could comment on that from a DOE perspective as well.

MR. CLARK: Chairman, as with everything, we start very much with an ISM (Integrated Safety Management) approach of looking at hazards. In 2002, we developed a DSA that clearly looked at that natural phenomena and then from that established a protocol to mitigate, make sure that we have identified the appropriate components that we needed to have structural integrity, laid in the processes to ensure that we control flammable vapor within the tanks, laid together a emergency preparedness program to respond to it, and then had post-seismic activities that we would take following that kind of activity.

Last year, the Department of Energy asked us to go one step further and take that analysis and do a more thorough job, look at the conservatism, try to establish an approach that takes into account the realism of our real waste in the facility.

And we're coming close to the completion of that. In fact, it will be issued in the July-August time frame. Your representatives have been part of watching us go through that and will be available for you at that time. We'll submit it to the Department for approval.

DR. WINOKUR: Do you know what the number is today?

MR. CLARK: Yes, I do, sir.

DR. WINOKUR: What would that be?

MR. CLARK: As earlier, Mr. Ogg stated that it would exceed off-site guide of 25 rem. Today our response -- the analysis that we've laid in, considering some conservatism, getting to a realistic evaluation, taking into account the material that's in our tanks, we have significantly reduced that.

DR. WINOKUR: Are you committed to driving that to a small fraction of that 25 rem evaluation guideline?

MR. CLARK: We're committed to giving the appropriate value. So as we have gone through this review, we're going to give it the right analytical review to ensure that what we present is correct. Giving our conditions, we're going to report the correct value.

DR. WINOKUR: Let's say you report the correct value and it's 23 rem. Would you continue to apply controls to reduce that?

MR. CLARK: I can assure you that our initial analysis is far from that, so the hypothetical question you're presenting to me is much -- is much further from what we're dealing with.

DR. WINOKUR: So, can you give me a sense, again, of what you -- where you think you are today. You're saying it's much lower than 23 rem. What do you think it is?

MR. CLARK: We are in the neighborhood of one to three rems.

DR. WINOKUR: One to three rem.

MR. CLARK: Yes, sir.

DR. WINOKUR: Thank you.

Do you want -- okay. Dr. Mansfield has a question.

DR. MANSFIELD: I just want to raise a complication that I know we'll deal with. The only control you have for a seismically induced tritium container -- a fire affecting tritium containers -- is the emergency preparedness program.

Without any mitigation, you have estimated that has an off-site dose of 6200 rem, so you're counting entirely on the emergency preparedness program. We're going to be talking about that very soon, but just to show you how important this is, it's the only control you have, as I understand it, and it depends on your emergency preparedness program working; in other words, the firemen getting there in time.

MR. SPEARS: Dr. Mansfield, that's not within our area, within liquid waste.

DR. MANSFIELD: No, I know, but it's --

MR. SPEARS: But I understand your point. I mean, it is a very important area.

And, Michael [Michael Mikolanis], would you like to add anything? I saw you trying to add a couple of things just now. If you'd indulgence us, sir.

MR. MIKOLANIS: Yes, sir.

Mr. Chairman, you were asking some questions to get a sense of how we've reduced that risk, and I would like to expand on a couple of points.

When the Department first accepted the accident analysis that where we concluded the off-site consequences to the public could exceed 25 rem, that was predicated on a couple of items: one, that we believed the -- that we had the ability to prevent it with portable ventilation and that there was a lot of conservatism in the -- in the analysis.

When -- as we were challenged to go relook at and justify that, the commitment we made then was to go, "Okay, let's prove that that conservatism was really there." And that's the reanalysis that Mr. Clark was talking about.

We've done two different analyses that take a look at what the likelihood of the -- what the consequences would be from a tank deflagration. We took a single tank with a bounding supernate, and that gives you the couple rem range that Mr. Clark referred to.

We also then did some sensitivity runs, assuming that some of the tanks cannot deflagrate or explode following a seismic event; there's just not a flammable content in the tank to do that.

Taking the remaining tanks that do or could become flammable, that have some stored flammable gases with it, we ran those up to deflagrable or detonable ranges to get a sense of what would happen, what would the concentration be, and then ran some sensitivity parameters such as what would happen if you changed the height to get them to detonation levels.

And the total dose for the Tank Farm then would only be if all the tanks that could deflagrate would deflagrate, it was only a couple rem, using nominal -- using current -- today rates and material risk within the tanks themselves.

So the risk is much lower, even more favorable than we had hoped for when we first accepted the greater-than-25-rem for a single tank exploding.

DR. WINOKUR: All right. Thank you.

Mr. Bader, do you have a final comment?

MR. BADER: Again, looking at this as a system, the entire Tank Farms, waste treatment system, if you will, and looking at -- you've got a mix of very old facilities and new facilities coming on line, including SWPF, that are going to be relied upon to empty these tanks in a reasonable period of time.

Have you done -- you do integrated system planning. Have you looked at the risk of this integrated system as a whole and looked at things like what happens if SWPF is delayed a year or two years, or what happens if the evaporators fail, and looked at the system as a whole from a risk point of view?

MR. SPEARS: Yes, sir. We absolutely have. Some of those studies regarding sensitivity, for example, to SWPF viability and when it starts up, we incorporate directly into the system plan, but we also have a very robust, I believe, risk management process within the liquid waste program at Savannah River Site.

We actively manage that, as Mr. Olson mentioned to you; we have frequent interactions between contractor and Department of Energy, where we review specific actions that should be underway to address risk.

We have looked at specific things such as failure of key facilities in our flow sheet and their impact on our ability to successfully implement our missions and what is necessary to mitigate those risks, to allow us to manage those risks down to some minimal level.

So the short answer is, yes, we do look at that; we look at it in a variety of ways, particularly through our risk management program. But I would like also to have Mr. Olson comment from his perspective, if you don't mind.

MR. BADER: Before we ask Mr. Olson to do that, let me go one step further with that question and say, have you looked at that risk management plan given the dramatic increase in tempo of operations that will be required when Salt Waste Processing Facility comes on line?

MR. OLSON: Yes. Part of the annual update to integrated system plan is an annual renewal and refreshing of all of the program risks resident in that planning assumption basis, and it's resident in infrastructure's ability to get waste from one facility to the other, influent and effluent, the ability of the -- or the capacity, reliability, predictability of each of the elements, each of the machinery that supports it, whether there are spare parts available, redundancy available, and that kind of thing; and whether the chemistry is compatible between the facilities to do that.

And Chairman Winokur's comment earlier about Saltstone will be a difficult row to hoe, because it has yet to prove sprint capability on a sustaining basis. We still have a few years to demonstrate that. The lessons learned from MCU/ARP that are fed to SWPF so it can attain its design capacity.

And the ability of DWPF to handle the cesium effluent from SWPF, we're still working through the impacts of that. And then also resident in that will be the small-column ion exchange supplemental salt treatment and its influents and effluents and infrastructure on the Tank Farms to support it.

All those risks are identified, handling strategies put in place, pre- and post-mitigation consequence understood, and that's where, in our risk board we're applying our energies and efforts and finances, to make sure that that integrated sheet does work at the max rates when 2014 or -15 arrives.

MR. SPEARS: May I add one thing as well, sir?

Mr. Bader, one other thing I wanted to add to what Mr. Olson said was that is a robust process. As you know, we're currently operating under our system plan revision 16 that was issued late last year.

That is the accelerated pace that we envisioned for the future, so it represents that. We've just issued risk management plan revision 7, which is coincident with our system plan rev 16.

And we'd be happy to dialogue that and to discuss further in detail with your staff as time permits later our system plan rev 7 [sic] and how it integrates well and covers the activities that you're suggesting with respect to our accelerated program.

MR. BADER: Have you also looked at the next step, which is, are you going to have sufficient trained, competent people to operate at that higher level?

MR. SPEARS: That is certainly our intent, and I would like Mr. Olson to answer that.

MR. OLSON: One of the few back items from the ISMS (Integrated Safety Management System) revalidation as a new contractor that was done in the last two years, reinforced by the VPP certification that Mr. Spears talked about, was a challenge to us to look at the demographic of our workforce and that we were pushing average age 55 to 56 and worrying then about attrition and being able to staff the watch bill when you got to those high-capacity runs in 2015.

We hired in 2010 roughly 120 workers, different age demographic than I have today, and are putting them through their two-year qualification cycle, get them proficient.

So we believe we not only will have the numbers, but we'll have the ability to deal with attrition, so I've got a qualified, capable, proficient, and with the numbers, a workforce to manage the next decade of high-level waste work.

MR. BADER: My last question is directed back to Mr. Spears. Are you comfortable with the risks that are -- you've seen in this risk management plan 7?

MR. SPEARS: Yes, sir, I am.

DR. WINOKUR: Well, I would end with a final comment before we say goodbye and dismiss this panel, and that is to be sober about it, you've removed 38 of 350 million curies to date, and you have a very challenging task in front of you.

You say you're going to learn lessons from

ARP/MCU that are going to feed into SWPF. It's got to work, and you don't really have it demonstrated yet to work effectively.

Saltstone maybe -- you don't really know what the reliability of that system's going to be. It's 90 percent when it's running, but if it has starts and stops, that can be problematic.

The evaporators have to work. A whole lot of things have to work very well for you in the future to really finally turn the corner and get away from the fact that you only have 2 million gallons of available tank space in Type III tank space.

So we're hearing a lot of encouraging things, and I think that's good, but I'm telling you, to -- just to be, as I said, sober about it, I think that is -- there is a fair amount of risk here, and concern about whether or not you're really going to be able to really turn that corner you want to turn. And we're certainly very committed to seeing you do that, and hopefully you're going to continue to apply the resources necessary to make that a reality.

You have a final comment, Mr. Spears?

MR. SPEARS: I just wanted to thank you for the opportunity today, Mr. Chairman, to speak with you and, on behalf of the panel, thank you very much.

DR. WINOKUR: Thank you, Mr. Spears, Mr. Mikolanis, Mr. Olson, Mr. Clark, and Mr. Dickenson. Thank you, and we'll begin with the next panel immediately.

Thank you.

(Pause.)

DR. WINOKUR: We're going to resume this public meeting and hearing to discuss the topic of emergency preparedness.

At this time, I'd like to introduce Mr. Mark Sautman, who will provide testimony from the Board's staff.

Mr. Sautman, I will accept your full written testimony into the record. Please summarize your comments in ten minutes or less.

MR. SAUTMAN: Good afternoon, Mr. Chairman and Members of the Board. For the record, my name is Mark Sautman. I am one of the Board's Site Representatives responsible for overseeing the Department of Energy's activities at the Savannah River Site.

I would like to submit my full written testimony for the record and present an abbreviated version.

In this meeting, the Board is considering the state of emergency preparedness, or EP, at the site. I will discuss the Site Representatives' perspective on how well DOE has prepared for natural phenomena hazards.

While previous Board concerns included incident scene response and drill scenario quality, site senior management has made significant improvements in the program recently.

The existing EP program also continues to adequately prepare workers to respond to anticipated events like spills, medical emergencies, and fires, as well as more unlikely events like explosions.

In May 2010, the Site Representatives began to review DOE's preparations for natural phenomena hazards, or NPH, including earthquakes, tornadoes, and hurricanes.

While the seismic risk at the site is much less than that around the Pacific Rim, earthquakes are still a credible accident for South Carolina. In 1886, Charleston experienced an earthquake that caused structural damage as far away as central Alabama and Ohio. This spring also demonstrated the hazards posed by tornadoes to the southeastern United States.

The SRS Documented Safety Analyses include credible NPH design basis accidents that have significant dose consequences to the site workforce and the public.

Seismic events can damage structures and vessels that are not seismically qualified, causing a loss of confinement or an exhaust stack to topple onto a location storing radioactive material.

Seismic events can also damage electrical equipment. This can lead to a fire that may be harder to extinguish if the fire suppression or water supply systems are also damaged.

For example, Building 235-F is an inactive facility with a significant inventory of plutonium-238 in its hot cells. This material is very respirable, and minute amounts can cause a large dose. A seismically induced fire at 235-F could result in large doses to the construction workers at the nearby Mixed Oxide Fuel Fabrication Facility or the Waste Solidification Building unless adequate controls are in place.

At the Tritium Facilities, the reinforced steel encased safes that normally protect tritium containers against impacts by falling structures are vulnerable to tornado and seismically induced fires.

The EP program is currently the only control credited in the Documented Safety Analysis for a seismic event plus fire at the Tritium Facilities.

A seismic event can also cause a loss of power. If the fuel tank for the emergency diesel generator is not seismically qualified, this can cause a loss of ventilation to storage tanks and process vessels like those in H-Canyon.

When radioactive materials are in proximity to water or other organic material, the radiation can generate hydrogen and other flammable gases. Hydrogen is extremely easy to ignite. A static spark from a person is sufficient.

As the Fukushima reactors demonstrate, hydrogen gas can be ignited even during an electrical blackout. The subsequent deflagration or detonation may then release radioactive material present in the tank or vessel.

One of the unique challenges of NPH is that they have the potential to affect multiple facilities simultaneously, as well as the site's infrastructure. This can dramatically increase the radiological consequences and severely strain the available emergency response resources.

A loss of power, fire water supplies, communication systems, or the presence of damaged roads and support facilities could slow down emergency responders and inhibit the communication of protective actions across the site.

The staff completed our initial review last summer and identified four vulnerabilities. Our first concern was that DOE was conducting extremely few emergency drills and exercises anymore that focused on the recovery from credible NPH events.

While tornado and seismic scenarios were frequently conducted in the 1990s and early 2000s, they all but disappeared from the site-level exercises after 2002.

While some facilities continued to perform small-scale NPH drills, many of these were focused on just sheltering or evacuating, versus recovery from the event. Meanwhile, H Tank Farms had not practiced deployment of their emergency purge ventilation equipment since 2003.

DOE stopped conducting drills for inactive facilities like 235-F, although the hazard did not vanish once daily operations ceased.

A second issue was that the emergency procedures and drill scenarios did not acknowledge the NPH events can impact multiple facilities. While the prescribed protective actions may make sense in isolation, this can lead to situations where the response actions are incompatible.

For example, H-Canyon, H Tank Farms and the Tritium Facilities are located close to each other. DOE needs to ensure that the emergency procedures are integrated so that the protective and emergency response actions taken by one facility would not cause workers to inadvertently enter the plume from another facility.

Complicating matters is the fact that the

Savannah River Site is more complex than it used to be. NPH events have the potential to affect facilities that are operated by multiple contractors.

New facilities like the Mixed Oxide Fuel Fabrication Facility, the Waste Solidification Building, and the Salt Waste Processing Facility are being built next to operating nuclear facilities.

At the time of our review, DOE was not conducting any drills that involved the multiple contractors or that involved both operating facilities and construction sites.

A third concern was the lack of attention paid by DOE to recovery planning and implementation. This concern applies to all types of emergency scenarios, not just NPH accidents.

As recent events like the Deepwater Horizon oil spill and the Fukushima reactor accident have shown, the development and implementation of an effective recovery plan can be much harder than the initial response.

The few existing recovery plans at SRS have limited scopes. Site drills and exercises usually terminate once the immediate actions to stabilize the incident scene have been completed or the Emergency Director approves a recovery plan outline.

While some of these recovery plan outlines include proposed actions, others are not much more than a plan for a plan. The one exception to this was a three-day emergency exercise in 2002, where a recovery plan was implemented along with a reentry.

The response to a 2010 leak of plutonium-238 contaminated liquid from a drum at the Solid Waste Management Facility illustrates the challenges that even a relatively small event can pose.

Initial responders had to twice evacuate the incident scene because they lacked the proper equipment and training. The facility was unable to effectively respond to the spill for several days, until the necessary equipment and supplies were located and additional training was conducted.

The Board's staff had several discussions with DOE after the event, and the contractor is now maintaining a core group of facility emergency responders with the necessary training and keeping a trailer full of emergency personnel protective equipment and contamination control supplies.

The Board's staff believes that DOE would benefit from having site-wide plans for dealing with large NPH events. The emergency response organization also needs more opportunities to practice the development and implementation of other recovery plans.

The fourth staff concern is that the emergency scenarios rarely acknowledge that the site infrastructure may be damaged by an NPH event. Where credible, some of the NPH scenarios need to reflect the potential evacuation of control rooms or the loss of key communication systems, power, and other infrastructures.

In general, the DOE and contractor response to our observations has been positive. Our discussions have not focused on whether these vulnerabilities should be addressed, but on how best to have the various federal and contractor organization resolve these common EP issues.

Drills that had lapsed for years at 235-F and Tank Farms were resumed by the contractors last year. Recent drills at H Tank Farm simulated the loss of the primary control room.

At this time, major efforts are ongoing at Tank Farms, H-Canyon and HB-Line, and the Tritium Facilities to develop credible seismic drill scenarios and train the facility staff on the expected response action.

DOE plans to conduct graded drills at both the facility and area level. In April, the contractors in F-Area worked together to conduct a coordinated drill that involved multiple operating and construction facilities.

While the above initiatives are encouraging, other issues need more attention. DOE's efforts on recovery plan have mostly been limited to seismic events. While DOE recovered the risk -- reduced the risk of a Building 235-F stack collapse by shortening the stack, DOE suspended efforts to further reduce the risk by removing the plutonium held up in the shielded hot cells.

In light of the Japanese earthquake, DOE also has launched a complex-wide initiative to examine beyond-design-basis accidents. This effort is still in the data-collection stage, so it is too early to tell if this initiative will result in any changes at SRS.

Today, one of our biggest concerns is whether DOE will have the necessary resources to improve the EP programs and maintain the fire department's health. Budgets are tight today and expected to get tighter in the future.

The emergency management organization is already lean. While the missions in parts of the site have declined or ended, the mission scope in other parts of the site is increasing, as shown by the construction of the Salt Waste Processing Facility, the Waste Solidification Building, and the Mixed Oxide Fuel Fabrication Facility.

Firefighting at the site is challenging and physically demanding due to the site's size, the size and the height of its nuclear facilities, and the hot, humid weather.

The Board's staff is interested in hearing today how DOE plans to maintain adequate staffing to conduct the required drills and exercises, improve the EP program, and ensure that the size and quality of the fire department are adequate to support a prolonged response.

In 2009, the Board's staff reviewed the site's fire department. In the Board's letter to DOE, the Board noted that all of the major fire equipment at the site had exceeded the normal 15-year life expectancy. DOE took action to address this concern, and two new fire engines arrived on-site earlier this year, replacing engines that were 21 and 32 years old. Unfortunately, plans to replace the other 16- to 21-year-old fire apparatus have stalled.

This completes my prepared testimony. I would be happy to answer any questions from the Board.

DR. WINOKUR: Thank you, Mr. Sautman.

Do the Board Members have any questions for Mr. Sautman?

DR. MANSFIELD: Not at this time.

MR. BADER: No.

DR. WINOKUR: Hearing none, thank you very much, Mr. Sautman.

I now would like to invite the panel of witnesses from DOE and its contractor organizations for the topic of emergency preparedness to take their seats as I introduce them.

Mr. Kevin Hall is the Deputy Manager of DOE's Savannah River Site Office.

Mr. Michael Mikolanis is the Acting Chief Engineer at DOE's Savannah River Operations Office.

Mr. Robert Edwards is the Director of the Office of Safety and Quality Assurance at DOE's Savannah River Operations Office.

Mr. Geoff Reynolds is the Deputy for Environmental Safety, Health, and Quality at Savannah River Nuclear Solutions.

Mr. Lee Schifer is the Director of the Tritium Integrated Supply Chain at Savannah River Nuclear Solutions.

Mr. Wyatt Clark, welcome back as the Interim Operations and Deputy Project Manager at Savannah River Remediation.

Mr. Fred Dohse is the Executive Vice President and Chief Operating Officer at Savannah River Nuclear Solutions.

And Mr. David Freshwater is an Emergency Management Specialist at the Office of Emergency Management and Policy for DOE.

Do any members of the panel wish to submit written testimony at this time?

(No response.)

DR. WINOKUR: Seeing none, as before, the Board will either direct questions to the panel, or individual panelists will answer them to the best of their ability. After that initial answer, other panelists may seek recognition by the Chair to supplement the answer as necessary.

If panelists would like to take a question for the record, their answer to that question will be entered into the record of this hearing at a later time.

With that, we'll continue with an opening statement by Mr. Mikolanis.

Mr. Mikolanis, we'll accept your written testimony into the record, so I please ask -- I ask that you please keep your opening statement to less than ten minutes. Thank you.

MR. MIKOLANIS: Yes, sir. Thank you.

Good afternoon, Chairman Winokur, other Members of the Defense Nuclear Facilities Safety Board, the Board's staff, and members of the public.

We appreciate this opportunity today to discuss with you the status of emergency preparedness at the Savannah River Site.

Emergency planning for our nuclear facilities begins with design and continues through facility operations. Facilities at the Savannah River Site are designed and built to performance criteria to help ensure that emergency situations do not result in hazardous material releases that may present a significant danger to the surrounding population.

As the Board is very familiar with the requirements associated with nuclear facility design, I will summarize some of the significant points for members of the public present at this meeting.

During design, potential nuclear facility hazards are analyzed and, where possible, minimized or eliminated entirely. Industrial hazards such as high-pressure gas cylinders are managed by invoking commonly accepted industry standards. The remaining hazards are then conservatively analyzed to identify those that may pose a significant risk to either the public, workers, or environment.

For these hazards, engineers design safety features to minimize or eliminate them entirely, and additional design and quality assurance requirements are specified to ensure their reliable operation. In short, we design to minimize or prevent release of materials.

Once safety systems have been identified and operability conditions defined, emergency preparedness programs are then established to ensure the Savannah River Site is prepared to respond to any disaster to protect our workers, the public, and the environment.

These programs include measures such as the development of facility emergency response procedures and the establishment of command and control functions necessary to guide facility and site-wide response to abnormal events and operational emergencies, regardless of the source or initiating event.

The Savannah River Site emergency management program is based upon the fundamental concepts of the National Incident Management System and the guiding principles of Integrated Safety Management.

The National Incident Management System is implemented through our internal command and control structure, ensuring that all responders, whether site personnel, responders from surrounding communities, or assets dispatched under the national response framework, can work together safely and effectively.

All contractors on-site use the guidance provided in the site's emergency plan as the basis for their response actions. To that end, all site personnel are trained to the same basic set of response techniques.

These techniques allow responders to take action based on the general release mechanism instead of the initiating event. Responders, particularly those in command and control positions, are encouraged to use their own judgment and experience to adapt action plans to best utilize the information available at that time.

This flexibility is a key aspect of our emergency management program and allows us to take appropriate actions in establishing site-protective actions, mitigation, and recovery from an event.

It also allows the emergency response organization to handle a wide range of events involving chemical spills and radioactive releases which may be caused by process upsets, security threats, or natural phenomena hazards or other events.

The requirements associated with the National Incident Management System program are documented in the site's emergency management plan, which has been evaluated by external assessments as being fully compliant with the requirements of DOE Order 151.1C. [Comprehensive Management System]

The DOE order sets requirements along three basic functions: planning, preparedness, and response. The planning function is accomplished by identifying the hazards present and establishing a program suitable for the level and the nature of hazards present.

A hazard survey is performed for facilities with chemical or radiological hazards and, depending on the outcome of that hazard survey, an emergency planning hazards assessment may be performed to qualitatively evaluate the possible release paths. This then becomes the basis for our emergency planning actions for the affected facility.

It's worth noting that there are significant differences between the emergency planning hazards assessment that I just mentioned and the previously mentioned hazards assessment performed for design.

Whereas a hazards assessment evaluates a facility to identify the controls necessary to prevent or safely mitigate a radiological or chemical release, the emergency planning hazards assessment evaluates the facility with the safety controls in place.

The emergency planning hazards assessment then postulates an initiating event with a failure of the system, noting that these systems are designed to remain operable during those design basis emergencies, in order to create a release that tests the ability of the facility operators and the command and control systems to respond to such an emergency.

Preparedness is accomplished by ensuring that the plans and procedures adequately guide the response to emergencies, primarily through training program and conducting drills and exercises to test the plans, procedures, and capabilities of the emergency responders.

As implemented, the current program is consistent with DOE policy and requirements. Drill scenarios are developed to evaluate the response efforts of one major facility at the site, versus exercising several facilities simultaneously.

Although this has been a longstanding practice at SR [Savannah River] and other DOE sites, we recognize this practice needs to be reevaluated as part of our ongoing efforts to continually improve the site's response capabilities.

Finally, response includes the actions taken during an emergency to resolve the situation, as well as those recovery and reentry actions needed to return the affected area to normal operations.

Drills at both the site level and the facility level ensure facility operators and personnel assigned to emergency response organization command and control functions remain proficient in the actions necessary to safely respond to an emergency.

We recognize that natural phenomena hazard events present a unique challenge to emergency preparedness. Through implementation of the emergency response plan, the Savannah River Site is prepared to respond to disasters to protect workers, the public, and the environment and return the facility or site to a safe condition.

Although our plan is fully compliant, we have identified a few areas we are evaluating for continuous improvement.

The first I'd like to talk about is developing facility drill scenarios that more fully address situations where a single event such as earthquake could affect multiple systems.

Such scenarios train operators to respond to multiple problems within a facility, such as a fire concurrent with a chemical spill.

The second point I'd like to discuss is defining and making better use of facility drill anomalies that simulate conditions that might be encountered during a natural phenomena event, such as the loss of site communications or a radioactive release from a nearby facility that affects -- outdoor actions that have to be taken by the facility being tested.

And finally, I'd like to mention expanding the exercise of command and control functions to address coordination of incidents at multiple facilities which involve different operating contractors.

To summarize, although implementation of the

Savannah River Site Emergency Response Plan is fully compliant with the DOE requirements, we have identified opportunities for continuous improvement of our program.

These improvements would make consistent use of drill sets to simulate more than one system failure, as well as anomalies that are representative of conditions that may be encountered during a natural phenomena event.

Furthermore, we are closely monitoring headquarters policy-making action in response to the reactor accident at Fukushima, and we are evaluating exercising command and control functions for multiple facilities and contractors.

With this said, Mr. Chairman, the panel is ready to receive comments and answer questions from the Board. Thank you.

DR. WINOKUR: Thank you, Mr. Mikolanis. With that we will continue with questions from the Board Members to the full panel, and we will begin, once again, with Mr. Bader.

MR. BADER: Would you start out, Mr. Mikolanis, by summarizing what, according to your Documented Safety Analysis, would be the impact to the public, site workers and the facilities from a seismic event that involved Tank Farms, Tritium Facilities, H-Canyon, 235-F, and so on, and what controls you have in place to address the hazards.

MR. MIKOLANIS: How much time do we have to answer that question, sir?

(General laughter.)

MR. BADER: Short answer, please.

MR. MIKOLANIS: The short answer for the facilities you asked for, the Tank Farms, as we discussed during the last panel, our current safety analysis says the public impact would be greater than -- would be greater than 25 rem. Our preliminary analyses show that it will be significantly less for a single-tank, or even multiple-tank, explosion.

When you add it all together for the current seismic releases, it'd be about 18 rem for a seismic event in the Tank Farms. The site worker impact and facility worker impacts are less than 100 rem.

For the H-Canyon, I believe that was one you mentioned --

MR. BADER: Yeah.

MR. MIKOLANIS: -- it -- the mitigated dose is less than a rem, .36, and the worker doses are less than 100 rem as well.

DWPF, I believe was -- I didn't write them all down. The Defense Waste Processing Facility, the mitigated dose is 2.1 rem, and the facility worker and colocated worker are less than 100 rem as well.

And with respect to tritium, I would like to ask Mr. Lee Schifer to answer that after I finish with the other systems that you've discussed.

Without going facility by facility -- and we can submit a detailed response for the record, if you would like, Mr. Bader --

MR. BADER: I would appreciate that.

MR. MIKOLANIS: I will do so. I will take that action.

In general, what these facilities rely upon in order to protect the public and the workers is -- are confinement systems and ventilation systems. Those are the primary ones. Fire control systems, where they're credited for putting out fires, and also as well many administrative controls, such as we discussed in the opening remarks.

The 235-F facility, the hazard analysis for that particular facility presumed a full facility fire which released the plutonium that Mr. Sautman mentioned. One of the safety programs we rely upon there was to deinventory the facility to the maximum extent possible, to remove that combustible materials in order to not have the full facility fire that the hazard analysis assumed.

I believe that would -- and any other confinement system, such as piping, vessels, those would be credited for maintaining their structural integrity during a natural phenomena event such an earthquake or a tornado or protecting the safety-related equipment by missile barriers during natural phenomena events such as a tornado.

DR. WINOKUR: I guess, Mr. Schifer, you're going to make a comment on the Tritium Facility for us, please?

MR. SCHIFER: Yes, sir. The mitigated doses for the Tritium Facilities for the off-site worker or the public would be less than 12 rem, for the on-site worker and the colocated worker is less than 100 rem.

As far as the controls for the facility, the primary control is the emergency preparedness program for the Tritium Facilities.

Obviously there are a suite of basic robust controls that we have in the facility, being the facilities themselves, fire protection programs, combustible control programs, radiological control programs.

We've talked somewhat about highly invulnerable encased safes, so there are many different robust pieces in the facility.

DR. WINOKUR: How does an emergency preparedness program get you from 6200 rem down to below

100? I mean, there are no engineering controls you're talking about. Is that correct?

MR. SCHIFER: True. I think if you look at the -- if you were talking specifically about the 6200, that's to the colocated worker. It's an extremely conservative bounding number for the Tritium Facility.

It essentially takes into account the maximum possible inventory of the Tritium Facilities. And let me back up just a little bit.

The Tritium Facilities is -- essentially we have five hazard category 2 facilities, three hazard category 3 facilities, all within about a 28-acre complex. For this bounding event I have an inventory for all of those facilities. It's about 40 kilograms of tritium.

My bounding event essentially is a seismic event followed by full-on secondary fire that would oxidize 100 percent of that inventory. We consider this extremely conservative and bounding.

If you look at what the facility has additionally, the main inventory centers in the Tritium Facilities are Vault 217-H, our 233-H facility. Both were designed to seismic specifications, when they were originally constructed, about .2 G peak ground acceleration.

Our Tritium Extraction Facility is a PC-3

[Performance Category-3] facility also, so they're expected to survive some levels of seismic activities.

We have robust containers. The individual containers for which we keep much of our inventory is safety significant, is robust. We have in our vaults highly invulnerable encased safes, as Mr. Sautman was talking about, that protects it from falling debris, from a stack fall of some sorts.

Then we have some programmatic features, which combustible control programs, radiological control programs, those different types of things.

If I start talking about the emergency preparedness program itself, we have changed, through the year plus, significantly. We've been working with the facility reps, both Mr. Sautman and Mr. Burnfield. We performed four NPH seismic events drill scenarios last year.

We've changed dramatically, after the Fukushima event, how we do drills within our facility. Primarily, before the Fukushima event, we would have a casualty in one of our main facilities.

We have three separate control rooms in our facilities, and we'd have one main casualty where all the other facilities would then respond to it.

Since that time, we've gone to more of the full-facility casualty event where you'll have multiple casualties in multiple facilities. We've gone through seven of those drills so far this year; we have nine more scheduled.

For the phases for the drills, if you want -- would like to know that, we've pretty much split them up into four. We started off with tabletops, with seminars, basically to bring all the individuals together, working on communication, working on resource management, allocation of resources to the individual facilities.

The second set of drills that we've gone through have been our simulator drills. We're lucky we have three separate simulators in the Tritium Facilities, so we can staff up our own control rooms in these separate simulators.

We will go through the full evolutions in those simulators that allows us to learn. All of this I consider just the basis of ISM. We are running through the drills, learning, then fixing them and changing them.

Second -- or thirdly, we will start coached drills, so we'll actually go down into the facilities within three weeks, is when we start the coached drills, and we'll run through four cycles of coached drills in the facility, making sure that we all understand our aspects and get the full facility response of our personnel.

Lastly, before the end of the calendar year, we will also have four graded drills, which is very similar, but you'll run through the evolution where there is no coaching, and it's how do you perform; "How do all the personnel in the facility perform; how do the individual facilities perform, and how does our facility emergency coordinator perform?"

So that's the basis for our programs. Kevin [Kevil Hall] --

DR. WINOKUR: So -- you want to make a quick comment, Mr. Hall, and then I'll finish up.

MR. HALL: Yes. Specifically, Chairman Winokur, you asked how the emergency preparedness program took us from 6200 rem colocated worker dose to a qualitative assessment of less than a hundred rem.

DR. WINOKUR: I did.

MR. HALL: We use -- our contractor does -- when they prepare their Documented Safety Analysis, the DOE Order Standard 2009 [DOE-STD-3009, Preparation Guide for US DOE Nonreactor Nuclear Facility DSA] and Guide 1189 [DOE-STD-1189, Integration of Safety into the Design Process]. That allows you to take -- to do a Qualitative Risk Assessment, and when we take into account in that Qualitative Risk Assessment, you take a look at those factors such as the robust containers that the tritium is stored in, the highly invulnerable storage mechanisms, the seismically qualified buildings at the time of design, the other features associated with the facilities, and then that qualitative assessment comes up less than 100 rem, and that's where we go from 6200 to less than 100 rem.

So the credited control in the DSA is the emergency preparedness program, but we're allowed by the standard and the guide to make a qualitative assessment of where we stand post-accident.

DR. WINOKUR: Can you provide an explanation of that for the record so we could just take a little closer look at it? We appreciate your comments.

MR. HALL: We'd be happy to do that.

DR. WINOKUR: Thank you.

Mr. Bader?

MR. BADER: I'll leave it to you who answers this, but what I'm looking at in the Tritium Facility is the container is designed to withstand the physical insult of the seismic event. It doesn't survive the fire. Is that a correct set of assumptions?

MR. HALL: It -- well, there is no container. There are thousands of containers, but that's germane to the discussion, because there's thousands of --

MR. BADER: Well --

MR. HALL: -- container's dispersed in a wide variety of rooms and buildings throughout the facility.

So we're talking really about separate facilities separated by air, geographic location, and different structures.

MR. BADER: But the container designed to survive the seismic event, wherever it's located.

MR. HALL: That's correct. It's a code-compliant vessel that we would expect would survive the seismic event.

MR. BADER: But not the insult of a fire --

MR. HALL: The specific --

MR. BADER: -- that would be involved.

MR. HALL: Depending on the specifics of the fire, so it would depend on the temperature, the duration, and how long it were exposed to it.

MR. BADER: When you submit this information for the record, I would appreciate seeing in there how all this training that you're going through stops those particular containers from being involved in the fire. I assume that's the assumption. Is that correct?

MR. HALL: No. The training that Mr. Schifer was referring to is that we're trying to make sure, in accordance with what Mr. Sautman discussed, in NPH space, if we're involved in a multiple facility accident at Savannah River Site, associated with an earthquake, tornado, et cetera, that we would be able to properly respond from an operations crew standpoint.

MR. BADER: But if you're breaching the containers, I'd like to understand how that --

MR. HALL: Yes, sir. So how our operator --

MR. BADER: How are you preventing the release, and how does that work?

MR. HALL: I understand your question. In the event of physical phenomena taking place, the particular vessels that are involved, they react through physics, not through the training of our operators.

MR. BADER: No. But somehow you're preventing the dose to the workers rising to anywhere close to 6200, and you're going to spell out exactly how you get there in your response. Right?

MR. HALL: We'll spell out how we go from the 6200 unmitigated dose to the colocated worker to the Tritium Facilities to a qualitative analysis of less than 100 rem to the colocated workers. Yes, sir.

MR. DWYER: Before you leave that subject so -- the seismic drill at the Tritium Facilities includes the subsequent fire?

MR. SCHIFER: Yes. Yes.

DR. WINOKUR: I think we'll be interested to learn more about this qualitative nature of things, but we have a fair amount of experience as you do with the analysis that needs to occur to understand what the dose is to the colocated worker, so we'll look forward to that response.

MR. DWYER: Joe?

MR. BADER: Are you ready to shift?

DR. WINOKUR: Yeah.

MR. BADER: All right. Let's shift to the impact of a seismic event on the spent -- at the spent fuel pool at the L-Area.

Could you discuss the current preparations for handling a seismic event and recovery from a seismic event at the L-Basin?

MR. DOHSE: Thank you, sir. I would be happy to do that. The disassembly basin at the L-Area reactor building is a seismically qualified facility, as are the fuel racks.

And the -- in the event of a seismic event, we would anticipate a crack might develop in the three-foot-thick cement walls of that pool. That pool is located below grade or at grade, and the pool is below grade, so if a crack developed, our engineers -- our structural engineers believe a leak on the magnitude of about 10 gallons per minute might develop.

The pool contains 3.4 or 3.5 million gallons of water. That would give us about 10 days if -- to react to that before any fuel would be exposed.

Now, it's important also to understand that most of that fuel arrived at L-Area in a dry condition or in casks that were shipped without water in them. The decay heat considerations for that fuel is extraordinarily or very, very low.

The water that that fuel sits in is not for decay heat considerations, but for radiation protection for the workers that we have in that facility, just to minimize their exposure and the dose that they might receive in working with that fuel.

So to summarize, if a seismic event occurred and there was a leak, we would have about 10 days to react to that leak before any fuel was exposed. Even if the fuel was exposed, I would not anticipate that it would be damaged in any way, shape, or form, because, again, it is shipped to us in a dry condition.

But we would respond within that 10-day period to refill that pool to keep the radiation levels in that facility at as low a level as we possibly could.

MR. BADER: Have you done any emergency response drills with regard to the pool to practice how you would get equipment and people there to --

MR. DOHSE: Specific drills involving that, no, we have not, because in my estimation, 10 days gives us adequate time in order to respond to that.

There are plenty of other drills on the site that we would run ahead of that one.

DR. WINOKUR: Well, do you have a plan in place for how you would refill --

MR. DOHSE: Oh, absolutely. Yes, sir. We have a plan in place, and we have identified the sources of the water. We've got three seismically qualified tanks that we would look to initially. Each of those three tanks holds over half a million gallons of water.

So there is a plan in place. The exercising of that plan is not something that's -- that we've done.

DR. WINOKUR: And the tanks are seismically qualified?

MR. DOHSE: Yes, sir. That's correct.

DR. WINOKUR: Okay.

MR. BADER: Do you include things like an emergency pump that you can bring in, portable pump?

MR. DOHSE: My first choice would be to use the fire department pumpers as the pump, but we would also -- now, again, I have 10 days, and I know that that first 10 days those firemen are going to be very, very busy. I understand that.

But, yes, I would look for an emergency pump, and we do have those available also.

MR. BADER: Okay.

DR. WINOKUR: Dr. Mansfield?

DR. MANSFIELD: I was just going to reinforce that comment. There's a lot of competition for resources, perhaps even off-site.

MR. DOHSE: Yes, sir. That is correct.

DR. MANSFIELD: And an exercise is the only way, I believe, to satisfy yourself that conflicting requirements for trucking water, for instance, can be satisfied for the worst case of all the users after a seismic event.

MR. DOHSE: I accept your comment, sir, and we'll look into the opportunity to do that.

DR. MANSFIELD: That's all I had, sir.

MR. BADER: Peter, one comment.

DR. WINOKUR: Yeah.

MR. BADER: I think you might find that some of those resources that you expect to be sitting there, if it was really that large an accident, might be borrowed by other people, and they might forget to return them.

MR. DOHSE: Thank you, sir.

DR. WINOKUR: Dr. Mansfield.

DR. MANSFIELD: Mr. Chairman.

I want to -- my questions are about site-wide blackout. The length of a site-wide blackout isn't very accurately predictable for large earthquakes.

Granted you've got a mature distribution system, et cetera, but you can have lots of outages everywhere, and it's not clear to me that you should be very optimistic about getting power back.

What are the big impacts if you have a long site-wide blackout -- the impacts that you have to guard against?

MR. MIKOLANIS: Let me take a -- Dr. Mansfield, let me take the first cut at that, and then I'll invite any of the panel members to add on as necessary.

Primarily the facilities of Savannah River don't require active power to achieve and maintain a safe state. There are exceptions. For example, the ventilation systems for the high-level waste tanks.

Where those are needed, we have seismically qualified -- we have generators and fans, portable fans as well as connections that are stored in a seismically qualified building so that it won't collapse during an earthquake to fall upon it.

For equipment such as the Defense Waste Processing Facility, the ventilation system, which is relied upon to protect the colocated worker, we have safety-significant diesel generators that have a four-day supply of diesel fuel oil on the site in a -- in a -- in a -- tanks and a transfer system that are qualified to withstand the design-basis earthquake.

The Canyon also requires -- for the most part it's purge -- these systems are needed either to run ventilation systems if they're being relied upon, or for purge systems to purge process vessels where the decay of radioactive liquids will disassociate -- will cause radiolysis of the water into oxygen and a flammable gas, hydrogen.

At the Defense Waste Processing Facility, that's accomplished by a nonsafety-related compressor that supplies the air, and if the earthquake damages that, we have a safety-class grade nitrogen system with a four-day supply of nitrogen there as well.

Within the Canyon the process -- the purge air is only needed for a very short time until they're started, and there's a safety-related diesel generator and a system to be able to supply that as well.

DR. MANSFIELD: And their fuel tanks are seismically qualified?

MR. MIKOLANIS: The fuel tanks for the Defense Waste Processing Facility are seismically qualified. The -- I don't recall for -- can I get some help possibly with -- I'll have to go and look up the -- what the classification is for the supplies for H-Canyon.

My background before coming here was in waste disposition. As the Acting Chief I'm learning these other facilities, but my -- if any of the other panel members know, I'd invite that --

MR. DOHSE: H-Canyon's diesel providing power to the exhaust fans is seismically qualified, as well as its supply tank.

DR. MANSFIELD: Okay. That's all I had, Mr. Chairman.

DR. WINOKUR: Mr. Dwyer?

MR. DWYER: I guess the thing I'd like to go back to is for the site emergency drills and exercises. We talked briefly about tritium. Your seismic drill includes the subsequent fire basically across the site, so maybe, Mike [Michael Mikolanis], you might want to start with this one.

How many site emergency drills or exercises include some natural phenomena aspect?

MR. MIKOLANIS: Actually I'm going to ask Mr. Reynolds to answer that. He's got more of a detailed knowledge of that than I do.

MR. REYNOLDS: From a site-wide basis -- and Mark [Mark Sautman] mentioned this in his opening remarks, as well -- I'm just going back in time to give you some examples.

Every year we go and prepare for hurricanes, so we go through a hurricane drills. This March or last March we did have a shelter drill in F-Area that include sheltering the contractors, both the F and H Laboratory there, as well the F Tank Farm folks participated in that, and others. As I go back in time, we do a lot of those types of drills every year.

As far as other areas on seismic drills, Lee [Lee Schifer] mentioned what was happening in the Tritium Facilities. We're doing a similar effort in the H Tank Farm, going through their drill program. Again, those have started off in the last several months, so we're coming up to speed.

So we're in that process of learning and going -- doing these seismic drills as we currently are talking. In the past, Mark [Mark Sautman] mentioned one of the major drills was back in 2002. I know that was a while back, but that was significant. That was a three-day drill called a joint venture.

We spent a lot of time, over 800 folks participated in part of that drill. They had three days of both off-site interaction with Federal Radiological Monitoring and Assessment Center, headquarters out at Graniteville, South Carolina, and also did recovery planning and actions and implementation on-site with the high-level Tank Farm.

So we have practiced that -- those drills. And I believe the other big participant would be high-level waste, and Wyatt Clark can give some examples, if you'd like.

MR. MIKOLANIS: If I could, before Mr. Clark -- we could submit, Mr. Dwyer, for the record, some of the information I'm about to summarize here, but your question was how -- if I understood it -- how many times or how frequently have we exercised at a site level the seismic- or NPH-type drill.

As I mentioned in the opening remarks, the -- and you may be wondering a little bit why the Chief Engineer's talking about emergency preparedness. And I own the operations part, which would include the operations facility level drills, as opposed to Mr. Reynolds, who manages the command and control above the facility level. That's why we're passing the microphone back and forth a little bit here.

The command and control -- we may not be exercising the command and control at the site level as frequently, but at the facility level, where the actions need to be taken and the facilities need to be put in a safe condition, I can assure you that those -- that some of those drills are being performed.

And as I mentioned in the opening remarks, we need to be more consistent about how many of those we're running in a year, how we're simulating nearby facilities releasing a plume.

So the better answer to that we'll probably be providing you for the written record how many NPH drills we've run in some of the facilities in the last year. Would that be a better answer for what you're asking?

MR. DWYER: That's along the lines, but let me get a little bit more specific.

For example, Mr. Reynolds, you mentioned shelter-in-place drills at F and H Lab. So is that the extent of the drill? You said, "All right, let's declare a tornado watch, everybody shelters in place." That's the end of the drill? Or did we actually say, "Tornado strikes this facility, damage as follows, response is as follows, recovery is as follows."

There's a difference between -- I mean, we've all had the annual shelter-in-place drill at headquarters where you all go outside to the rally point, and that's the extent of the exercise. We're talking about something else here.

MR. REYNOLDS: Right. In that particular example, that's what that was, is a shelter in place. The one I mentioned back in 2002 was the one that we did what you just asked for, and that was the actual response to the event.

There was a high-level waste release. It was both ground and plume release. We took actions on that to mitigate that, and then we did go into recovery plan for three days' worth of drill.

MR. DWYER: Okay. And so 2002 is recognized as that was an extensive effort; as I recall, three days of considered exercise.

Is there something similar to that planned in the near future?

MR. REYNOLDS: As far as our plans in the near future for NPH-type events, what we have is the collective efforts that you've been hearing. Lee [Lee Schifer] started. We've done similar drills in H-Area.

Wyatt Clark has done similar drills in H Tank Farm. And so we're just starting with that process through the ISMS, learning about the earthquake, learning about how those programs are handling that natural phenomena hazard, and we plan on later this calendar year to get together and learn those lessons collectively from each other and factor that into the program as well.

MR. MIKOLANIS: Mr. Sautman indicated, you know, we've had a recent uptick in some of the tempo. I would like to ask Mr. Clark, who's chomping at the bit over here a bit, to discuss some of the seismic -- or some of the NPH-related drills that we have run in the Tank Farms recently, and please include some of the --

DR. WINOKUR: Let me point out, before you go too much further, 2002 was a decade ago.

MR. MIKOLANIS: Yes.

DR. WINOKUR: I mean, it's certainly not something you'd want to hang your hat on -- right?

MR. MIKOLANKIS: No.

DR. WINOKUR: -- in terms of your ability to respond to anything. That would be true? I mean, I just want to be frank about it. That's a long time ago.

MR. MIKOLANIS: For exercising the site-level command and control, the 2002 not only exercised the site level, it also exercised the external connections. Yes, sir. But we have run NPH-type events within the facilities to ensure that the facility workers, the operators, understand what to do following an NPH-event, and I can -- we will submit something for the record if you wish, but Mr. Clark can outline some of what we've done more recently than ten years ago.

DR. WINOKUR: Well, let's continue the discussion. I think you're giving us information which is good, but in the end the question I'll have for you is just how comfortable you feel right now about the ability of the site to respond to a very significant emergency.

We've seen in the press tornadoes and the kinds of things that can happen. I mean, they're really devastating and shocking. And it's my gut sense that this is very difficult to do, what we're talking about here, especially at a site this complex.

But in the end I'll certainly be interested in getting a sense of just where you think you are in this process right now.

MR. CLARK: Chairman Winokur, if you would, the -- your comment about 2002 being a decade ago, from a response perspective, that's very factual.

I had the privilege of being the TSR [Technical Safety Requirement] coordinator during that drill, and I can tell you that the learning that you gain, not only the fact that my plant was the contributor of multiple releases, injuries, contaminated resources, et cetera, but our recovery effort, we worked through turnover in that drill; we did recovery.

We reworked our recovery program as a result of that. I'll tell you that that learning process has continued to be passed along and incorporated. I still am a TSR coordinator, so that gives you a feel from that process.

Your site rep is very active, and he is very much involved in oversight and encouraging us in areas where we've got some opportunity to grow.

I stated in the last session that we really do embrace the ISM, and part of that's continuous improvement. The fact is there were some areas we could improve on as it relates to SRR and the high-level waste program.

As a result of that, we became very active in not only developing drills that we needed to, focusing in two areas; one being cell-oriented, so that we could put our cells together and build a bigger drill future -- thinking to the future; but also thinking about portability.

Historically our drills have been somewhat focal-oriented in a given area: the event would occur here. We began building a more generic drill set so that we could then move that drill around, have that event occur in many areas, and then challenge the workforce accordingly.

We focused on ventilation deployment. As we talked about previously, ventilation is an important aspect. Even in the blackout scenario, we rely on ventilation.

We developed that scenario, and then we worked through all of the deployment shifts and now that is a quarterly drill for us, so we resurrected the importance of that effort, recognizing the significance.

Control room evacuation: our control rooms are not designed to withstand a full earthquake. We expect that they may be, but we plan for them not to be there. Therefore we deploy away from the control room and we take the actions accordingly.

We took and developed drills that not only moved us out of the control room, did a full evacuation, but handled the operations at an increased tempo that we had to, to do to shutdown, and we added to that some additional difficulties; i.e., we took away phone and cell phone, so all we had to really to use was a radio.

I will tell you that we are learning as we go through. Since 2010, if I went back and looked at those cell-related drills, thinking in terms of high wind, tornado, seismic event, deployment of ventilation, evacuation, in the Tank Farms, DWPF, and Saltstone, we've run 26 drills.

I'll also tell you that as part of our effort to integrate and position ourselves to be more efficient with our resources, making sure that we can use our people efficiently, we've begun to move functional responsibilities to incorporate drill response across the facilities.

More specifically, in the area of F and H Tank Farm, we now respond to one facility with resources out of the other, and we drill that.

In fact, the nine high-wind events included OSC [Operations Support Center] activation in an opposite -- I should say a significant portion of those used the resources from another facility to respond in order to be able to ensure that we had the ability to move those resources back and forth.

So to your answer, sir, 26 of what we've worked through that period; a lot of that as a result of the improvement process that we've been encouraged to look at.

DR. WINOKUR: All right. Mr. Bader, Mr. Mansfield, and we know you're still asking questions, Mr. Dwyer.

MR. BADER: Have you taken the Mixed Oxide Facility into account? Do they participate in these?

MR. CLARK: As it relates to the Tank Farm facility, no, we have not, sir.

MR. BADER: Have you -- when you look at -- when you do these drills and you talk about taking resources from other people, does that include NNSA-controlled facilities?

MR. CLARK: Our resources to date have only moved resources within the SRR organization.

MR. BADER: Don't you think when you're drilling on a site-wide event that you should include all site-wide facilities under one operating control?

MR. CLARK: I should back up and give you a little more information on that, Mr. Bader. The 2002 event, that was fully site-wide. We did --

MR. BADER: But you've changed -- if you look at the contractors that are sitting there present with you today, they weren't here then.

MR. CLARK: I concur, sir. So as it relates to the drills we've run, they have been very cell-oriented, focused on those specific areas with an objective of growing them larger.

MR. MIKOLANIS: The facility drills that Mr. Clark is talking about are the building blocks of the emergency preparedness. The functions you're talking about that would cross between the contractors, that's the emergency response organization, and the Chairman asked me a question -- I guess we're going to get to it now -- of why is DOE comfortable that we have the capability to respond to that.

My comfort level -- and I'm also a qualified member of the emergency response organization, the technical support room -- my comfort level resides in the fact that when we do run these drills, the command room, which is supported then by a technical support room and others, has them -- we demonstrate the ability to go coordinate, bringing in materials from other facilities for a single-facility event. I agree with -- I concede that point.

What we need to work on, an area that we've discussed internally and -- and is to make sure that we've got the logistics in place -- if we have a multiple event, it's the same operation; you just need another technical support room to be able to support the second facility and what actions are going on in there.

We have the space in the emergency operations center. We have the capabilities to do that. We do need to test that and actually exercise it to make sure we've got the books and the manuals and the procedures for them to use, but we need to test to make sure do we have the communications for that, and that is an area that our emergency response organization is looking at, as I mentioned during my opening remarks, as an area for continuous improvement.

That would not change the policy -- or would not be a policy-setting action to do something like that.

DR. WINOKUR: All right. Last comment. We have a question then from Dr. Mansfield.

You had one more thing you wanted to say, or something to add?

DR. MANSFIELD: You mentioned that you have portable emergency power for ventilation equipment. I suppose that means it's the Tank Farms.

MR. CLARK: Yes.

DR. MANSFIELD: If you have a multi-day loss of off-site power, you would power that with, what, portable generators?

MR. CLARK: The portable ventilation system is -- it does have portable generators.

DR. MANSFIELD: Portable generators. And are they gasoline or diesel?

MR. CLARK: They're gasoline.

DR. MANSFIELD: And do you have a seismically qualified gasoline fuel storage?

MR. CLARK: No, sir. The position that we took was that gasoline would be fairly readily available in the vehicles, so we actually staged equipment to be able to remove it from vehicles in order to fuel those generators.

DR. MANSFIELD: Okay. So you've got to have safety class siphons or something.

MR. CLARK: Well --

DR. MANSFIELD: No.

MR. CLARK: -- well, the siphoning equipment is staged with the equipment and protective --

DR. MANSFIELD: Staged and everybody knows where it is.

MR. CLARK: That is correct.

DR. MANSFIELD: And it's compatible with modern emission-controlled fueling orifices?

MR. CLARK: We have -- we've looked at that, sir, and we feel like for the period of time we'd run it, it would be adequate, sir.

DR. WINOKUR: Is this the approach you want to use, to siphon gasoline from cars?

MR. CLARK: When we evaluated the option of staging gas and having gas there, working through it, making sure we don't have aged gas, changing out, et cetera, we thought that, given the availability of gasoline, given the number of vehicles there, as well as the potential to use gasoline at the site, we felt like staging the equipment to do that would ensure us the opportunity and the availability of the material.

So, yes, sir, that is what we chose to do.

DR. WINOKUR: Mr. Freshwater, let me engage you. We've been leaving you alone. You look kind of lonely down there. You're looking at this thing more DOE-wide. Right?

MR. FRESHWATER: Yes, sir.

DR. WINOKUR: Could you have any other solutions for how to get gas to those pumps, aside from siphoning them out of cars? Any sense of what other people in the Department are doing?

MR. FRESHWATER: Well, sir, the first part of that answer would be the site has mutual aid agreements with the off-site people. You have to consider what the event is and what the actual damage was done to the entire surrounding community. It's difficult to predict those in any situation.

What you do is you get then into a response that will really involve the national response framework, the national program to respond to an event, that we've seen with the tornadoes more recently in the country, all the way back through the national response framework generated after Hurricane Katrina.

Savannah River has the ability to contact us out through their -- in addition to their other communication systems. They're a node on the Emergency Communications Network [ECN] that DOE has. That connection is a landline connection, so there are certain situations where that connection would be vulnerable to being severed in a severe NPH event.

DOE does have the ability to deploy an ECN node down to here. The equipment was used in Japan to support our folks that were over there in Japan. It was equipment that we used during Katrina to bring the Strategic Petroleum Reserve back up in the Department.

Once you get those -- once you get communications back to us and we can get something down here, depending on what the infrastructure damage is, within about 24 hours, feeding the information back up to the headquarters allows us at the national level to start doing the influence at the national level to get them materials that they need, and if they've got the list of materials, that's part of the battle, to then start prioritizing those and getting the logistics pushed down into them.

DR. WINOKUR: All right. I'd be anxious to learn more about DOE's policies and directives and guides on siphoning gas from cars, but I guess -- I guess you'll give that to me later.

I would hope there might be a different solution. It's very, you know, it's very practical and pragmatic, but -- and maybe there are other things you can think about. I would just encourage you to do that, and see if there's something else you'd like to consider.

You want to comment? It does surprise me a little bit.

MR. MIKOLANIS: Yes, sir. I actually would like to comment on that. If I was given the choice of spending several hundred thousand dollars or more and putting together a seismically qualified gasoline tank and then all of the attendant maintenance and surveillance requirements that would be associated with such, to make sure the gas remains fresh, et cetera, you need to do that kind of work for a diesel generator supplying emergency power to an entire facility.

When you're talking about these portable generators that have the capacity of, I don't know, half a gallon, a gallon or so -- they're typical of what you might pick up at Lowe's, but -- I would much rather spend that several hundred dollars plus the operating cost accelerating getting waste out of a tank when I have a readily supply of gasoline out in all the parking lots right around these facilities.

That makes a whole lot more common sense -- it's a simplified solution rather than a complicated engineering solution, that frankly made sense to me.

DR. WINOKUR: Okay.

Mr. Dwyer, I think you're -- you're still up -- do you still have some questions?

MR. DWYER: Yes, sir.

I guess the other part that I'd be interested in -- Mr. Bader briefly touched on in involving multiple contractors. Is there any drive on the part of the DOE office to -- to foster any exercises that include multiple contractors?

MR. MIKOLANIS: At this point in time, there are no plans to run a site-level drill that would exercise the command and control functions between multiple contractors or multiple facilities beyond what we do already with the multiple contractors, if you will consider the security forces as well as the operating contractors of a particular facility.

We do exercise the command and control of multiple contractors in that respect, but I believe, Mr. Dwyer, your comment is more -- your question is more directed to multiple contractors that are operating facilities rather than the safeguards and security as a --

MR. DWYER: Correct.

MR. MIKOLANIS: -- as a second contract.

And we are working with -- and we are watching NA-40 [Associate Administrator for Emergency Operations] as they follow up to the Fukushima beyond-design-basis event data request that HSS is leading. NA-40 has the point of looking at the data there and determining whether there is going to be a policy change on doing multiple facilities and drilling on a multiple-facility or -contractor basis.

But until such a decision is made, we are -- we don't have any plans currently to go do something like that.

MR. DWYER: And how about across multiple DOE offices? We have NNSA and EM.

MR. HALL: The NNSA is a part of the Consolidated Emergency Response Framework for the site, so the NNSA officials on our staff are trained and qualified to the one SRS emergency response organization.

When the F-Area drill was conducted last year, the Mixed Oxide Fuel Facility played in that drill and sheltered in place, were associated with that.

We run on an area emergency coordinator, facility emergency coordinator concept, so for H-Area, even though the Tritium Facilities are in NNSA facilities, they would have a facility emergency coordinator who would be -- answer to the area emergency coordinator for H-Area, which happens to be H-Canyon.

So even though I've got DOE and NNSA facilities colocated different DOE management, I've got a single Savannah River Site emergency response structure, and our contractors -- contractors for those facilities are integrated through the overall emergency response organization we run with area emergency coordinators, and at the facility level we have facility emergency coordinators.

MR. DWYER: Okay. And just -- you mentioned the Mixed Oxide Facility. So just briefly, 235-F is in proximity to the MOX Facility. In its existence it poses a hazard. Is there -- I know I'm a little bit off-subject here.

Is there any intent to do something about trying to reduce the risk, the static risk represented by that facility?

MR. DOHSE: The plan is being put in place -- and just a little history, real quickly. The most -- the biggest vulnerability associated with 235-F was the stack that was located very close to that building, which in a seismic or perhaps a wind -- high-wind event, could collapse onto the building and create -- be the initiator for a follow-on event that could result in a release of some of that material.

That stack was removed with Recovery Act funding, done sometime in the past year, year and a half. So --

MR. DWYER: I'm sorry. Removed? Or the height was reduced?

MR. DOHSE: Reduced. I apologize. Removed from being capable of being the initiator because the height was lowered to a point that if the remainder of the stack fell, it could not reach the building.

So the biggest problem associated with 235-F has been addressed and eliminated.

Now, still the question is out there: "What now do you do with the remainder of the building?" And it is the intent -- and perhaps Michael [Mikolanis] can address this a little further -- to try and put a funding line in the 2013 budget to go address the material that's held up in that facility and to eliminate that risk.

MR. MIKOLANIS: There were also two other measures taken to minimize the consequence that would occur. Mr. Dohse mentioned the stack height reduction. There was a also a movement of monitoring instrumentation to the manned control room so that the instrumentation within the facility that is active is now monitored within the F-Area -- within an F-Area control room that is manned, as well as the combustible material -- the deinventorying that I mentioned earlier.

There is a mark -- we have put a placeholder in the budget request for FY13 to be able to go and deinventory those hot cells. The hot cells that we talked about have 90 percent of the material-at-risk of the plutonium-238. There is -- we do have a mark for that, and frankly, if the budgets don't work out, we would put it in the '14, the '15, whenever in the money would be available.

We consider that to be a significant risk, and we'll continue to try and seek the money to remediate that risk.

MR. DWYER: So, Mr. Mikolanis, I understood that to be that you intend to promote it into the budget, but it's competing against the other priorities in the budget.

Are you optimistic that it's going to appear, or are you not sure? How far are you willing to commit here?

MR. MIKOLANIS: Well, committing to what Congress does? No, sir, I'm not going to extend my credibility that far.

MR. DWYER: That's not what I was asking.

MR. MIKOLANIS: I know, but what I am committing -- we have done, the hazard analysis for -- and the safety basis for the facility as is has a unmitigated consequence of significant, and there are no safety-related measures in place to go reduce that hazard to the worker.

The upgraded basis for interim operations, the new DSA that is coming out, makes those controls that I talked about -- the movement of the control -- the combustible material removal, that is now a safety-related program. It's not implemented yet, but we've already -- it's not implemented in the DSA, but we've already implemented that control in the facility to reduce those hazards.

The plutonium is released by a full-facility fire following that, and we've reduced the likelihood of such an event occurring, should the earthquake occur, and that's the best that we can do until those funds do become available.

DR. WINOKUR: All right.

MR. DWYER: Okay. Yes sir.

DR. WINOKUR: Are you done? Mr. Bader?

MR. BADER: Just pursuing the whole thrust of an integrated site response, have you considered in any of your recent drills or tabletop exercises the needs and the competencies available in the local communities and the fact that you're going to need to consider them if there is an NPH event that involves the entire site? -- because it's going to involve them also.

MR. MIKOLANIS: Is your question in terms of whether we would need theirs or whether we would be supplying the community?

MR. BADER: Yeah. I mean, have you just -- have you worked with the surrounding community to look at the --

MR. MIKOLANIS: Do you want to handle that? Go ahead, Mr. Reynolds.

MR. BADER: -- the competing requirements.

MR. MIKOLANIS: Yes. We have considered that. Mr. Reynolds?

MR. BADER: I mean that's where your people live.

MR. REYNOLDS: Right. From a competing requirements, we prioritize those as life safety first, so there would be that consideration, dependent on what the then is. We've had several mutual aid responses.

Graniteville, South Carolina, happened in January 2005. We were the first responders on site. We took four of our firefighters. They were in the hazmat team, and actually saved a person from that situation, which happened to be at that time a chlorine spill on a tanker derailment.

So we do participate in the community quite often, and they've also helped us. When our ladder truck goes down, they provide their ladder truck in reserve, and they know that we may be calling on their services, so it works both ways for us.

MR. BADER: Yeah. You've done this in specific circumstances, and I'm well aware of that, and it's commendable. What I'm considering here is something where the site is involved in something like a seismic event. It's going to be impacting them, too, and you're going to have the same demands for help from them, and there's also some resources there.

So it would seem to me to make sense that you should be looking at a broader picture than just the site, and that's the question I'm asking.

MR. REYNOLDS: I understand the question. We don't have any plans for that magnitude. However, just so we know, in each one of our exercises, we involved places like the hospitals, as an example, and they practice on helping us go through the decontamination and physical needs that the hospital provides our people, so we practice with them. We practiced last June 8, as an example, going off-site with that.

But if I'm understanding the question, to a larger magnitude, we have not.

MR. MIKOLANIS: And, Mr. Bader, I'll take an action for the record, too. I don't know the answer to your question as to the extent that planning has been done to that. I will take an action to go out, find the answer to what has been done, planning, and if there are any plans to do such a planning effort.

MR. BADER: Yeah, Mike [Michael Mikolanis], because it goes to the safety of the site, because you're going to have demands to help people if there's a site-wide event like a massive tornado or a seismic event that goes into the neighboring communities, more than likely.

MR. EDWARDS: If I could just add, with respect to involving the community, there is a local area planning commission that Savannah River Site participates in both the federal side as well as the contractors, and that does discuss the local responses in the area, the capabilities.

There is established protocols for mutual aid between the two. With respect to your question about everyone getting stressed, we recognize that that is something that's going to happen. That's why Savannah River Site principally would take care of Savannah River, initially.

We would, of course, provide any assistance off-site we could provide until the national response capability were to kick in. Those national resources would then come in and take care of the area outside of the Savannah River Site.

MR. BADER: Okay.

DR. WINOKUR: So let me ask: What do you have planned now? We've had a good discussion. What do you have planned in the next six months, year? What do you -- what kind of exercises do you think you're going to be able to do?

MR. EDWARDS: It's a part of -- and several people have touched on it in here. A part of our process for anything that we do is the crawl, walk, run.

We readily admit that our exercise program, to this point, has been principally centered around individual facilities. We are starting the process of expanding that to include multiple facilities involved in one event.

The liquid waste program, as already testified, is well along the way to that process. The Tritium Facilities are well along the way to that process. The next area of focus for SRNS is the H-Area, specifically nuclear materials facilities.

That will start with an area NPH tabletop exercise as a part of the crawl. They are in the process of developing that tabletop exercise. That tabletop will then go through a coached exercise, as Mr. Schifer discussed, followed by an actual graded exercise.

But we are in the early phases of the development of that.

DR. WINOKUR: So you're going to be doing tabletops, which to me sounds like a very good idea. And that's a tool you'll definitely be using. Right?

MR. EDWARDS: Yes, sir. That's the first step, is the development of the exercise scenario, followed by a tabletop in the coaching/learning phase.

DR. WINOKUR: My experience in life is that whenever these emergencies occur, nobody really planned to respond to them appropriately. Believe me, I think it's a very, very challenging -- and the reason I'm kind of discussing it here is that I think this is a very complex site, and it's going to be extremely challenging for you guys, with all these different facilities and hazards, to coordinate a response when there's something that really is site-wide and community-wide and you have to respond to it.

And I think Fukushima and other places, you know, teach you that. Things never do work out the way you think, so it's worth a lot of time.

MR. EDWARDS: Yes, sir. Let him respond to that.

DR. WINOKUR: Maybe that didn't require a response, just the same.

MR. EDWARDS: But I do want to touch that briefly. We do agree that it would be challenging. As a part of the lessons learned that are coming out of Fukushima, as we're walking through the areas, we recognize that the areas first will be the initial response. So, we're trying to ensure that anything that the area needs to respond for itself is taken care of first.

So you mentioned the L-Basin. Mr. Dohse talked about the fire trucks. Another one of the actions that they're also looking at is the placement staging of emergency pumps that could be used, in full recognition that the fire department may not be available to respond to those events.

So as the lessons learned from Fukushima come out and we continue to walk through the individual facilities, as well as our emergency response facilities, we're trying to determine what improvements we need to make to better position ourselves to be able to: one, have the trained and qualified folks in the facilities take care of their own; two, improve our command and control structure so that we can respond to those individual facilities when their needs are exceeded by their capabilities.

DR. WINOKUR: Dr. Mansfield?

DR. MANSFIELD: I just want to point out that there were probably mutual aid agreements between communities at Fukushima, and it would be interesting to find out if they were effective at all.

MR. EDWARDS: Good point.

DR. WINOKUR: One additional question I have, and maybe we'll have a few more to follow up on those, is in terms of the fire department folks and the emergency response personnel, are you maintaining those staffs, are you growing those staffs, are they increasing? -- because I do think that the -- you know, right now I think these things do require more attention.

Is that your sense of things, Mr. Mikolanis, that you're going to be able to, you know, work with the contractors to ensure that you've got the appropriate fire support, you've got the appropriate emergency planning people to help you with this?

MR. MIKOLANIS: The short answer to that is, yes, sir. I do know that Mr. Dohse -- and I'll ask him to expand on this after a moment, that as we closed some of the facilities, as we've shrunk some of the footprint, Mr. Dohse has challenged his organization to look at those infrastructure and the supporting functions on the facility to see whether those are right-sized. And the fire department was one of those.

Now, they were working a proposal that they were going to submit to DOE to see whether there was appropriate justification to downsize the fire department, but, yes, we will maintain the appropriate level of fire department support commensurate with the facilities and the hazards that we have within them.

Mr. Dohse?

MR. DOHSE: We just did spend $1.4 billion of Recovery Act funds on the site to reduce the site footprint, and so I asked the question, "Do I need all the fire stations that we have?"

The answer that came back was, "Yes, you do. In fact, you're undermanned by three fireman." And so, we have -- I think two weeks ago -- put out a notice to try and hire three additional firemen to make up for that delta where we were understaffed.

We were making that up with overtime, but you can only do that for so long before, you know, you wear your people out.

So the answer to that is, yes, I asked the question; it was me. And the answer that came back was, yes. I continue to need the three fire stations and the firemen at the manning levels that currently exist.

In fact, we were below the manning need that exists, and so we are hiring firemen.

DR. WINOKUR: I think you had shared that with Mr. Flowers when you came back to DC to see us once, so we're certainly supportive of that. I think you do need these folks, and they really have to be well trained to deal with the kinds of emergencies you're going to present to them.

MR. DOHSE: I understand and agree.

DR. WINOKUR: Yeah. I have one or two more, but do other Board Members have questions?

And then I'll -- All right. Mr. Bader.

MR. BADER: Mr. Reynolds was kind enough to remind me of a question I meant to ask, and that was on the hook and ladder truck. I think it was Mr. Reynolds.

MR. REYNOLDS: Yes, sir.

MR. BADER: Yeah. We've been interested in when that old machine is going to be replaced. Are there any plans to get a third new fire truck, namely that one?

MR. REYNOLDS: We did have that, also a light rescue truck and an ambulance, and we have that placed on the critical infrastructure list and expect that to be replaced in upcoming years.

MR. BADER: Thank you.

DR. WINOKUR: I have a question. And that is, I think in your testimony you talked about -- Mr. Mikolanis, about really what matters is kind of like the release mechanism: A fire is a fire, but the initiating event doesn't.

And I would ask you to rethink that a little bit. You may come up with the same conclusion, but it seems to me when these major tornadoes and earthquakes and things happen, that the initiating event really kind of provides the opening set of variables, constraints, parameters that you're going to be forced to deal with, so I think a fire following a seismic event is a little more challenging than just a fire in a facility from combustibles.

Did I misunderstand you, or you want to comment on that?

MR. MIKOLANIS: Yes, sir, I would. No, I would agree with what you're saying. How we build the drills, how the -- how a particular facility at a facility level responds to it, no, it doesn't matter whether a heavy load fell on a radioactive waste transfer line and broke it open or if an earthquake shook it and caused the same breach to occur.

When you're starting to integrate and pull these together across multiple facilities, multiple contractors, yes, sir, I agree with you; the initiating event does matter.

The initiating event matters when you're defining the scope of the drill itself, but when you're actually exercising and implementing it, other than putting in some of the anomalies such as loss of communication, such as a plume from a nearby facility, the initiating event is not as important.

But, yes, sir, I did not mean to communicate it's irrelevant.

DR. WINOKUR: I think we're going to have to go on. We do have a public comment period. I want to thank you all very much, it's been a very good discussion. I know there's a few things for the record you're going to provide to us.

I think this site is, like I said several times already, really worthy of some attention in terms of emergency preparedness and management, because it is so complex, with so many different facilities and hazards, and it would kind of be nice in some ways if you guys could be the leaders for the complex in terms of how you do things, so other people could learn.

You have different contractors and different parts of DOE at the site participating, NNSA and EM, so you kind of have a mix of everything, and I think it's -- it'll be a challenge and an opportunity for growth and for learning for everybody.

And with that, I'll thank you. I'll get these names right: Mr. Mikolanis, Mr. Dohse, Mr. Clark, Mr. Freshwater, Mr. Edwards, Mr. Schifer, and Mr. Hall. Hey, thanks a lot, and we're going to move right to the public comment period.

Thank you.

MR. MIKOLANIS: Yes, sir. Thank you.

(Pause.)

DR. WINOKUR: At this time, per the Board's practice, and as stated in the *Federal Register* notice, we welcome comments from interested members of the public.

A list of those speakers who have contacted the Board is posted at the entrance to this room. We have generally listed the speakers in the order in which they contacted us or, if possible, when they wished to speak.

I will call the speakers in this order and ask that speakers state their name and title at the beginning of their presentation.

There is also a table at the entrance to this room with a sign-up sheet for members of the public who wish to make a presentation but did not have an opportunity to notify us ahead of time.

They will follow those who have already registered with us, in the order in which they have signed up.

To give everyone wishing to make a presentation an equal opportunity, we ask that speakers limit their original presentations to five minutes. The Chair will then give consideration for additional comments, should time permit.

Presentations should be limited to comments, technical information, or data concerning the subjects of this public meeting and hearing. The Board Members may question anyone making a presentation to the extent deemed appropriate.

The first speaker we have is the Mayor of Augusta, the Honorable Deke Copenhaver. Is the mayor here?

VOICE: He'll be here in about three minutes.

DR. WINOKUR: All right. We'll move on to the second speaker. And the second speaker is Mr. Ben Taylor, who is with the Honorable Joe Wilson, who's the Congressman from South Carolina's 2nd District.

Mr. Taylor?

MR. TAYLOR: Good evening. I welcome -- the Congressman wishes he could be here but wants to say, "Thank you all for coming down."

I want to welcome the Defense Nuclear Facilities Safety Board to the Central Savannah River area, and I'm grateful for this opportunity of dialogue on issues related to the public health and safety at the Savannah River Site, SRS, particularly nuclear materials disposition.

Additionally, I'm confident this hearing will yield more understanding of the unique capabilities at the site's H-Canyon facility and HB-Line. And I share the Board's concern over the Department of Energy's, DOE's, decision to suspend chemical processing at this facility.

As we are aware, H-Canyon continues to operate solvent extraction cycles to purify enriched uranium solution from dissolved unirradiated highly enriched uranium and blend down for the Tennessee Valley Authority [TVA], a limited mission.

The bulk of legacy spent fuel resides at the site's L-Area Basin, which continues to receive DOE-obligated material.

HB-Line is presently processing limited quantities of plutonium materials, specifically material that does not meet the mixed oxide, MOX, fuel specifications.

As the Board made clear to the Secretary Chu in its February 28th letter, the H-Canyon facility, including HB-Line, has proven to be an effective and valuable asset for safely processing fissile materials over several decades.

These H-Area facilities are the only active processing facilities having capability of interest in the United States and are DOE's only disposition path for processing these types of excess nuclear material inventory.

This begs the question: If H-Canyon and HB-Line do not process, what is DOE's disposition path for the spent fuel and non-MOX-able plutonium?

Until DOE demonstrates legitimate alternative disposition paths for its excess nuclear materials, I strongly advocate for the ongoing disposition of fissile materials at the H-Canyon facility.

Again, I greatly appreciate the opportunity to address the Board, and I sincerely thank you for your continued service.

Thank you.

DR. WINOKUR: Thank you, Mr. Taylor.

Is the Mayor present now?

(Inaudible comment from audience.)

DR. WINOKUR: Thank you. I don't know if he'll be speaking during this session, but Mr. Bernard Rusche, are you available to speak? Would you like to speak at this session?

(No response.)

DR. WINOKUR: Noting he's not present, I will move on to Mr. George Widener, who's the Chief of the Williston, South Carolina, Fire Department.

Is Mr. Widener present?

MR. WIDENER: Yes, sir.

DR. WINOKUR: Please. Thank you.

(Pause.)

MR. WIDENER: Thank you very much for the opportunity of speaking this afternoon, and I've got a photo. I was raised that a photo is worth a thousand words and, if possible, I'd like to present this to the panel to review.

DR. WINOKUR: Thank you. I've got some free space in my office.

MR. WIDENER: Just to give a little brief background on myself, there again, my name is Milton Widener. I'm the Fire Chief of Williston, South Carolina. I've served some 38 years with the fire service; just recently became Chief this past April.

Emergency preparedness is something we do on a daily basis, being in the fire service. Over the years at SRS, I have personally witnessed the changes brought forth within the site as to the management, training, and capabilities.

Emergency preparedness covers many venues, especially when we look at the site: not only fire protection, emergency medical services, as well as site security, both physical and personnel.

As with any emergency organization, we train for the worst and hope for the best. On July 15th, 1995 -- and I know we're kind of dated there, but the town of Williston experienced what we had always said would be our worst as firefighters.

We lost one-half of a city block to fire, and it had not been for the Savannah River Fire Department responding mutual aid to Williston, who knows what the outcome might have been.

The ladder company set up on Main Street and provided a wall of water to help save our town. The fire safety engineers provided an invaluable service to the 25 fire departments that responded to our time of need.

As Mayor Rivers quoted that day, "We went from downtown preservation to urban renewal within a matter of hours."

The Savannah River emergency preparedness organization, I will have to say, is one of the most capable groups in our nation. We all train, train, and train and hope we never experience what Japan has gone through the last several months.

As Fire Chief of the town of Williston, we say thank you to the site for all your support, not only to Williston, but to all the neighboring communities.

If ever needed, we vow, through our mutual aid agreements, to return the favor. Thank you very much.

DR. WINOKUR: Thank you very much, Mr. Widener.

Are you going to take your picture back?

(General laughter.)

VOICE: Aw, schucks.

DR. WINOKUR: Aw, schucks, right. Are we --

please just come right up and tell us when the Mayor's available. We do want to hear from him.

VOICE: He's here.

DR. WINOKUR: He is here? Thank you very much. So we do want to introduce the Mayor of Augusta, the Honorable Deke Copenhaver.

MR. COPENHAVER: Good afternoon. And I apologize for being late. It's been one of those days. But I'd like to thank the Board for giving me the opportunity to speak, and my comments will just be brief.

From a safety standpoint, Savannah River Remediation's work is critical. I definitely appreciate the job they're doing. Aging waste tanks hold high-level radioactive waste, waste that we don't want to see in the environment. Once it's outside a tank, it poses a threat to the safety and health of workers and the public.

The approved method of disposing of the SRS waste is turning the most radioactive waste into glass, while also taking the least radioactive waste and making saltstone out of it to leave at the site.

Once the waste is removed, the tank closure process can begin. The safest strategy for our community is simple: expedite taking the waste out of the tanks. To remove waste faster, SRR has discussed putting in place additional proven technologies into the mix of technologies to ensure cleanup of the tanks can be done as quickly and safely as possible. Taking the waste out of the tanks is the only way to reduce the threat.

A real benefit of accelerating the cleanup is that the life-cycle cost of waste removal is shortened by years and the taxpayers save billions of dollars in life-cycle costs.

However, while that side benefit is significant, it is not as important as keeping our environment and people safe from waste left in the tanks long term.

Once again, thank you so much for having me, and thank you for allowing me to introduce this public comment into the record.

DR. WINOKUR: Thank you, Mayor, and thank you for spending some time with us today.

Our next speaker will be Dr. Marc Miller, who's the Vice Chairman of the Savannah River Site Community Reuse Organization.

DR. MILLER: Thank you. Good afternoon. I'm Marc Miller, the current Vice Chair of the SRS Community Reuse Organization [CRO], and I'm the Dean of Hall College of Business at Augusta State University.

It is in my capacity as the Chair-elect of the Savannah River Site CRO that I'm here this afternoon and pleased to offer our comments to the Defense Nuclear Facilities Safety Board.

The CRO is a nonprofit community organization representing the five counties in Georgia and South Carolina, and these counties surround the DOE's Savannah River Site.

Our primary mission is to support economic development efforts and job creation and to promote new missions for SRS, and to serve as a unified voice for the region.

As a community, we are proud of the impressive safety record compiled by our region's largest employer. SRS is one of the safest sites in the DOE complex and one of the safest major industrial sites in the world.

The SRS's outstanding safety performance has not gone unnoticed. Both site contractors, Savannah River Remediation and Savannah River Nuclear Solutions, have received numerous safety awards from the National Safety Council, the South Carolina Manufacturers Alliance, the South Carolina Labor Licensing and Review Board, just to name a few.

In addition, the Savannah River National Laboratory is considered one of the safest national labs in the complex.

In our view as a nuclear community, SRS

management and its contractors are committed to protecting workers, the public, and the environment, as well as our national security interests.

The state of emergency preparedness and safety at SRS is not an issue that we worry about, and we support the job that they are doing.

As a group of communities throughout the region, we realize that the approximately 37 million gallons of highly radioactive liquid waste stored in large underground tanks can be and may the primary potential threat to human health and the environment at SRS. Therefore we have come together in a unified voice through the SRS Community Reuse Organization to express our belief that it is essential that high-level liquid waste be removed from the aging underground tanks at SRS in a safe and timely manner.

At the same time, however, we believe it is irresponsible for H-Canyon to be placed on standby or reduced operational status. All funding and site operational scenarios need to advance this two-prong approach, not one activity over the other.

We understand that safely closing waste tanks involves an intricate set of steps that include emptying the waste tanks of bulk waste and then removing much of the residual waste as practical through various technologies and techniques.

The liquid waste contractor, SRR, provides the intellectual and technical know-how to accomplish this mission. They understand and embrace the common goals and values of the community, which is to emphasize risk reduction to the greatest degree, but in the way that protects workers, the public, and the environment.

We support their use of transformational technologies that will accelerate liquid waste mission completion, saving taxpayers' money and removing and cleaning tank waste ahead of regulatory commitments.

We are pleased that the Defense Nuclear Facilities Safety Board has provided this opportunity to shine light on this very important topic and for their technical safety oversight of the DOE's defense nuclear facilities and activities.

In closing, it appears to us that the community, SRR, SRS, and the DNFSB all agree: expediting the removal of radioactive waste from the SRS tanks is a good thing; it just needs to be done in a manner that protects the health and safety of the public and workers.

And we thank you very much.

DR. WINOKUR: Thank you, Dr. Miller.

Our next speaker is Mr. Brian Tucker, who is the President of the North Augusta Chamber of Commerce.

Mr. Tucker.

MR. TUCKER: Good afternoon. I'm Brian Tucker, President of the North Augusta Chamber of Commerce. The Greater North Augusta Chamber of Commerce represents the interests of the business community in the greater north Augusta area and the central Savannah River area.

The Chamber is funded by area businesses and is not a part of any city, county, or state government agency. The Chamber provides our members a voice in government and helps to improve the quality of life for all through participation in arts, education, and other important community issues.

Simply put, the North Augusta Chamber of Commerce operates to serve our members through promotion, education, and advocacy.

First, let me say that we are proud to be the home of the Department of Energy's Savannah River Site. SRS has played a major role in our national security for more 60 years and continues to serve America in the important areas of nuclear nonproliferation and spent fuel reprocessing.

As a community, we are convinced that SRS management and its contractors, both Savannah River Remediation and Savannah River Nuclear Solutions, are committed to protecting the workers, the public, and the environment, as well as our national security interest.

In our advocacy role we appreciate your interest and oversight regarding safety and emergency preparedness at the Savannah River Site. Furthermore, we share your desire for risk reduction as it relates to the stabilization of high-level liquid waste and closure of high-level waste Tank Farms.

We believe that the large volume of radiological waste in the high-level waste tanks is the greatest risk at SRS, and tank closure is one of the most important activities at SRS. But it must be done safely.

Taking the waste out of the tanks and processing it into vitrified glass logs is the only way to reduce that risk. If only we had a final repository for that vitrified glass, but that's another topic for another day.

The goal should be to reliably complete radioactive liquid waste removal, safely manage the treated waste, and meet all regulatory commitments to close the liquid waste tanks, while at the same time incorporating new technologies and to enhance efficiency and save taxpayers' money as we go.

We believe Savannah River Remediation is accomplishing this mission, and we applaud their efforts and commitment to safety.

I will not be able to join you for Session II, so I would like to share our concerns about the lack of viable disposition paths for nuclear material, especially with the recent news about the operation reductions at H-Canyon and its facilities.

The H-Canyon facilities are a unique national resource. It's the only facility which can process research reactor spent nuclear fuel, surplus highly enriched uranium, and scrap plutonium for beneficial reuse and waste disposition.

Furthermore, we agree with the Community Reuse Organization it is irresponsible for H-Canyon to be placed in a standby or reduced operational status, and we agree with the two-prong approach for SRS, an operational scenario that supports both high-level liquid waste removal and H-Canyon facility operation.

In closing, I would like to thank you for your attendance here today and for the opportunity to express our position and for hosting this session. We support your technical safety oversight role, and I thank you for this opportunity.

DR. WINOKUR: Thank you, Mr. Tucker.

Our next speaker will be Mr. Moses Todd.

(Pause.)

DR. WINOKUR: Is Mr. Todd present? Oh, there you are. Thank you.

MR. TODD: Thank you to the Board. My name is Moses Todd. I'm a former member of the SRS Citizen Advisory Board, a former member of the Augusta-Richmond County Commission, but I'm here today to speak as a citizen, Citizen Todd.

And my comments, Mr. Chairman, is let's talk about social exceptions, the $15 billion DOE buzzword. I take exception to DOE's plan to terminate operations of H-Canyon.

I take exception to DOE's plan to extend storage of high-level nuclear materials at SRS. I take exception to DOE's plan to lay off 800 workers at SRS. I take exception to DOE wasting $15 billion on Yucca Mountain.

I take exception to being illegally laid off because of my safety concerns by Watts Technical Service. And I'd like to present this into the record.

DR. WINOKUR: Yes. We will definitely accept it into the record. Please bring it down and give it to the Deputy Counsel, Mr. Schapira. Thank you.

We have two more people who will speak. They've handwritten their names, and their handwriting is probably equivalent to mine, so it's going to be a little challenging. And I hope I get this right, and if not, please correct me.

Is it Sam Bodner?

MR. BOOHER: Booher. Good evening. My name is Sam Booher.

DR. WINOKUR: Thank you.

MR. BOOHER: I'm a retired Army infantry lieutenant colonel. I have been active with the Savannah River Site Citizen Action Board since before 1993, and have served on and participated on a lot of their committees and subcommittees.

I recently learned through the NEPA [National Environmental Policy Act] process that the Department of Defense [DoD] has already or will soon be signing a memorandum of agreement with the Department of Energy that's going to allow infantry-type training activities to take place on the Savannah River Site.

The main reason why I'm here before you today is that I'm concerned that DoD and the unit commanders that will be training on site may not have been informed of the streams and the sediment -- the condition of the streams and the sediment that have been used in past decades as a way to dispose of highly contaminated liquid waste.

I am aware that there are streams today on SRS that personnel are not allowed to enter unless they are wearing protective suits, rubber gloves, rubber boots that are taped to the uniforms to keep any stream liquid out.

If soldiers are allowed to cross over or enter and travel up and down some of these same streams, they are going to be seriously contaminated.

I do know that these streams are not currently physically marked as off-limits. I do not know if DoD has been informed that these streams even exist. And I do not know if there are plans where unit commanders will be briefed on what streams to stay out of while their soldiers are training on-site.

So I'm here today asking for your assistance to protect our Army soldiers from unnecessary harm and danger. Thank you.

MR. SCHAPIRA: Mr. Booher, could you please spell your name for the record?

MR. BOOHER: Sure. B-O-O-H-E-R.

MR. SCHAPIRA: Thank you, sir.

DR. WINOKUR: Thank you for that statement.

And our final speaker would be Mr. -- well -- Mr. Utley?

(Pause.)

DR. WINOKUR: Well, if I've pronounced that wrong, I'm sorry. Are there any other members of the public who wish to speak on the topic of liquid waste processing or emergency preparedness at this time?

(No response.)

DR. WINOKUR: Well, seeing none at this time, the Chair calls a recess of this public meeting and hearing. We will reconvene at 7:00 p.m. tonight.

Thank you for coming.

(Whereupon, at 4:50 p.m., the public meeting and hearing was recessed, to reconvene at 7:00 p.m., this same day, Thursday, June 16, 2011.)

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

TRANSCRIPT OF PROCEEDINGS

```
PUBLIC MEETING AND HEARING )
                           )
SAVANNAH RIVER SITE        )
```

Pages: 1 through 294

Place: Augusta, Georgia

Date: June 16, 2011

HERITAGE REPORTING CORPORATION

Official Reporters
1220 L Street, N.W., Suite 600
Washington, D.C. 20005-4018
(202) 628-4888
contracts@hrccourtreporters.com

BEFORE THE
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

PUBLIC MEETING AND HEARING)
)
SAVANNAH RIVER SITE)

June 16, 2011
1:00 p.m.

Bell Auditorium
Augusta Entertainment Complex
712 Telfair Street
Augusta, Georgia 30901-2327

BOARD MEMBERS PRESENT:

DR. PETER S. WINOKUR, Chair
JOSEPH F. BADER
DR. JOHN E. MANSFIELD

ATTENDEES:

Xavier Ascanio
Wyatt Clark
Dae Chung
John Dickenson
Fred Dohse
Robert Edwards
David Eyler
David Freshwater
Kevin Hall
Steven Howell
Pat McGuire
Michael Mikolanis
David Moody
David Olson
Geoff Reynolds
Lee Schifer
Terrell Spears

S E S S I O N II

(7:00 p.m.)

DR. WINOKUR: Good evening. We will now resume this public meeting and hearing. My name is Peter Winokur, and I am the Chairman of the Defense Nuclear Facilities Safety Board. I will preside over this public meeting and hearing.

I would like to introduce my colleagues on the Board. To my immediate left is Dr. John Mansfield; to my immediate right is Mr. Joseph Bader. We three and Ms. Jessie Roberson, Vice Chairman, constitute the Board.

The Board's Deputy General Counsel, Rick Schapira, is seated to my far left. The Board's Technical Director, Mr. Timothy Dwyer, is seated to my far right. Several members of the Board's staff closely involved with oversight of defense nuclear facilities belonging to the Department of Energy are also here.

Today's meeting and hearing was publicly noticed in the *Federal Register* on May 17, 2011. The meeting and hearing are held open to the public per the provisions of the Government in the Sunshine Act.

In order to provide timely and accurate information concerning the Board's public and worker health and safety mission throughout DOE's defense nuclear complex, the Board is recording this proceeding through a verbatim transcript and video recording.

The transcript, associated documents, public notice, and video recording, will be available for viewing in our public reading room in Washington, DC. In addition, an archived copy of the video recording will be available through our website for at least 60 days.

Per the Board's practice and as stated in the *Federal Register* notice, we will welcome comments from interested members of the public at the conclusion of testimony, approximately 8:30 p.m. for this session.

A list of those speakers who have contacted the Board is posted at the entrance to this room. We have generally listed the speakers in the order in which they have contacted us or, if possible, when they wish to speak. I will call the speakers in this order and ask that speakers state their name and title at the beginning of their presentation.

There is also a table at the entrance to this room with a sign-up sheet for members of the public who wish to make a presentation but did not have an opportunity to notify us ahead of time. They will follow those who have already registered with us in the order in which they have signed up.

To give everyone wishing to make a presentation an equal opportunity, we ask speakers to limit their original presentations to five minutes. The Chair will then give consideration for additional comments, should time permit.

Presentations should be limited to comments, technical information, or data concerning the subjects of this public meeting and hearing. The Board Members may question anyone making a presentation to the extent deemed appropriate.

The record of this proceeding will remain open until July 18, 2011. I would like to reiterate that the Board reserves its right to further schedule and regulate the course of this meeting and hearing to recess, reconvene, postpone, and adjourn this meeting and hearing, and to otherwise exercise its authority under the Atomic Energy Act of 1954, as amended.

I would now like to move on to why the Board chose to hold a public hearing at the Savannah River Site. First, the Board intends to hold more public meetings in the communities surrounding defense nuclear facilities. Too many of our public meetings are held in Washington, DC, far from those members of the public who have a vested interest in the sites.

We selected the Savannah River Site because it has one of the highest and most varied workloads in the DOE complex.

At this one site, there are operations involving plutonium, enriched uranium, transuranic waste, tritium, liquid high-level waste, low-level waste, decommissioning, and research and development, as well as several major construction projects. These diverse activities are performed by multiple contractors and managed by different organizations within the Department of Energy.

The very complexity of the Savannah River Site creates additional hazards beyond the sum of its individual activities.

There is no way for us to address every potentially hazardous nuclear activity at the Savannah River Site in this forum. Therefore, we have limited ourselves to three topics that we believe are high priorities due to their safety implications: the high-level waste system, emergency preparedness, and nuclear material storage and disposition.

During Session I this afternoon, we discussed liquid waste processing and emergency preparedness. During this Session II, we will discuss nuclear material storage and disposition.

The Board is concerned about how DOE will dispose of nuclear materials in light of the potential termination of H-Canyon and HB-Line processing. Surplus nuclear materials across the complex with questionable storage conditions and uncertain futures were the topic of two Board recommendations: Recommendation 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex*, and Recommendation 2000-1, *Prioritization for Stabilizing Nuclear Materials*.

While DOE has successfully stabilized, at least into interim forms, most of the immediate hazards described in the recommendations, surplus nuclear materials continue to present safety hazards during storage and processing until they reach their final stabilized form, usually in a waste repository.

DOE recently chose not to process spent nuclear fuel in H-Canyon following significant preparations on-site in support of this mission. In conjunction with this decision, DOE began providing direction to Savannah River Nuclear Solutions to prepare for shutting down all processing in the Canyon.

H-Canyon had been the planned disposition path for a large amount of nuclear materials at the Savannah River Site and throughout the DOE complex. While DOE has made some headway in developing new pathways to stabilize a portion of these nuclear materials, there are uncertainties in these new disposition plans.

The site's inventory of aluminum-clad spent fuel is not among those materials that have a new proposed disposition path. Therefore, the Board would like to understand whether extended storage of nuclear materials may cause safety problems, specifically the inventories of spent nuclear fuel in wet storage at the Savannah River Site.

This concludes my opening remarks. I will now turn to the other Board Members and ask if they have opening remarks.

Do you have opening remarks, Dr. Mansfield?

DR. MANSFIELD: Not at this time.

DR. WINOKUR: Do you have opening remarks, Mr. Bader?

MR. BADER: No.

DR. WINOKUR: This concludes the Board's opening remarks.

At this time, I would like to introduce Mr. Mark Sautman, who will provide testimony from the Board's staff on the topic of nuclear material storage and disposition.

Mr. Sautman, I will take your full written statement for the record. Please summarize your written statement in ten minutes or less.

MR. SAUTMAN: Good evening, Mr. Chairman and Members of the Board.

For the record, my name is Mark Sautman. I am one of the Board's Site Representatives responsible for overseeing the Department of Energy's activities at the Savannah River Site, or SRS.

I would like to submit my full written testimony for the record and present an abbreviated version.

In this meeting, the Board is considering the future mission at H-Canyon and HB-Line, and the resulting impacts to the storage missions for K- and L- areas. One thing I must point out up front is that we are not here to debate the nation's nuclear waste or energy policies, discuss the economic impacts to the central Savannah River area, or argue whether the proposed mission change is the best use of the taxpayers' money.

Other federal agencies and organizations are responsible for reviewing the wisdom of DOE's policy and budget decisions. The Board is responsible for ensuring that whatever DOE decides to do, they do it safely.

In 1994 the Board issued Recommendation 94-1, *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex*. The recommendation called for the processing of irradiated reactor fuel and materials in the SRS canyons and for the stabilization and repackaging of plutonium metal and oxide across the DOE complex to meet the 50-year storage standard. It also called for facilities like H-Canyon and HB-Line to be maintained in a usable state.

DOE's August 7th, 2000, Record of Decision [ROD] for the SRS Spent Nuclear Fuel Management Final Environmental Impact Statement [EIS] stated that, quote, DOE will ensure continued availability of the SRS conventional processing facilities until DOE has demonstrated implementation of the melt and dilute technology, end quote, which has yet to occur.

This ROD also stated that DOE would use conventional processing -- i.e., H-Canyon -- to stabilize Sodium Reactor Experiment fuel, as well as failed or sectioned fuel, but this metal and damaged fuel remains unstabilized 11 years later.

This EIS included a no-action alternative in which DOE would continue to store the spent nuclear fuel in the wet basins at SRS indefinitely.

The analysis of that alternative noted that, quote, there would be no means to stabilize spent nuclear fuel that presented a health or safety vulnerability once the conventional processing facilities were shut down. Closed quote. In addition, this alternative is inconsistent with DOE's commitment to avoid indefinite spent nuclear fuel storage at the SRS in a form that is unsuitable for final disposition.

Congress recognized a unique capability provided by H-Canyon in the 2001 National Defense Authorization Act. This Act included a statement that, quote, The Secretary of Energy shall continue operations and maintain a high state of readiness at the F-Canyon and H-Canyon facilities at the Savannah River Site, Aiken, South Carolina, and shall provide technical staff necessary to operate and so maintain such facilities. End quote.

The 2004 National Defense Authorization Act reiterated this position for H-Canyon. In a November 8th, 2002, letter to the Secretary, the Board expressed concern that DOE's plans to operate H-Canyon only until 2006 or even 2009 would, quote, undoubtedly leave additional materials unprocessed and in need of an alternative capability. End quote.

The letter noted that materials like miscellaneous spent nuclear fuel and foreign and domestic research reactor fuel would remain unprocessed if H-Canyon shut down in 2010.

At the time, the Board noted that, quote, DOE's planned actions leave materials unstabilized and without well defined disposition paths, end quote, a concern that remains valid today, nearly nine years later.

In 2006, DOE identified 26 metric tons heavy metal, mostly enriched uranium, of spent nuclear fuel and enriched uranium and plutonium materials across the DOE complex that required a disposition path.

DOE's Office of Environmental Management analyzed various options and determined that processing this material in H-Canyon through the end of fiscal year 2019 provided the, quote, best, most cost-effective alternative for this scope of work. End quote.

The acquisition strategy noted that, quote, no other disposition capability currently exists, end quote, for these materials.

One of this plan's benefits is that the plutonium and the fission products in the spent nuclear fuel would eventually be immobilized in glass logs. This waste form is very stable, proliferation resistant, and greatly reduces the hazard these radioactive materials pose to workers and the public.

When DOE approved this plan, the Board's staff reviewed whether H-Canyon and HB-Line could safely continue to operate through 2019. The staff's conclusion was that the proposed mission extension appeared reasonable.

Our main issue was that DOE needed to start conducting systematic life-extension evaluations. In response, DOE developed an integrated facility-aging management process, but suspended it earlier this year due to uncertainties with the future use of these facilities.

Meanwhile, DOE began a multi-year effort to improve the size and quality of their engineering staffs, improve conduct of operations and radiological protection, and bring the H-Canyon Documented Safety Analysis into compliance with modern nuclear safety standards.

In 2010, DOE approved the new safety basis, and the contractor completed the readiness assessment, demonstrating that H-Canyon was ready to resume processing of spent nuclear fuel.

At this point, I would like to discuss some of the challenges DOE faced in implementing Recommendation 94-1 at other DOE sites.

Often DOE had not gone through their existing special nuclear material inventories to determine which materials needed stabilization or repackaging prior to shutting down their canyons and glovebox lines.

Furthermore, these processing facilities were not maintained very well during the early 1990s. The effort to restart the Rocky Flats plutonium buildings and the Plutonium Finishing Plant at Hanford took several years and hundreds of millions of dollars.

At Hanford 2100 metric tons of spent nuclear fuel in the K-Basins needed processing. While the PUREX [Plutonium Uranium Recovery Extraction] plant could have processed this fuel in an estimated 23 months, DOE deactivated this facility.

DOE ended up spending years and more than a billion dollars designing, building, and operating new facilities that could dry and repackage this spent nuclear fuel.

In addition to the equipment and facility issues, these sites had to go through major efforts to update their safety analysis and retrain and requalify their operators.

Based on these lessons learned, the Board's staff has several concerns with DOE's direction to stop processing at HB-Line earlier this year, flush H-Canyon and HB-Line during 2011, and not process nuclear materials during fiscal year 2012.

The staff believes it is important for DOE to methodically examine and understand the implications of this direction.

First, H-Canyon and HB-Line possess the ability to process a wide variety of actinides and nuclear fuel. H-Canyon is also the last operating, shielded chemical processing facility of its type in the DOE complex.

The staff is concerned that any interim

shutdown due to current budget and policy uncertainties could end up becoming a long-term or permanent shutdown.

Meanwhile, DOE has a large inventory of spent nuclear fuel and nuclear materials at SRS and other DOE sites. Many of these items do not have a demonstrated disposition path, and past plans are uncertain because several key funding and policy assumptions are no longer valid.

Spent nuclear fuel is a prime example. DOE stores more than 10,000 items of aluminum-clad fuel rods, plates, rings, et cetera, containing highly enriched uranium.

In DOE's April 22nd, 2011, letter to the Board, DOE stated that it currently does not have a disposition path for this material but that they are waiting for the recommendations from the Blue Ribbon Commission on America's Nuclear Future.

Based on the draft recommendations released to date by the Commission, the staff is not optimistic that the final recommendations will directly address the disposition of spent nuclear fuel at DOE sites.

Meanwhile, storage space at L-Basin will continue to get more and more limited if DOE continues to receive fuel from foreign and domestic research reactors without processing any of its current inventory.

DOE also stores thousands of items of unirradiated Fast Flux Test Facility [FFTF] fuel and plutonium items that do not meet the specification for feed materials to the Mixed Oxide Fuel Fabrication Facility.

DOE says it intends to dispose of these items in the Waste Isolation Pilot Plant in New Mexico. While DOE safely disposed of many plutonium-residue items at WIPP in the past, the staff is concerned that this disposition path still has uncertainties for those items with high plutonium content.

Disposing items that were originally high-purity plutonium metals and oxides in a waste facility may encounter programmatic and political delays.

If DOE can demonstrate that disposal of these items at WIPP is actually viable, then our concern solely becomes one of ensuring that DOE blends and repacks this materials safely.

A second issue is whether DOE can safely store this plutonium and spent nuclear fuel at the Savannah River Site indefinitely. As a result of past efforts, the large plutonium inventory at the site has been stabilized and packaged in nested, robust cans that are designed to provide 50 years of safe storage.

The DOE standard requires a periodic

surveillance program throughout the storage period to gather information on package performance and the behavior of the container and its contents.

The long-term viability of this surveillance program may be threatened if the site does not have a means to process the material from the opened cans, especially since the site no longer has the equipment to repackage this material back in the cans that meet the plutonium storage standard.

Fortunately, the spent nuclear fuel stored in the L-Area Basin does not require the active cooling that the spent nuclear fuel at the Fukushima reactors requires due to its lower decay heat.

That being said, some of the fuel items at SRS are not ideal candidates for long-term storage. For instance, the Sodium Reactor Experiment fuel consists of thorium and uranium metal stored inside of sealed cans that are submerged in L-Basin. If any of these cans leak, the metal fuel could react with water and generate hydrogen gas.

The staff is concerned that DOE plans to store fuel that is damaged, cut, or with through-clad breaches indefinitely in L-Area. The current condition of many of these items is unknown, since DOE has not inspected them since they were packaged in the 1950s and 1960s.

The staff is also concerned about the incomplete guidance DOE has provided the contractor regarding their expectations for H-Canyon and HB-Line. DOE has provided direction on what remaining materials to process, requested flushing and staffing plans, and discussed the potential for future missions.

While we are encouraged that DOE is exploring a variety of research and development projects, DOE has not received any firm commitments or funding for this new scope, beyond some exploratory laboratory studies.

Meanwhile, Public Laws 106-398 and 108-136 require H-Canyon to be maintained in a high state of readiness. DOE has not clearly documented what specifically is required to maintain this high state of readiness.

What we can say is that DOE direction regarding flushing, going to minimum staff levels, placing the facility in a minimum-inventory condition, and minimizing surveillance requirements does not meet the staff's interpretation of maintaining a high state of readiness.

While DOE has directed the contractor to perform periodic cold proficiency runs, this activity is only a fraction of what is required to maintain readiness at H-Canyon.

The Board's staff believes that DOE can benefit by directing the contractor to develop a resumption plan concurrently with the requested flushing and staffing plans.

Such a plan would discuss how safety and processing equipment would be maintained during the shutdown so that it can be returned to service. It would also discuss how the facility would retain knowledge of the facility's systems and processes.

The lack of resumption plan will likely lead to difficulties in returning the processing equipment and safety system to full operation and reconstituting a qualified and knowledgeable workforce.

This completes my prepared testimony. I would be happy to answer any questions from the Board.

DR. WINOKUR: Do the Board Members have any questions for Mr. Sautman?

MR. BADER: No.

DR. MANSFIELD: No.

DR. WINOKUR: Hearing none, thank you, Mr. Sautman.

I would like to invite the panel of witnesses from DOE and its contractor organizations for the topic of nuclear material storage and disposition to take their seats as I introduce them.

Mr. Dae Chung is the Principal Deputy Assistant

Secretary for Environmental Management at the Department of Energy.

Dr. David Moody is the Manager at DOE's Savannah River Operations Office.

Mr. Patrick McGuire is the Assistant Manager for the Nuclear Material Stabilization Project at DOE's Savannah River Operations Office.

Mr. David Eyler is the Chief Engineer and Vice President for Nuclear Materials Operations at Savannah River Nuclear Solutions.

Mr. Steve Howell is the Manager for Nuclear Materials Disposition at Savannah River Nuclear Solutions.

And Mr. Xavier Ascanio is the Director of the Office of Nuclear Materials Integration at the National Nuclear Security Administration.

Does any member of the panel wish to submit written testimony at this time?

(No response.)

DR. WINOKUR: As before, the Board will either direct questions to the panel or individual panelists who will answer them to the best of their ability.

After that initial answer, other panelists may seek recognition by the Chair to supplement the answer as necessary.

If panelists would like to take a question for the record, the answer to that question will be entered into the record of this hearing at a later time. With that, we will continue with an opening statement by Mr. Patrick McGuire.

I will accept your testimony, Mr. McGuire -- your written testimony for the record, Mr., and I would ask you to keep your opening comments to ten minutes or less.

MR. McGUIRE: Good evening, Chairman Winokur, the Board's staff, Members of the Defense Nuclear Facilities Safety Board, and members of the public.

I appreciate the opportunity to be here tonight to represent the Department of Energy's Savannah River Operations Office and to provide an overview of the Nuclear Materials Storage and Disposition Program at the Savannah River Site.

I also want to thank my colleagues who are joining me on the nuclear materials panel.

Much of the discussion tonight will likely involve the future operations of the H-Canyon and HB-Line facilities. H-Canyon has been in operation since 1955 and has proven to be a flexible, highly capable, unique national asset.

Over its lifetime, H-Canyon has accommodated new missions and processed a broad range of nuclear materials. These have included the recovery of uranium-235 in support of the United States weapons program; the production of neptunium-237 and plutonium-238 oxides in support of NASA [National Aeronautics and Space Administration] missions; and the disposition of large inventories of used nuclear fuel, excess uranium, surplus plutonium, and higher actinide-bearing materials from across the DOE complex.

Over the last three years, H-Canyon has been blending down enriched uranium recovered from the processing surplus unirradiated highly enriched uranium materials to achieve the nonproliferation goals of the United States by converting weapons-usable material to fuel for use in commercial power reactors.

We intend to complete these activities, transferring the remaining low-enriched uranium [LEU] solutions to the Tennessee Valley Authority this year. Subsequently, the facility will be flushed to remove bulk fissile materials early next year, then H-Canyon will continue in an operational mode.

H-Canyon and HB-Line will continue to operate and be maintained in a high state of readiness in fiscal year 2012 and beyond by continuing to receive sample returns from the Savannah River National Laboratory and the F-Area analytical laboratory and disposition the samples to the liquid waste system.

We're continuing to remediate large boxes of legacy transuranic waste such that it can be safely shipped to the Waste Isolation Pilot Plant. We're continuing to maintain operator qualifications and proficiencies on the basic unit operations within H-Canyon and to be able to respond to abnormal conditions.

We're continuing to perform all surveillance and maintenance on those safety systems required to be operable in accordance with the Documented Safety Analysis.

And HB-Line will begin blending surplus non-pit plutonium with an additive, package the material into pipe overpack containers, and ship the containers to the Waste Isolation Pilot Plant.

Completing the highly enriched uranium blend-down campaign this year and completing the flushing to remove bulk fissile materials early next year will position H-Canyon and HB-Line to embark upon new missions.

Among potential new missions, it is proposed that H-Canyon will be evaluated for research and development in key areas to support the development of commercial used nuclear fuel processing.

H-Canyon could be used as a test facility for next-generation safeguards initiative equipment, which includes mock-up capability for process lines, tanks, and containers, mimicking reprocessing facility operations.

H-Canyon may be considered as an alternative to disposition highly enriched uranium and plutonium pit materials and provide plutonium for Mixed Oxide Fuel Fabrication Facility and blending down the highly enriched uranium for use in Tennessee Valley Authority reactors.

H-Canyon will be evaluated for the recovery of special isotopes such as americium 241 from plutonium. H-Canyon will complete research and development work on the vacuum salt distillation process to determine whether impurities can be removed from certain plutonium materials to meet the mixed oxide fuel acceptance specifications.

And HB-Line will be evaluated to purify plutonium-238 to support NASA's outer planet flagship mission.

The flexibilities of H-Canyon and HB-Line provide the Department a unique platform to launch these and other new missions by performing partnerships between the Office of Environmental Management, the Office of Nuclear Energy [NE], and the National Nuclear Security Administration.

In addition to H-Canyon and HB-Line, there are two other facilities that play a key role in the nuclear materials program: K-Area and L-Area. The K-Area complex provides for the handling and interim storage of surplus non-pit plutonium and other special nuclear materials in a safe, secure, and environmentally sound manner.

The Savannah River Site assisted the DOE complex in saving millions of taxpayer dollars through the safe receipt and storage of excess plutonium from the Rocky Flats Environmental Technology Site and the Hanford Site.

Currently, the K-Area complex is receiving surplus plutonium from the Los Alamos National Laboratory and the Lawrence Livermore National Laboratory.

Prior to being shipped, the plutonium is stabilized in accordance with established standards for safe storage. Plutonium materials shipped to the K-Area complex are sealed inside 3013 containers that are nested in robust, state-of-the-art 9975 shipping containers.

Rigorous destructive evaluations are performed on the containers, as well as the plutonium materials, to identify any issues which could impact its safe storage.

No abnormal conditions that pose a risk have been identified, and the Department is confident that surplus non-pit plutonium can be safely stored in the K-Area complex until a final disposition path is achieved.

L-Area provides a capability to safely receive and store a wide variety of used nuclear fuel assemblies from both domestic and foreign research reactors. The used fuel is stored in underwater storage facilities called basins.

All used fuel assemblies are now cool enough to no longer require active cooling. There are currently about 15,000 assemblies in underwater storage. Future plans call for the continued receipt of about 2500 assemblies through fiscal year 2019.

L-Area Basin has space available for additional storage racks to support future fuel receipts even if H-Canyon is not used to disposition the used fuel.

Approximately 100 additional positions will be needed to store high-flux isotope reactor cores, and approximately 200 additional positions will be needed to store domestic and foreign research reactor fuel forecasted to be received through fiscal year 2019.

The Secretary of Energy has determined no processing of aluminum-based used nuclear fuel will occur until the recommendations of the President's Blue Ribbon Commission on America's Nuclear Future are issued and evaluated by the Department.

The proposed use of H-Canyon will still allow the flexibility to process used nuclear fuel or other nuclear materials in the future, should that decision be made.

In the interim, used nuclear fuel will remain in safe wet storage in L-Basin. Any future decision regarding what to do with used nuclear fuel will consider alternatives, such as processing in H-Canyon, placing it in dry storage, or implementing a potential future recommendation from the Blue Ribbon Commission.

The Savannah River Operations Office reviewed the classified nuclear material inventory assessment, which identifies all of the Department's nuclear materials and used nuclear fuel to make sure there are no materials on it that may require future processing in H-Canyon for either disposition or stabilization purposes.

There are currently no surplus nuclear materials in a storage condition that pose a safety risk to facility workers, the public, or the environment, and that need to be stabilized or processed in H-Canyon.

In summary, the nuclear materials program at the Savannah River Site, the facilities involved, and the personnel who operated them played a key role in winning the Cold War.

These facilities performed various important missions for over 50 years. Just as these previous missions were critical to the security of this nation, the future missions involving H-Canyon and HB-Line offer a significant opportunity to address the technical challenges faced by the reemergent commercial nuclear power industry.

As commercial interests in all aspects of the nuclear fuel cycle accelerate, laboratory research and development for existing and advanced fuel cycles can be scaled up and demonstrated in H-Canyon.

H-Canyon has a proven track record to be able to adapt to new missions, to be versatile, to address multiple needs simultaneously, and to meet the nation's need to demonstrate future fuel cycle technologies.

Again, I want to say that I appreciate the opportunity to be here tonight, and my colleagues and I look forward to your questions and comments.

Thank you.

DR. WINOKUR: Thank you, Mr. McGuire.

With that we will continue with questions from the Board Members to the full panel. We'll begin with Dr. Mansfield.

DR. MANSFIELD: Thank you, Mr. Chairman.

You've described a future mission for H-Canyon and perhaps HB-Line as well. And it includes largely -- besides the completed solvent extraction and TVA shipment -- includes largely work for the commercial sector.

Is any of the funded by that commercial sector or by Nuclear -- DOE Nuclear Energy?

MR. McGUIRE: Currently at this time, no. The short answer is no.

DR. MANSFIELD: Vacuum distillation?

MR. McGUIRE: The vacuum distillation -- we are -- that's an Office of Environmental Management funded activity; that is currently being done in HB-Line today.

Over the past year, we processed six -- we ran six cycles of the vacuum salt distillation in HB-Line. The Savannah River National Lab is evaluating the results of that. So far it looks very promising.

DR. MANSFIELD: But there's no plans for any more after that? Nothing funded after that?

MR. McGUIRE: Nothing funded. However, we're retaining that capability. And as -- that process, what it does is it removes the chlorides, primarily, and the impurities, such that some of the non-MOX-able plutonium could be run through the HB-Line facility, remove those impurities to make it meet the MOX fuel specifications.

DR. MANSFIELD: You mentioned plutonium-238. Is there any funding from any source outside of DOE for the plutonium-238 processing?

MR. McGUIRE: Not at this time. However, the key things with those new missions, we're beginning to form partnerships with the Office of Nuclear Energy and the National Nuclear Security Administration.

They've been to the site several times. They've seen the capabilities. They understand the -- with regard to plutonium-238 for the NASA missions. The quality of the material we have done in the past, the quantity and the throughput, so it's nothing that needs to start up today.

But to meet their needs for their future mission, it's something that they're evaluating to put in their future budget request.

The same goes for the Office of Nuclear Energy. We are working with them as they formulate their FY '13 budget. They came to the site also, saw the flexibilities of H-Canyon, saw that we're capable of putting in scaled-up versions in the existing H-Canyon, and so they're very excited about pursuing those research and development opportunities.

But in the FY '12 budget, no, we don't have the funding in the FY '12 budget.

DR. MANSFIELD: So there will be no funding to resume any aqueous operations in the Canyon until some future budget.

MR. McGUIRE: We're maintaining those capabilities. We're going to be maintaining a --

DR. MANSFIELD: I mean, there will be no aqueous operations, no funding to perform aqueous operations by anybody for anybody.

MR. McGUIRE: Well, for -- to process fissile material or nuclear materials through, yes, that is true. We are not processing nuclear materials.

But we're maintaining the proficiency of the equipment. We're going to have a core cadre of operators that are maintaining their qualifications, so that if funding does become available -- okay? -- and we're looking at opportunities with NNSA such that possibly in FY '12 we could do some additional processing of some uranium- and plutonium-bearing materials.

DR. MANSFIELD: So the state, after you complete flushing, of H-Canyon and make -- will you make reductions in personnel costs for surveillance, for readiness, for maintenance, for everything else that it takes to keep the house open?

MR. McGUIRE: At -- yes, when we complete the highly enriched uranium blend-down, after we're -- we're dissolving material today; we're going to continue blending that down.

We'll have that process done by September of this year.

DR. MANSFIELD: And there will be no large cuts in operators?

MR. McGUIRE: Well, that's -- I'm getting to that point.

DR. MANSFIELD: Okay.

MR. McGUIRE: Subsequently, we still need to ship that material to Erwin, Tennessee, where it is subsequently fabricated through various processes and sent to Tennessee Valley Authority.

And then we're going to be flushing. So once we complete those missions and we won't need the number of operators that are there today, subsequently after that mission is complete --

DR. MANSFIELD: So their qualifications will lapse.

MR. McGUIRE: Well, let me -- there's two parts. Okay. There's a set of operators after the blend-down is complete that will no longer be needed.

DR. MANSFIELD: Right.

MR. McGUIRE: Okay. We're evaluating the workforce impacts with the staff to determine how many workers may no longer be needed.

DR. MANSFIELD: Right.

MR. McGUIRE: The second part is very important. We're going to retain a core set of operators that will maintain their qualifications, that will operate the facility and maintain proficiency cycles.

It'll be basically process water and things of that nature to --

DR. MANSFIELD: A smaller one, though.

MR. McGUIRE: A smaller one. That is correct.

DR. MANSFIELD: And do you consider a high state of readiness the ability to maintain just that smaller staff?

MR. McGUIRE: Yes. And let me explain the high state of readiness. Okay? One is we're going to retain that core cadre of personnel, and they're going to maintain their qualifications. They're going to maintain the proficiency of the equipment.

So the proficiency includes loading dummy fuel into cask cars over in L-Area, shipping that to H-Canyon, loading that into the dissolvers. Okay?

Once we get down off the blend-down, we're going to be cycling the other unit operations within the Canyon, so that equipment and that personnel necessary to support that will be retained on-site and their qualifications maintained.

The equipment associated with that will also be maintained.

DR. MANSFIELD: You've been conducting those dummy runs for some time anyway, and they've been very effective.

MR. McGUIRE: Yes. But we're -- today over in

L-Area, in shipping to H-Canyon --

DR. MANSFIELD: Right.

MR. McGUIRE: -- and those have been going on now for a while.

DR. MANSFIELD: But you couldn't even do dummy aqueous operations because you were doing solvent extraction work.

MR. McGUIRE: That is correct. So we're actively --

DR. MANSFIELD: So you haven't done -- there isn't any -- is there any plan to do dummy aqueous work?

MR. McGUIRE: I'll share that -- ask my colleagues to -- Steve Howell to answer that.

MR. HOWELL: Yes. Our plan currently, as you already noted -- currently we are operating solvent extraction operations, aqueous processing to complete the TVA agreement, processing that material.

When that completes in -- currently projected for September, the plan will be to extend our cold run schedule to not only include moving the dummy bundles over and charging operations but also to extend that cold run operation to the solvent extraction cycles, so we would periodically exercise those as well.

DR. MANSFIELD: Would that be sufficient if the Blue Ribbon panel completes its work without mentioning anything -- any destiny for the L-Basin fuel and the Secretary completes his review and comes to the conclusion that, no, we got to process it? Will you be able to with a smaller number of chemical operators?

MR. McGUIRE: The answer -- the answer -- the short answer is yes. Okay?

DR. MANSFIELD: But not four shifts.

MR. McGUIRE: No. It would be a gradual increase -- basically we believe that since we would have a core cadre of personnel whose qualifications are maintained -- and we're going to maintain the systems necessary in accordance with Documented Safety Analysis that within possibly six months to a year we could begin processing a small quantity of fuel. Okay?

In the -- in parallel with that, if the Secretary says process the fuel, we'd go through the budget cycle, get the necessary funding to hire, train, and qualify the additional operators necessary to increase at a higher throughput.

DR. MANSFIELD: Okay.

MR. McGUIRE: So we would --

DR. MANSFIELD: As I understand it, you were ready to go to work at high level and not a low level of work dissolving that fuel. So your capability of reducing that risk has fallen a lot. Would you agree to that?

MR. McGUIRE: I would agree with that. Yes, sir.

DR. MANSFIELD: I guess you really answered it, Mr. Howell.

To increase the realism and effectiveness of the training and maintenance qualifications, you're going to consider at least expanding the scope to include downstream processors -- downstream processes and dummy aqueous operations?

Mr. Eyler?

MR. EYLER: Yes, sir. That is our plan. That's not just considering. That's the direction we received from the Department, and we will --

DR. MANSFIELD: Okay. It's funded, or at least it's in your plan.

MR. EYLER: Yes, sir.

DR. MANSFIELD: Okay. Good. Good.

You will publish your current staffing numbers, won't you, when the -- and what increased numbers -- what the reductions will be and what the increased numbers will have to be if your mission rapidly increases.

We won't have to work that out in the future. Right? You know the size of the teams to do four shifts 24/7, and you know how long it takes to qualify people, so you can tell us to the day, practically, how long it will take to resume operation at a given level.

MR. McGUIRE: Yes. We've had various case studies at a 50 to 70 percent level and then at 100 percent capability; how many staff would be needed; what competencies -- whether they're construction people, crane operators.

DR. MANSFIELD: Right.

MR. McGUIRE: Yes, we have that and what their qualifications would be and how long it would take.

DR. MANSFIELD: But your current plan is to do Monday to Friday day shift, eight-five? I don't know what that would be. Plus a maintenance shift?

MR. McGUIRE: I'll let my colleague, Steve Howell.

MR. HOWELL: Our current plan would be to continue through September on 24/7 operation, operating to deplete the current material we have in the facility, and then --

DR. MANSFIELD: I understand. Almost entirely after that.

MR. HOWELL: Then after that -- you're right -- it would go to a more limited schedule where it would primarily be day operations and on a much slower pace to do periodic cold runs to --

DR. MANSFIELD: Separate maintenance shift?

MR. HOWELL: We would still have some limited shift maintenance, but most of the maintenance activities would be performed on day shift as well.

DR. MANSFIELD: Day shift. So you don't get -- your opportunities for training and doing any odd jobs that come up are limited by the requirement that your 80-hour week or whatever it is is cut by how much the plant's unavailable for maintenance.

How long would it take to inspect the plant, do the testing, repair, you know, dried-out gaskets -- I don't know -- and resume operation of processing equipment? Is it going to be six months or six years?

MR. McGUIRE: Well, the initial campaign, as I said, we're going to be cycling equipment. We're going to be maintaining the surveillance and maintenance on the safety systems.

There are some systems, after we flush the facility, that may no longer be needed since the fissile material and the probability of a criticality will no longer exist once the flush is complete.

We do look at not doing surveillance and maintenance on some of that equipment.

DR. MANSFIELD: But if you resumed the L-Basin fuel work, you would have to worry about those vessels. Right?

MR. McGUIRE: Yes, but primarily the majority of that equipment is electrical-type equipment, not that it has rotating bearings and shafts and things of that nature.

Electrical equipment, we have a high degree of confidence, at least in the near term, that that could be reconstituted with not much difficulty.

DR. MANSFIELD: Yeah, well, that -- I've seen the magical things that your operators do with cranes. Will that proficiency be maintained? Will you have cell covers open so that you can do jumper repairs and jumper movements and centrifuge repairs and things like that?

MR. HOWELL: Again, we would maintain a limited core of that proficiency.

DR. MANSFIELD: Would there be one available at any time, or would you have to wait till he came in?

MR. HOWELL: We would have at least one available at all times, but that would be a reduction as opposed to what we have today.

DR. MANSFIELD: And if you stop providing TVA feed, that only goes till the end of the year, I believe, isn't it? Your TVA?

MR. McGUIRE: Yes. We expect to complete the delivery of the low-enriched uranium to the facilities in Erwin --

DR. MANSFIELD: To Erwin, yeah.

MR. McGUIRE: -- at the end of this year. Yes.

DR. MANSFIELD: Right. And TVA knows that, apparently?

MR. McGUIRE: Yes.

DR. MANSFIELD: Okay. And that's okay with them? Okay, they're not --

MR. McGUIRE: That satisfies our current contract with them.

DR. MANSFIELD: So is there -- are they -- are you going to have to negotiate a new contract if you ever do this again?

MR. McGUIRE: Yes. Yes. There will be a new contract --

DR. MANSFIELD: I mean, who pays for keeping up the line that you're feeding, your line at Erwin?

Excuse me. If they stop buying your feed for Erwin that they're paying for, who -- will the line at Erwin be kept alive or will that have to be reconstituted, restarted? Is the tooling going to be gone? Is somebody else going to move in and take their gloveboxes? What?

MR. McGUIRE: That's outside of the Office of Environmental Management, the Erwin, Tennessee, facilities.

DR. MANSFIELD: So there's little chance -- I'm going to editorialize for a second.

There's little chance that it's going to be economically viable for them to rebuild a fuel -- pay for the contractor to rebuild a fuel capability sometime in the future, when it's been gone for some time.

MR. McGUIRE: They don't operate 24/7 currently today.

DR. MANSFIELD: No, but they have trained people and they have equipment that's taking up the contractor's space.

MR. McGUIRE: Yes, but they -- when they get a sufficient quantity of fuel, they bring the workers in, probably for two months out of every year. Okay? So it's not a round-the-clock operation.

DR. MANSFIELD: I'm going to ask Mr. Dwyer to ask this next question.

DR. WINOKUR: No, I'm actually going to take over.

DR. MANSFIELD: Okay, you're going to take over?

DR. WINOKUR: I'm going to take over. I have a question, and then Mr. Bader and then we'll go to Mr. Dwyer.

I worked in a research organization for about 20, 25 years, and the problem was that a lot of customers came in and wanted to do the kinds of things you want to do, like R&D and the back end of the fuel cycle, nonproliferation.

I didn't like the fact that they didn't want to pay for infrastructure. You know, they just wanted to use the facilities. So I guess along the lines that Dr. Mansfield's been asking you, these new missions sound very good, although you don't have dedicated funding.

Who's going to pick up the tab for the infrastructure necessary for this facility, because it seems to me you've got a lot of equipment that's aging; it needs to be kept up. You need training and so on and so forth.

How does that model work?

MR. CHUNG: Let me try to answer that question.

Office of Environmental Management is poised to provide nominally about $150 million to baseload H-Canyon operation, to be able to support the kinds of activities that our colleagues already described.

In addition, as noted by Mr. Sautman's testimony, we do think that we need to develop a fairly detailed resumption plan so that we can understand from the DOE perspective as well as operator's perspective exactly what steps would be required to be able to able to resume operation involving processing of used nuclear fuel.

So we think that the $150 million would provide necessary funding to be able to satisfy the intent of high state of readiness for the facility.

Meanwhile, we're hoping to partner with other program offices. As you said, Dr. Winokur, it is not easy, but we have begun fairly high-level discussions with heads of these Program Secretarial Offices in terms of coming up with a program or activities that would provide win-win solution for both EM, NE, as well as NNSA.

So although we cannot tell you today in terms of, hey, we're going to have some finite amounts of dollars for next fiscal year, we're hoping that we would continue to work with them to gain additional interest but also some commitment in terms of doing all these R&D activities, quite frankly, are needed, not only for our own disposition path for DOE-owned nuclear fuel, but also for commercial spent nuclear fuel in terms of back end fuel cycles.

DR. WINOKUR: So you'll contribute 150 million. What do you contribute today, or when you were running this mission full scale, what were you contributing for the infrastructure in those days?

MR. CHUNG: In FY '10 we were funding at 220.

DR. WINOKUR: 220. All right. So it's down a fair amount.

You know, we certainly have seen throughout the DOE complex a lot of examples at other facilities, like Los Alamos and others, where they have materials that haven't been processed, and we say, "Why haven't you done anything with that?" And they say, "Because NE won't give us the money or something."

I mean, that's a pretty common thing. It's kind of hard to come up with the dollars when you have users who come in and simply want to use the facility. I think you understand that challenge. Right? Okay.

Mr. Bader has one or two questions, and then we'll move on to Mr. Dwyer.

MR. BADER: Have you specifically defined what you mean by a high state of readiness?

MR. McGUIRE: Defined in writing in a technical document? No, sir.

MR. BADER: So you're planning to do all this without being sure it really meets a definition of a high state of readiness.

MR. McGUIRE: Well, I think the Department is confident that what we are doing after the blend-down program is complete and after the flushing is complete, does meet the high state of readiness.

As I said earlier, we're going to maintain the core cadre of operators necessary to respond to any abnormal conditions. The equipment necessary to resume operations will be maintained.

The safety systems required to be operable in the accordance with the Documented Safety Analysis will be maintained.

MR. BADER: Are you aware of where the words "high state of readiness" came from?

MR. McGUIRE: As Mr. Sautman said, they were in the National Defense Authorization Act of 2001 and in -- amended in 2004. Those are where those words came from, yes, so, yes.

And they were not defined in those documents.

MR. BADER: The House and Senate Armed Services Committees have used the terms 12 times in committee reports and in legislation. If you look at what those committees normally mean when they use that term -- and they use it for a multiplicity of things -- they mean, in terms of ships that have been maintained in the reserve fleet, the ability to go back to sea in three days.

When they talk about a unit deploying, they talk about it in the context of the unit would not be delayed or controlled by the time necessary to bring the units up to an operational status.

Another use is that the units are immediately available for deployment. Do you think H-Canyon would meet those criteria, given what you've told us?

MR. MOODY: If I may, Mr. Bader, we have briefed this definition of high state of readiness to staffers from the Senate Armed Services, from -- for House Energy and Water and Senate.

So we believe this does meet a credible definition of high state of readiness and have communicated that openly to House and Senate staff.

MR. BADER: So this is defined in a document you've given them?

MR. MOODY: This is defined in presentations that have been given to them over the last several months. Yes. We'll be glad to make that available to you.

MR. BADER: And you believe this constitutes a definition which you can be held accountable for in the future?

MR. MOODY: Yes.

MR. BADER: I would appreciate that documentation for the record, please.

DR. WINOKUR: Thank you, Mr. Bader.

Mr. Dwyer.

MR. DWYER: Just continuing along the recovery theme, Dae, [Dae Chung] I believe you mentioned that you do not yet have a resumption plan. Is that correct?

MR. CHUNG: One of the things that we recognized as something that we're going to need as we were prepping for this hearing was in fact a resumption plan that details out exactly what steps would be required for those facility safety systems or support systems that would be laid off as a result of flushing out the lines, and what it would take in detail in terms of resuming those systems, for example, as well as retooling or requalifying additional operators to be able to ramp up in terms of volume of throughput.

So one of the things that we can commit today is to be able to work with the contractor and come up with this very detailed resumption plan such that we can perhaps explain better in terms of what it would take in terms of getting back to full operation from current projection of the facility status that we're envisioning in FY '12.

MR. DWYER: Okay. And as I recall, the direction from the site office to the contractor was to develop basically shutdown plans. Do you now have to direct them to develop this resumption plan or has the contractor already started such planning?

MR. McGUIRE: We directed the contractor to develop flushing plans. Okay?

MR. DWYER: Uh-huh.

MR. McGUIRE: In HB-Line the flushing plan has been implemented, and essentially HB-Line's flushing is complete.

We've directed them to begin implementing the H-Canyon flushing plan subsequent to the dissolution and blend-down of the highly enriched uranium.

So, yes, once that operation is complete, as I said, at the end of this calendar year, we would -- as we turn down systems, we would be aware of what those systems are, the condition that they are left in, such that when they are resumed, we would develop the plan for the resumption.

So, yes, we would need to direct the contractor to develop those resumption plans.

MR. DWYER: Okay. But on the other hand, you've already outlined a recovery action that would take between six months and a year, and I was wondering, how do you decide that if you don't have a resumption plan yet?

MR. McGUIRE: Just from the historical knowledge of operating the facility for -- you know, over the 50 years. We understand what it takes, how many operators it takes, what equipment is needed.

We've done the surveillances and maintenance on those systems that we're turning down, so we understand what operational checks, calibration checks, functionality checks would be needed.

So I think we have a fairly reasonable time frame. And, again, that would not be -- the six months to a year would not be restoring the 100 percent capability. That would be to start the initial throughput campaign.

Obviously it would take, as we're estimating now, up to three years, and that is an estimate, based on how long it takes to hire. We know what it takes to qualify -- train and qualify operators and individuals to perform their functions.

So we have, again, a pretty good understanding of how long that would take. That would -- the details of that would be clearly identified in the resumption plan. And we agree with Mr. Sautman, as Mr. Chung said, that that is a needed document to set us up and identify what is needed to retain back to an operable processing state of used fuel, if that's the decision made.

MR. DWYER: Okay. And I noted that when you were talking about maintaining the high state of readiness, you talked about you're going to maintain the surveillances on the credited safety systems in the DSA, but I thought that you worded that rather carefully.

So is there a difference between the credited safety systems that are required by the DSA now and what will be required after you finish the flushing?

MR. McGUIRE: Yes, there is a difference.

MR. DWYER: I would expect so.

MR. McGUIRE: Once the flushing is complete, as an example, you know, the fissile material and the probability of a criticality would no longer exist, so there are several systems that, the way the Documented Safety Analysis and Technical Safety Requirements are worded is that those systems would no longer be needed. Okay?

And my colleague Steve [Steve Howell] can further explain some of the systems that will be --

MR. HOWELL: Be glad to.

Just as you stated, by design the intent of the flush plan is to remove hazards from the facility. The primary hazards that that will remove would be criticality hazards and hydrogen generation hazards.

So as a result, we would no longer -- for our current safety basis we would no longer require credited operable systems; for example, neutron monitors, nuclear incident monitors, some of the concentration interlocks, for example. And those systems would have surveillances suspended on those.

MR. DWYER: Right. And so then you go back to the question that Dr. Mansfield was asking. And so three years later I say, "Well, we got to resume operations."

I have to bring all those systems back up, do I not?

MR. HOWELL: That's correct. That would require a deliberate manner to go through and test those systems and return them to service. That's correct.

MR. DWYER: And that will be fully fleshed out in your resumption plan?

MR. HOWELL: Yes. That would have to be fleshed out in the resumption plan, although the safety basis outlines what those surveillance requirements are today, but --

MR. DWYER: I understand, but you're going to have to allocate resources and try and figure out which ones can be recovered and which ones have to be torn out and renewed with completely new equipment.

MR. HOWELL: That is correct. We would maintain their functional classification. However, you know, as I said earlier, surveillances would be suspended, so we would have to resume their surveillances and verify they were operable to be credited from a safety basis perspective prior to returning them to service.

MR. DWYER: Okay. And you said up to three years to bring yourself up -- basically up to today's throughput. Is that how long it takes also to qualify the necessary operators?

MR. HOWELL: Yes, sir. We think, as Mr. McGuire previously stated -- of course, it would be a function of time, depending on the time delay between going into the cold-run mode and resuming hot operations. A function of time there would dictate some of these things, but as a general rule we think that it would take two to three years to go out and hire and fully retrain staff to be back up to current staffing levels, and within that two- to three-year period we would also have to go through restoring the functional testing, et cetera, of these systems.

MR. DWYER: Do you have some -- just a working number that you use for if I want to train a crane operator from start to finish, a working time line, and a chemical operator, start to finish?

MR. HOWELL: Typically for a new hire it's on the order of two years, as a minimum, to come in and receive basic fundamental training and then enter the facility and get initial level of qualification. Two years is a good general rule of thumb.

Some of the more challenging operations like crane operators would be more on the lines of three years, as a minimum.

MR. DWYER: Okay. So if it takes me three years to train somebody up to fully proficient, then it's going to take me more than three years to recover to full operation.

MR. EYLER: Well, I think it depends on where you start. I mean, for example, if you're talking a crane operator, you could take somebody who's already in the facility and start qualifying them as crane operators. You bring in new -- you'd have a phasing plan to bring in staff.

So when we came up with that estimate, we were looking at how we would phase people in. Now, we haven't gone into great detail in that, because that's not -- at least based on our understanding, where the Department's going.

You know, full resumption of processing is not something we project in the size we are currently staffed today, so we haven't got to that point yet. But that's -- our initial estimate is based upon that kind of sequencing of people.

We wouldn't take a new hire and then plan to just run them through to make them a crane operator. It would be they'd backfill somebody, and we'd stagger it through.

MR. DWYER: Okay.

DR. WINOKUR: Do you think the $150 million a year that Mr. Chung talked about is going to be sufficient for you to maintain what you're defining as a high state of readiness?

I mean, there's like a $70 million gap there between what you were using for infrastructure and what you're now going to provide for infrastructure. After a few years, what's going to begin to fall off the table? What will you lose?

MR. McGUIRE: The difference between that 150 million, a lot of it has to do with H-Area operations. Let's say we're at the FY '12 limit of 150 million, and if we were to go back up and buy back the processing of used fuel at the 100 percent capacity, we're estimating at FY '12 it would be roughly an $80 million plus-up.

40 million of that would go into H-Canyon, essentially. The remaining of that is over in L-Area, to prepare, casks to ship fuel from L to H. It also supports the fuel exchange for the stainless steel fuel from Savannah River to Idaho, and approximately 15 to 30 million for Idaho to ship material from Idaho to Savannah River.

So the delta of the program is much broader than H-Canyon. Okay. There is a significant portion, obviously --

DR. WINOKUR: 40 million, you're saying, over 150, that's still a 20, 25 percent number.

MR. McGUIRE: It's still a significant number. But we are -- and so that -- obviously that money relates to the workforce, and that workforce, you know, if we go into a modified state of operations, would no longer be needed.

So I am confident that the President's -- FY '12 President's budget request is sufficient to maintain H-Canyon in this -- a modified operation state and in the high state of readiness, as Dr. Moody described, to support the new missions if those missions are, you know, worked out with other agencies.

And that budget also supports the safe storage of the plutonium, the surveillance of the plutonium over in K-Area, as well as some F-Area analytical laboratory work.

So I am confident that the President's budget requests were able to support the missions and the work that we described here tonight.

DR. WINOKUR: I think you know that the President's budget is the high point in this discussion.

MR. McGUIRE: I understand.

DR. WINOKUR: So it could be -- certainly be worse.

Let me ask you one more question about the workforce. What do you think this means to the workforce?

I mean, you certainly want a facility where you have very trained, very expert people.

They're going to see this operation being scaled back, shut down to some extent. The future's very uncertain. How are you going to maintain the quality people you have and how are you going to attract new people so that this could be an enduring mission for you someday? How's that going to work?

MR. EYLER: Mr. Chairman, I think you're on to something. It is going to be a challenge to retain highly qualified, motivated people when -- if your future's uncertain. That's a reality.

What we have tried to do through this process is to communicate, you know, frequently with our workforce of what is happening, not only about what the direction the Department is given but also what we are working on for new missions and new opportunities for the facility.

Through that -- I mean, I believe that open and frank conversation with the workforce and explaining to them what the future holds and what the uncertainties are -- we owe that to the workforce.

Now, what people may decide to do as a result of that information, it's hard to say. I am encouraged, though, that the people that are working in H-Canyon and HB-Line are very dedicated to what they do.

And I think that if we believe that we have a future mission -- and that's what we're working to achieve -- I believe we can retain sufficient people to at least maintain that core capability.

But that's something we've committed to the Department that we would monitor as time goes on. That was in our response to the letter of direction we received.

And as time goes on, we will have to see whether or not we have a risk that's developing or rather a realization of that risk.

As far as recruiting new people, that may be more of a challenge. If there's no future mission per se or perceived, I should say, you know, mission, that may be difficult to recruit new talent.

DR. WINOKUR: Right.

MR. EYLER: On the other hand, we probably will be looking for that new talent hopefully if some of those new missions are realized, and then we will have those opportunities to offer.

So it's a difficult thing to manage, and we're certainly aware of that.

DR. WINOKUR: Okay. I think we want to move on.

DR. MANSFIELD: My last question, I promise. We have to move on.

The Board's obviously very concerned about leaving that fuel in L-Basin, as you'll hear when we move on. If the fuel were reprocessed according to plan, what would be the product? Would you run secondary extraction?

MR. McGUIRE: We'd run the -- our current --

DR. MANSFIELD: PUREX? Full PUREX?

MR. McGUIRE: Well, an H-modified is what we call it. It's an H-modified process. It extracts uranium, and it's -- the plutonium is discarded with other fission products to waste, so it's an H-modified process.

DR. MANSFIELD: Okay. So you're saying -- you don't ever separate the plutonium; it's just --

MR. McGUIRE: Not what we're doing currently. No. Now, that's an asset for some of our other new missions. As I mentioned in my opening remarks, H-Canyon may be considered as an alternative to disposition some of the pits, because it -- we could adjust the chemistry in H-Canyon to separate out the plutonium such that it can be sent to the Mixed Oxide Fuel Facility for -- as it meets its fuel specifications.

Simultaneously we'd be able to extract the uranium, blend it down as we're currently doing --

DR. MANSFIELD: All those sound like reprocessing, and the "re" part of reprocessing gets a lot of attention.

What would happen if you just sent the first-cycle raffinate to the Tank Farms?

MR. McGUIRE: Looking at the -- you mean if the uranium is just --

DR. MANSFIELD: Send the salt there and the uranium and plutonium there.

MR. McGUIRE: It's an option we could look at as we're going future.

DR. MANSFIELD: That does not sound like reprocessing to me.

DR. WINOKUR: All right. We're going to have to move on here.

MR. HOWELL: Could I answer your question, sir?

DR. WINOKUR: All right. Make this a very brief answer. We have so much we need to cover. Let's just finish this up.

MR. HOWELL: I just want to clarify that. Is your answer, "Could we send the plutonium directly to waste from first cycle?" Yes.

DR. MANSFIELD: I withdraw the question. We're getting off track.

DR. WINOKUR: Yeah. I think we're getting a little much -- Mr. Bader has one short question, and then we're moving on.

MR. BADER: Dr. Moody, when you gave that definition to high state of readiness to the two committees, did you let them know that it would be three years between the time you needed -- you knew you were going to have to go back up to operation and the time you got to full operation?

MR. MOODY: The communication that I remember was the six months to a year to come up to operation, and I do not remember a time to get to full operation.

I believe the question that was asked of us in those presentations was, "How long would it take you to return to operation?" And that answer was six months to a year.

MR. BADER: Thank you.

DR. WINOKUR: Mr. Ascanio, we've been neglecting you. I know that you have responsibilities at NNSA to look at a lot of the nuclear materials, and I think you keep a database that tells you what their disposition paths are.

And so one of my first questions to you is what inventories of plutonium items at other DOE sites have no disposition path, or do they all have disposition paths?

MR. ASCANIO: Yes, sir. The database you refer to is called the Nuclear Materials Inventory Assessment, and that is an annual assessment of our inventories.

The -- in general, most of the materials do have disposition paths, and the large quantities tend to be things like pits that are -- and the disposition path would be to be disassembled and be converted to MOX or, in the case of highly enriched uranium, it would be either the dismantled components -- the highly enriched uranium would go to the Navy for use in their propulsion plants or down-blended to be used as a reactor fuel.

So then that leaves relatively small quantities, at places like Los Alamos, of materials that, for one reason or another, do not meet the specifications required to be made either into MOX fuel or for use as fuel in -- for the Navy or other reactors.

But these are relatively small quantities, and a lot of these are things that are either left over from past research and production activities. They're -- oftentimes they're standards, sources, things like that.

So there are some materials that we have not decided a disposition path. Some of those could be candidates for a facility such as H-Canyon, but that's not the only disposition path.

So -- so we're working through that to determine the best disposition paths. If a facility like H-Canyon was operating, say, to process spent fuel, then it may become economically attractive to piggyback on a campaign like that to dispose some of these.

But on the other hand, these quantities tend to be so small that they could not efficiently make use of the capacity of H-Canyon.

DR. WINOKUR: So do you have concerns about the fact that H-Canyon might not be an available disposition path for your materials -- some of your materials?

MR. ASCANIO: Well, we have -- it's something that we're working closely with EM as the plans are developed to see what the windows of opportunity are, but we're also exploring other options as well.

So I would say, you know, we don't have any particular materials that we feel that we are stuck on and have no way to go. We are rather in a decision process, trying to determine what would be the best method for disposing of such materials.

DR. WINOKUR: I thought that's what Mr. McGuire's testimony said, that there are no materials that you have that you don't have a defined disposition path for. Did I misunderstand that?

MR. ASCANIO: I believe what he said was that there's no materials that are of a safety concern that would require processing by H-Canyon, and I believe that's a correct statement.

There are materials that we have not yet decided what the ultimate disposition path will be, but that's not the same as saying that they require H-Canyon disposition. We just haven't made the decisions yet.

DR. WINOKUR: Are there any materials that you had initially penciled in H-Canyon as the disposition path and now that it's not available, you'll be looking at other options and other ways to process that material?

MR. ASCANIO: Yes. There are materials for which people thought that H-Canyon would be a good candidate for disposition. And one of the things you need to understand about the Nuclear Material Inventory Assessment. It's something that's done on an annual basis, so it's snapshot.

And the disposition paths identified in the Nuclear Material Inventory Assessment are the -- what the individual sites who report the materials believe would be the disposition path.

However, that's not the same as saying that a decision has been made that that's the disposition path. So when you look at, for example, the Nuclear Material Inventory Assessment data, I believe the most recent one that the Board's staff has seen was the data as of the end of fiscal year 2009. I don't know if they've seen the 2010 data yet.

So that was information reported back in 2009, before these current plans had been announced, so the people who were proposing those paths did not know about these plans.

DR. WINOKUR: And how much does your database change every year? Do you continue to uncover materials that you need disposition paths from from year to year? Is that a common occurrence?

MR. ASCANIO: We -- well, the database is updated each year, so I wouldn't say that we discover new materials. The proposed disposition paths may change as different decisions are made.

For example, from one year to another a program may decide that certain materials that they have are no longer needed. So in one year they'll be reported as materials with a defined use, and then in the next year maybe --

DR. WINOKUR: All right.

MR. ASCANIO: -- reported as something that has no defined use and with a preliminary disposition path proposed by the site.

So there's those kind of changes. I would say in general it doesn't change rapidly. You know, the things that really change it are, for example, when HEU is down-blended, then that changes the status quite a bit.

When we were doing the big consolidation campaigns, Rocky Flats, Hanford, in those years things changed pretty rapidly. But in other years it doesn't change very rapidly.

DR. WINOKUR: Okay. I have one more question, then I'm going to turn it over to Mr. Bader so that we can discuss the spent fuel at L-Basin in a little more detail.

But, and I think I heard this in the testimony also. You do have material in cans, plutonium materials, and you do have 3013 cans. Right? And you do surveillance on those. True?

MR. ASCANIO: That's correct.

DR. WINOKUR: And if you don't have H-Canyon available, what will you do the material after you do the surveillance? I mean, you don't have a capability to repackage it -- right? -- or recontainerize it.

MR. McGUIRE: That is correct. We do not have a capability to reestablish it in the 3013 configuration. Previously we took those daughter cans, took them to HB-Line. HB-Line is the primarily plutonium processing.

We dissolved that material and then sent it over to the Defense Waste Processing Facility for stabilization in the DWPF canisters.

But that still retains the material in-state. It's in a very stable state, as Mr. Sautman talked about; the vitrified logs are very stable and robust, but it still is in the state, so Dr. Moody had the vision, came from Carlsbad and said, "Well, let's send the material out of the state to the final disposition state."

So we are constituting the capability in HB-Line to take those -- that plutonium from K-Area, bring it over to HB-Line, repackage it, place it into -- blend it with an inert material, repackage it into pipe overpack containers, send that over to our E-Area, solid waste disposition facility, and then ship that to WIPP.

And I believe you're going to tour those facilities tomorrow, so you'll see some of the equipment and the capability that is being installed.

So that is what our disposition path is for the plutonium that we're doing the surveillance on over in K-Area.

DR. WINOKUR: Okay. Thank you.

Mr. Bader?

MR. BADER: I wanted to start out asking Mr. Chung, you've got a Record of Decision that's approximately 11 years old that committed you to use conventional processing to stabilize Sodium Reactor Experiment fuel and failed or sectioned fuel from the Heavy Water Components Test Reactor, Tower Shield Reactor, HPRR, [Health Physics Research Reactor] and the Oak Ridge reactor.

How are you going to comply with that ROD, or do you intend to modify the ROD?

MR. CHUNG: Some of those use nuclear fuel that is not in the best conditions. We have asked the site to perform a study to reevaluate the conditions as well as any future actions that the Department needs to take to make sure that those fuel inventories that you've mentioned could still be stored as an interim strategy in L-Basin.

And it's my understanding that that study has been completed as of April of this year. That requires some additional actions.

Maybe Pat [Patrick McGuire] or our colleagues from SRS can elaborate, but we intend to follow those recommendations from this study to ensure that we can continue to store them safely in L-Basin.

The ROD that you're mentioning also included melt and dilute as our preferred methodology or technology at the time. You've seen various optional studies that the Department has performed over the years in terms of that particular option versus other options that we have evaluated, including processing in H-Canyon, dry storage, as well as continued wet storage in L-Basin for more than 30-plus years.

So we think that we still are meeting the intent of the prior decision in terms of making sure that we can store the spent nuclear fuel in a safe manner until a final decision can be made.

Whether it's going to be a melt and dilute or processing in H-Canyon or any other method, we believe that the key strategy here is to make sure that we can continue to store in L-Basin.

MR. BADER: If you continue to store in L-Basin, that means you're committed to expend $150 million each year to keep the H-Canyon in a high state of readiness -- is that correct -- indefinitely?

MR. CHUNG: Well, hopefully we will be making some more finite decision in terms of whether or not we're going to -- you know, because it -- whether we store in the L-Basin or we opt for dry storage configuration, it's going to take some capital cost. It's going to take additional funds.

So we're hoping that as we go through the FY '12 and also see what the country is going through in terms of the fiscal challenges, we're hoping to make more refined decisions in terms of what to do with user nuclear fuel.

Obviously the recommendations from Blue Ribbon Commission will play key role in terms of getting some sense as to whether or not we should continue to store, whether wet storage would be acceptable from a safety standpoint, whether we need to start thinking about dry storage option, or whether it would be prudent, economically as well as technically, to process the fuel in H-Canyon.

So I hope it's not going to be indefinite condition that we have to maintain in terms of satisfying the high state of readiness, but something that we can maintain for time being and making sure that all of the nuclear materials, as well as the spent nuclear fuel, can be stored safely.

MR. BADER: Let me go to the -- you touched on one thing that's of concern, and that is some of these canned pieces of fuel and fuel materials have on occasion leaked.

Without H-Canyon, how are you going to handle any future leakers or any future canned materials that you find you're having problems with?

MR. CHUNG: I'm not personally aware that the sealed fuel cans have actually leaked while stored in L-Basin --

MR. BADER: I believe there's a couple of cases where they have.

MR. CHUNG: In the past.

MR. McGUIRE: Yeah, in the past, and in the past we also have overpacked some of those leaking cans. We also demonstrated a capability in those cans to deionize some of that water to mitigate some of the corrosion that is taking place.

So you are correct; there is some vulnerable fuel. We're well aware of that. Mr. Sautman portrayed it very well.

The Savannah River National Laboratory, the report that Mr. Chung spoke to, addressed that also, and their final conclusions were that the used nuclear fuel, including some of this vulnerable fuel, could be safely stored for an additional 50 years or beyond using our current management program, as well as augmented by some additional requirements and surveillance and maintenance, and that's what Mr. Chung spoke to.

So we have a very good water chemistry program, but we do -- to answer the question, we need to further evaluate what to do with some of that, you know, damaged fuel that was taken out of earlier reactors, some of the cut fuel, the declad fuel.

It is overpacked. It's in either sealed or vented containers. We're aware of that. And it does present some challenges; you're absolutely correct.

And if the decision to not process fuel is deferred for some period of time, we need to develop that additional augmented surveillance programs for that material.

But the Basin itself, the concrete structure, is very sound. The water chemistry program is very sound. The general aluminum fuel is very sound. We don't see any abnormal areas of corrosion or pitting or anything of that nature, but it is this very small percentage of vulnerable fuel.

If it does present a problem, okay, that is one of the things we feel confident that the cadre of people that we're retaining in H-Canyon and the systems that we're maintaining in H-Canyon, if there is some urgent, imminent safety issue -- which does not exist at this time and the Savannah River National Lab did not expect anything soon, but H-Canyon would be able to process and stabilize some of that material. Okay?

We would be able to, as we stated earlier, within that six-month time frame, hope to a year, be able to get to that point. So one of the things is we need to develop a program.

MR. BADER: But what you're basically telling me is you're going into a period of uncertainty with this fuel. You're using words like, "The lab says it's not going to have a problem soon."

MR. McGUIRE: You are correct. There is not an imminent safety issue that we are aware of that we have seen, but we are aware we cannot defer indefinitely. We need to be proactive. We need to take some additional actions to ensure that that condition and the analysis that the lab has documented is true.

MR. BADER: What happens if you develop a problem and you don't have H-Canyon there?

MR. McGUIRE: Well, some of the fuel we could repack -- you know, overpack like we have done before. We could deionize, as I --

MR. BADER: Isn't there a limit to what you can do in terms of overpacking?

MR. McGUIRE: Yes, sir.

MR. BADER: Okay.

Peter?

DR. WINOKUR: Well, I'm still trying to see what the path forward here is. You say it's good for 50 years, but you're not going to keep it in the pools for 50 years. Right?

MR. McGUIRE: I would hope not.

DR. WINOKUR: So what's the plan? I mean, what do you think from the Blue Ribbon Commission you're going to learn that's going to help inform the decision you need to make about how to treat the spent fuel in those -- in that pool?

MR. McGUIRE: The alternative -- dependent upon the recommendation of the Blue Ribbon Commission, obviously we could process it in H-Canyon. We could continue to store it. We could look -- we are looking and can look at dry storage alternatives, either for an interim dry storage period or for a dry -- for a capability similar to kind of a universal federal repository in a dry storage configuration, such that it would meet any standards of any federal repository when those standards are identified.

But we are looking at options and alternatives that include dry storage, either interim or long term, continued wet storage processing, or something else that the Blue Ribbon Commission may recommend.

DR. WINOKUR: Do you think that dry storage provides an advantage to you over processing it in H-Canyon? I mean, you have to get the stuff out of the pool; you have to repack it. Right? It's a significant undertaking with worker exposures and things of that nature?

MR. McGUIRE: It would be a significant investment in resources, dollars. There would be exposure. Yes. So it is an alternative.

MR. BADER: And I would think -- I mean, I'm not sure whether you feel comfortable commenting on this, but wouldn't this be a pretty high proliferation risk to store -- dry store some of this material?

MR. McGUIRE: The Savannah River Site is a very secure site. Commercial nuclear is dry-storing material.

MR. BADER: Yeah. Commercial Nuclear is dry-storing depleted uranium fuel. I mean, that's high burn-up stuff. Number one, it's hot as a pistol. Number two, there's nothing much left in there that's attractive to anybody.

MR. McGUIRE: But with regard to dry storage, if we -- if an alternative is selected such that that's the direction we go, as I said, the Savannah River Site is a very secure Site; L-Area is a secure area.

So I feel very safe, from a proliferation standpoint, that it would be okay.

DR. WINOKUR: Okay. Have you seen anything in the Blue Ribbon Commission draft that you think is obviously going to inform your decision that -- is your decision really going to be easier to make next spring than it is now?

MR. McGUIRE: He's looking at you, Dae [Dae Chung].

MR. CHUNG: What we're looking for is at least some either full endorsement or some latitude given in terms of being able to process or reprocess, so that any actions that we might take in terms of processing used nuclear fuel, which is only 1 percent -- less than 1 percent of the total used nuclear fuel inventory that we have within the Department --

DR. WINOKUR: Right.

MR. CHUNG: -- so it's not a large quantity, so that, you know, the actions that we might take would not be viewed as something that is entirely against what the national policy would be for dealing with commercial spent nuclear fuel, as well as any future R&D activities that the Blue Ribbon Commission might be recommending in terms of either aqueous or dry reprocessing technology.

So we're trying to be very mindful of this critical decision or policy recommendation that BRC would be making for, quite frankly, a very large amount of spent nuclear fuel inventory that this country has in the commercial sector, so that our decision would become copacetic with the national policy recommendations that the President and then Secretary of Energy would be going forward.

We think that is a prudent policy posture at this point, and we're hoping that their recommendation would give us, one way or the other, clearer a path forward so that we can be a bit more definitive in terms of the options that we have to further study to make sure that we can store and disposition spent nuclear fuel in a safe manner and also very economically feasible manner.

DR. WINOKUR: I'm sorry. One way or another, do you think you're going to have this fuel in L-Basin in 10 years?

MR. CHUNG: I would think so. But even if we were to start reprocessing fuel in FY '13, depending on the funding level, it may take up to 2026, 2027 time period, so we are looking at large fraction of the fuel still remaining in L-Basin.

That's why the study that has been updated by the National -- Savannah River National Lab is a critical piece of what we need to do to further ensure going forward.

MR. MOODY: The schedule -- the current schedule of receipt into L-Area runs through 2019, so I think we can be pretty much assured that we'll continue to have fuel in L-Area in 10 years.

DR. WINOKUR: All right.

Mr. Dwyer, do you have a final question you want to ask there?

MR. DWYER: Just a clarification, I guess.

Mr. McGuire, I believe you said that there is some fraction of the fuel in L-Basin that is in a vulnerable state; perhaps hasn't been looked at for a while.

And I was trying to decide what exactly is "surplus nuclear material that poses a safety risk?" What is that? That's the phrase that we kept hearing: "There are no surplus nuclear materials in storage that pose a safety risk."

How do I equate that with what you said, that there are some materials in L-Basin that are vulnerable?

MR. McGUIRE: In my opening remarks, you are correct, I made the statement "that pose a safety risk." In my -- in those words something that's imminent that we need to deal with today, tomorrow. Okay?

The vulnerable fuel I don't believe is an imminent safety risk, and therefore I believe there's a distinction between those two terms.

MR. DWYER: So you said "pose a safety risk." What you meant was an imminent safety risk.

MR. McGUIRE: Yes. Something that would need --

MR. DWYER: Because don't all the surplus nuclear materials pose safety risks? That's why we treat them with care?

MR. McGUIRE: Yes. And that's why -- clarification. I probably should have said imminent or something of that nature, just for clarification. Yes.

MR. DWYER: All right.

Mr. Chairman.

DR. WINOKUR: Okay. Mr. Bader has a comment, and I have a final comment, too, and then I think we're going to head on to the public comment period.

MR. BADER: My comment's in the form of a question.

DR. WINOKUR: I'm sorry. I thought you were going to get away with a comment.

(General laughter.)

MR. BADER: What I don't understand, listening to all this, is why are you taking a perfectly good functioning facility that can process the spent nuclear fuel you've got and dispose of it, suspend operations and, in the process, introduce the whole range of unknowns that we've discussed this evening?

I mean, to me, it's -- if anybody could help by answering that question, I would really appreciate it.

Dr. Moody?

MR. MOODY: I believe that we will be successful in implementing some of the elements of the new vision as early as fiscal '12. With some of the discussions that we're currently having -- the questions were asked, do we currently have those funded and on the books to start. The answer is no.

But I believe that we have opportunities within fiscal '12 so that we will not be in a state of high readiness for a long period of time. I think we will be moving into initial research and development or we will be working off some of the nuclear materials and exercise the capability of the canyon.

So I think there are a number of options beyond used fuel to exercise the capability of the canyons and accomplish Department mission, and I'm optimistic that we'll be in a position to exercise one or more of those in fiscal '12.

MR. BADER: Well, I guess I will make a comment then.

I would -- to me the conservative thing would be to keep the H-Canyon operating and, when you have an alternative, then take some action and not base it on optimism.

So I did make a comment.

DR. WINOKUR: And I would just end by saying, before I thank you all very much, is I know you have a new vision. We've seen it. It's your job, I guess, as Site Manager to be looking at the future, but I think there's an old vision and a commitment here, and I think we feel very strongly on the Board that this is the last chemical processing facility; it has unique capabilities for the nation.

I would kind of debate whether it really is going to be in a high state of readiness or not. We could talk about what that exactly means. My sense and experience with these things is that once you begin to slow these operations down significantly, you'll have a difficult time maintaining a high-quality workforce, you'll have a difficult time reconstituting the operations, and you'll pay a lot of money to do it in the end if you want to come back up to speed.

And I guess that's it, so I think it's been a good discussion. I think you understand our concerns, and I think we'll hear from the community, some of their concerns here about maintaining this facility.

We do believe on the Board that it is a vital national resource, a critical thing, so I do hope that this high state of readiness you have in mind is one that really does keep it positioned to do an important job if it has to.

Maybe we have to wait till the Blue Ribbon Commission makes its decision, but once it does, that you're capable of moving forward with that.

So I thank you very much, Mr. Chung, Dr. Moody -- I got to read these names here -- Mr. McGuire -- I know you, Mr. Eyler; pleasure seeing you again, sir --

Mr. Howell, and Mr. Ascanio. Thank you.

(Pause.)

DR. WINOKUR: At this time, per the Board's practice, and as stated in the *Federal Register* notice, we welcome comments from interested members of the public.

A list of those speakers who have contacted the Board is posted at the entrance to this room. We have generally listed the speakers in the order in which they contacted us or, if possible, when they wished to speak.

I will call the speakers in this order and ask that speakers state their name and title at the beginning of their presentation.

There is also a table at the entrance to this room with a sign-up sheet for members of the public who wish to make a presentation but did not have an opportunity to notify us ahead of time.

They will follow those who have already registered with us, in the order in which they have signed up.

To give everyone wishing to make a presentation an equal opportunity, we ask that speakers limit their original presentations to five minutes. The Chair will then give consideration for additional comments, should time permit.

Presentations should be limited to comments, technical information, or data concerning the subjects of this public meeting and hearing. The Board Members may question anyone making a presentation to the extent deemed appropriate.

The first speaker is Dr. Clint Wolfe. He is the Executive Director of Citizens for Nuclear Technology Awareness.

Dr. Wolfe.

DR. WOLFE: Thank you. I am Clint Wolfe; I'm the Executive Director of Citizens for Nuclear Technology Awareness, or CNTA, and we're headquartered in Aiken, South Carolina. I'm also the public policy task force Chair for the Carolinas Nuclear Cluster.

I'm here tonight to add my organization's voices to the many others who want to urge the preservation of the unique capabilities that H-Canyon and HB-Line possess.

In the late '90s, I served on a technical advisory panel to the DOE's plutonium focus area. I also chaired that panel for a time as we addressed the appropriate disposition paths for materials singled out in the DNFSB's 94-1 communication.

My position at the Savannah River National Lab at that time included responsibilities for actinide chemistry, and as such we provided flow sheet development and demonstration for a number of plutonium- and uranium-bearing materials.

The functional performance requirements for dealing with 94-1 materials often were predicated on not generating high-level liquid wastes, so H-Canyon and HB-Line were often excluded from consideration for special materials.

Instead, we went through a whole host of specialized approaches for each material, none of which had the benefit of ever having been demonstrated in a production mode.

We now know that SRS is quite capable of dealing effectively with the high-level waste, as witnessed by the 3000-plus canisters of high-level waste glass. We progressed to this point with continuous improvements in operations and in a manner that protected worker and public safety.

There's plenty of important work for H-Area to do and, indeed, one can argue that safety is not served by failing to use these unique facilities to process materials that we know must be dispositioned.

Examples include MOX-able plutonium-containing materials, uranium- and plutonium-containing residues and, of course, domestic and foreign research reactor fuel currently housed in L-Area.

The ability of SRS to deal with these materials effectively and safely is unmatched anywhere else in our nation. The close integration of the capabilities in the Savannah River National Lab and the experienced workforce in H-Area provide the ingredients to do this job successfully.

In so doing, we would preserve the capability to eventually provide for the research, development, and demonstration of nuclear fuel recycling, which many believe is a path that we must follow as a nation.

I urge you to recommend that H-Canyon and HB-Line remain operational until these materials have been stabilized and that operations be supported with a view toward maintaining our only national asset capable of safely addressing these issues.

Thank you for the opportunity to comment.

DR. WINOKUR: Thank you, Dr. Wolfe.

Our next speaker is Mr. Ronnie Young, who's the Chairman of the Aiken County Council.

Welcome.

MR. KILLIAN: Good evening, Chairman Winokur, Members of the Board. My name is Clay Killian. I'm here on behalf of Chairman Young. He had an unavoidable conflict occur late this afternoon and sends his regrets for not being able to be here.

But he has asked that I read his statement into the record, if that is permissible.

DR. WINOKUR: Please.

MR. KILLIAN: "I represent the citizens of Aiken County, the flagship community that for decades has been an ardent supporter of the Savannah River Site.

"The benefits derived in our community from the presence of SRS goes far beyond the financial support and commerce we have grown to enjoy. In fact, SRS has been a central part of our community life.

"On a daily basis, its employees contribute to the quality of life in Aiken County. Through their volunteerism and commitment, SRS employees have helped create a community culture in Aiken that is the envy of most, and we're very proud of that fact.

"It's that same level of commitment that we know has shaped the business and management culture of SRS throughout its history. We live and work in our communities with the assurance that SRS is, as it has always been, operating safely and securely while providing its vital mission and services to our nation.

"Nuclear technology is the centerpiece of SRS. We know that the Department of Energy has selected the best companies to operate the site. We also know that those companies have expertise in the field of nuclear materials management that is second to none. We like it that way, and in fact we demand it, and they have always delivered on that promise.

"So we are a bit perplexed when we hear that SRS may be losing one of its most vital assets. The obvious question that we and many others have is why would we begin to see the phase-out of vital nuclear operations assets at SRS when there is still so much to be done.

"We expect the site's liquid waste to be properly managed and disposed of. That, too, is a given. But we were surprised and disappointed to learn that the future of the nation's remaining nuclear chemical separation facility was in doubt.

"Specifically, I'm referring to the future of H-Area chemical processing facility, or H-Canyon. This is especially disturbing when you consider that the future missions of SRS may very likely hang in the balance with any decision made on H-Canyon.

"While it's important to our community, you should know that the same sense of patriotism that allowed the plant to be built and operated here for over six decades is very much alive and living in Aiken County today, and our consent and support are very important aspects to the continuing future of SRS.

"I'm sure that I may be preaching to the choir, but H-Canyon should not be shut down. There are a number of real reasons that we oppose this. First, to serve the nation's nonproliferation commitments. There may be more than 15,000 used fuel assemblies stored at SRS when all is said and done. Without H-Canyon operations, they will not be processed for final disposition. That could make Aiken County a permanent repository for those fuels. We'd prefer for that not to happen.

"Second, the nation needs to solve the lingering questions regarding closing the back end of the nuclear fuel cycle. Without H-Canyon operations, our country loses a valuable platform to conduct meaningful research and development that could provide those essential solutions.

"And third, waste currently stored at SRS could one day be looked to as fuel for new reactor designs. Without H-Canyon operations, we lose the ability to create fuels from waste that could provide energy and process steam for a wide range of services.

"The bleak prospects for H-Canyon just seem intuitively wrong to all of us, and we hope that it does to you as well. I would ask that you look at the future of SRS, its safety performance, its nuclear materials management and emergency response.

"Please be reminded that the site's operating contractors and the national laboratory have amassed a superb safety record throughout its operating history, and we're very fortunate they have.

"The expertise in nuclear materials management for its operations and laboratory are without peer, and we're very fortunate for that as well. And its ability to address complex nuclear operations challenges, emergency or otherwise, are built on a long-held commitment to detail and technical expertise, and we are surely fortunate for that.

"In closing, Mr. Chairman, we appreciate the mission and authority of the Defense Board and are confident that your role will help make an excellent SRS even better. Our hope is that your leadership will also help make a promising future for SRS even better, as well."

Mr. Chairman, Members of the Board, we thank you for having this meeting in our community and for the opportunity to present to you tonight.

DR. WINOKUR: Thank you for those comments.

Dr. Marc Miller is the Vice Chairman of the SRS Community Reuse Organization.

Welcome back.

DR. MILLER: Thank you.

Again, I'm Marc Miller, and I'm the current

Vice Chair of Savannah River Site CRO or Community Reuse Organization and the Dean of the Hall College of Business at Augusta State University.

In the capacity of Chair-elect of the CRO, I'm here this evening and am pleased to offer our comments to the Defense Nuclear Facilities Safety Board.

In our view, H-Canyon is a one-of-a-kind facility of immense importance to this nation. We believe it is irresponsible for H-Canyon to be placed in a standby or reduced operational status, and based on the Defense Nuclear Facilities Safety Board's letter to Secretary Chu dated February 28th of this year, you believe the same thing.

In our view, the facility also has an important role in developing and evaluating the research and deployment options for the back end of the nation's nuclear fuel cycle.

In addition, the HB-Line provides various options for the disposition of limited-plutonium materials which are not suitable for the feed -- as feed for MOX. However, we also believe it is essential that high-level liquid waste be removed from the aging underground tanks at SRS in an expeditious manner. All funding and site operational scenarios need to advance this two-prong approach, not one activity over another.

We've been briefed concerning the Department's intent to safely store research reactor fuel in L-Basin and possibly in an approved aboveground storage facility. However, this action does not meet our community intent to see this material processed and ultimately removed from Savannah River Site. This can only be accomplished by processing the research reactor fuel in H-Canyon.

The Department should not wait on the Blue Ribbon Commission report to take this action. Furthermore, the Department needs to move quickly with an NEPA supplemental analysis to reinstate H-Canyon as the preferred treatment option for research reactor fuel.

We are concerned that placing H-Canyon in a minimized operational mode may not be financially retrievable, jeopardizing its future for national interests.

H-Canyon is needed to process spent fuel stored in the L-Basin pools. Without it there is no disposition path out of SRS and our community for this nuclear material, which is an extremely important issue for us.

With this action, the potential loss of highly trained and unique workforce is also in jeopardy, which is also a very important concern to us.

As your own letter points out, the H-Canyon facility has proved to be an effective and valuable asset for safely processing fissile materials over several decades. We could not agree more.

We support the efforts of the Defense Nuclear Facilities Safety Board to keep the H-Canyon facilities operating and hope you will continue your efforts. We plan to continue our dialogue with DOE officials and our congressional delegation to keep this unique national resource available for processing our nation's nuclear materials.

We thank you again for this opportunity to voice our concerns, and we appreciate you coming to the Augusta community, and on behalf of Augusta, we welcome you.

Thank you.

DR. WINOKUR: Thank you, Dr. Miller.

Next speaker is Dr. Rose Hayes, also with the -- well, she's with the SRS Citizens Advisory Board [CAB].

Welcome.

DR. HAYES FOX: Thank you.

Mr. Chairman, distinguished panel, staff, my name is Dr. Rose Hayes Fox, and I am a member of the Department of Energy Site-Specific Advisory Board for the Savannah River Site. I also Chair the Nuclear Materials Committee of that Board.

I have comments this evening as Chair of the Nuclear Materials Board and as an individual who resides in the area, and I also have a letter from Donald Bridges, who chairs the Advisory Board but is in Las Vegas at the Executive Committee Advisory Board meeting and cannot be here and asked that I read his comments, with your permission.

DR. WINOKUR: Proceed.

DR. HAYES FOX: Thank you.

"My name is Donald Bridges. I am Chairman of the Savannah River Citizens Advisory Board, but I am speaking as an individual. I've asked that my comments be read by another member of the Citizens Advisory Board, Rose Hayes, since I am out of town on CAB business and unable to appear in person.

"I do appreciate very much the fact that the Defense Nuclear Facilities Safety Board has provided the opportunity for the public to provide input on this very important topic. Thank you very much.

"My comments are based on my involvement in the Citizens Advisory Board for the last 3-1/2 years and 30 years prior to that as an employee of DOE at SRS as a program manager.

"With that backdrop I will provide the following views. Relative to liquid waste processing, I feel that both DOE-SR and Savannah River Remediation are doing a relatively good job of disposing of the 37 million gallons of liquid waste.

"It is a massive, complex, expensive effort which, in my view, is being well managed. Their progress to date indicates that they are carrying out this mission in a safe, responsible manner. I encourage them to continue to assess measures for cutting the cost and schedule.

"Relative to the plans to scale back operations in H-Canyon, I disagree with the plan to cease PUREX operations in H-Canyon on two counts. One, it is a mistake in that SRS will no longer have the capability to process both foreign and domestic fuel, which will be continually shipped to the site for many years to come.

"The spent nuclear fuel will be stored in a water basin, which will require expensive upgrading to expand the basin's storage capacity. Storing spent nuclear fuel in water subjects it to corrosion, and if an assembly is breached, disposition will be difficult, since there will no longer be capability for processing.

"This concept will embrace bringing in additional spent nuclear fuel to SRS with no capability for processing now or in the foreseeable future. In my view, this is not in the best interest of the site or the general surrounding area.

"Continuing to bring in nuclear materials without a viable disposition path does not seem to be responsible cleanup strategy.

"Secondly, the loss of the PUREX capability in the H-Canyon, which is a unique capability for the entire United States, is tantamount to eliminating the processing capability for the entire DOE complex.

"In the event that nuclear materials are found in the future which require chemical processing, DOE will have lost the necessary processing capability for dispositioning such materials. This seems, in my view, to be extremely shortsighted.

"Additionally, measures taken to reduce the full operational capability of the H-Canyon will make it very difficult to ever return to that capacity again.

"Relative to a funding strategy for the site, I would submit the concept of making the liquid waste disposition program a top priority item, followed closely by the operation of H-Canyon for processing spent fuel inevitably destined to arrive at the site. Surely in a budget of almost $1-1/2 billion there are many other lesser priorities for achieving reductions.

"Relative to plutonium disposition, I support and encourage the ongoing programs to ship some of the low-quality material to WIPP while using the high-quality material for MOX. However, the plutonium disposition program has been studied, assessed, planned, reviewed, and scrutinized for approximately 15 years. Please stop the planning and get on with a definite plan of action with an energetic schedule and firm commitments.

"Thank you for this opportunity to make my views known. Donald Bridges."

DR. WINOKUR: Thank you, Dr. Hayes.

DR. HAYES FOX: May I make my comments in addition to Dr. Bridges's?

DR. WINOKUR: Briefly, please. Thank you.

DR. HAYES FOX: Thank you.

Thank you for receiving input from the public on this very important issue relevant to the safety of the central Savannah River area and to all Americans.

There are several possibilities currently under consideration for the future of H-Canyon. The Canyon dissolution and processing of highly enriched uranium materials to meet the current HEU blend-down commitments to TVA will be completed in September 2011.

The 2012 Obama administration budget calls for closing H-Canyon and flushing its systems by December 31, 2011. DOE has suggested that it may be possible to reduce operations to a min-safe level with a prospect of bringing the facility back to full operational capability at a later date.

The Nuclear Materials Committee of the DOE Site-Specific Advisory Board for the Savannah River Site has forwarded to DOE two recommendations regarding H-Canyon. Recommendation 275 essentially recommends that H-Canyon be viewed within a framework that -- and I -- well, we'll submit this in writing, but which simply finds work utilizing all the capabilities and capacities that Patrick McGuire formally described to you.

Recommendation 276 essentially recommends that in this latest phase of what can only be described as the nuclear policy of delay, the Blue Ribbon Commission may possibly recommend that UNF be reprocessed as opposed to stored indefinitely in a national repository other than Yucca Mountain, and H-Canyon could provide the research and development efforts required for that technology.

And, B, the possibility be considered that on-site materials currently stored in L-Basin could be fed to R&D reprocessing technology, thereby providing a disposition path for those materials and supporting SRS program efforts in a cost-effective manner.

In sum, H-Canyon is important for the above reasons and other capabilities including environmental stewardship of SRS by dispositioning TRU waste, non-

MOX-able plutonium, lab and SRNL returns, and HEU aluminum-clad fuel.

National security, since it can disposition HEU and plutonium pit materials, recover special nuclear materials, be a test facility for next-generation safeguards, initiatives, and blend-down HEU from aluminum-clad fuel to low-level uranium and, finally, clean energy efforts, since it can be utilized as a robust and flexible platform for advanced fuel reprocessing R&D; utilized in distillation technology to purify non-MOX-able plutonium into MOX feed; blend HEU to LEU, providing fuel for electrical power generation and commercial reactors; and for the purification of plutonium-238 to support the NASA outer-planet flagship mission.

I urge you to recommend that H-Canyon continue to operate at full capacity for the safety and health of all Americans, for national security, for stewardship of the environment, and for clean energy pursuits.

Thank you again for considering my comments on this issue.

DR. WINOKUR: Thank you, Dr. Hayes.

The next speaker is Tom Clements, Friends of the Earth.

MR. CLEMENTS: Thank you very much. I am Tom Clements with Friends of the Earth, an environmental organization based in Washington, DC, but I work in Columbia, South Carolina, and used to live south of here, near the Vogtle plant site -- which is now the Vogtle plant site in Waynesboro, Georgia.

I'd like to thank you for coming here. You've voiced your reasons for coming to near the Savannah River Site, and I think it is important that the Board go around the complex, so I appreciate your being here and receiving public comments, and it's been quite interesting today.

And I would -- as you know, the Alliance for Nuclear Accountability is a group of environmental organizations that work around DOE sites, and I will assure you that we are sensitive to the fact of your budget being approved by Congress, and we'll work to make sure that budget is approved, just as we fight for the EM budget to be approved as well, because we think that's an important mission.

I don't have a prepared statement, but I just wanted to point out a few things. We've been talking about the fate of the H-Canyon for decades. I remember in the year -- I think it was 1992, meeting with some officials in Washington to talk about what was going to happen to the H-Canyon.

We still don't have a clear way forward, but in those 20 years, how much money has been spent? Maybe $5 billion or more, and we still don't know what's going to happen to the complex, and I would contend that really it's been spending money on the operation of the facility that's been the driver and not sound policy as related to the facility, and that's quite unfortunate. I hope that changes.

In the year 2000, I was the Director of the Nuclear Control Institute, which is now defunct, in Washington, DC, and made a visit from Washington to the Savannah River Site and, in the M-area, where the buildings are now torn down, viewed the oven that was going to be used for melt and dilute.

We also toured the L-Reactor, where a demonstration oven was going to be placed to actually handle radioactive material.

Melt and dilute, as you know, never took place. That was over a decade ago, and here we are again with melt and dilute still the preferred option. If it had been carried out then, I think we would be a long ways towards processing all that spent nuclear fuel. It's rather aggravating to watch this situation.

Now, I know it's -- the issue of jobs has come up. It's not your mission to consider the impact on jobs right now -- I understand that there are about 620 full-time employees at the H-Canyon -- nor is it your mission to consider the impact of the future speculative-type jobs related to reprocessing.

And this gets in to the recommendations of the Blue Ribbon Commission. The Blue Ribbon Commission may recommend for some kind of reprocessing R&D. Whether they mention a role for the H-Canyon or not, I have no idea, but if the H-Canyon would be used for some kind of off-gas, fission-gas capture, or decladding of spent fuel, I'd like to see an explanation why the entire Canyon is needed.

And you're going to have a mission in monitoring, if there is any R&D research going on at the facility, related to reprocessing R&D, which I think would be a very small mission as we look to the future.

I'm concerned that the H-Canyon might shut down primarily because of problems with the mixed-oxide fuel program. It's not clear that that program is going to be able to be carried out.

The main reactors that they're looking at are the GE Mark 1 Browns Ferry reactors. It's going to take a test of six years of irradiation and then post-irradiation examination and licensing to use MOX fuel in the Browns Ferry reactors on a full commercial scale, and it just might not happen.

So the MOX plant could potentially operate at

50 percent or under capacity. There might not be disposition pathway for some of the plutonium; we might need the H-Canyon for that.

And I'd like to ask, as we look to the future, that you do certain things when you deal with DOE and ask them about what materials are going to be processed. I'm a little bit disappointed that there wasn't fleshed out what materials besides FFTF and foreign and domestic spent fuel would be processed.

You asked questions about it, but I don't think we heard really any specific details about what those materials are. And as you're aware, 20 years ago there was like a cats-and-dogs list that we developed, and that's -- you know, it's still out there, perhaps in the form of this Nuclear Materials Inventory Assessment.

But I would ask in closing that you request that -- for a full list of materials that are necessary to be processed in the H-Canyon. There may be other materials that have disposition routes at other sites.

Why the H-Canyon is needed for this list of materials beyond the spent fuel that we know about? What are the alternative disposition paths; for example, dry-cask storage, which we've heard about? What's the schedule or the time it would take to process these materials through the H-Canyon, and then what is the overall life of H-Canyon if all of these materials were to be processed?

And, finally, I would request that you make sure that that information is public, because it's been quite lacking over the past couple of decades exactly what could be processed in H-Canyon.

So I'll leave my comments to that. I appreciate it very much. Hope to see you in Washington on one of my visits. Thank you.

DR. WINOKUR: Thank you, Mr. Clements.

Our next speaker is Dawn Gilles.

MS. GILLES: Good evening. I'm Dawn Gilles, member of the public. Thank you for being here tonight and allowing me to make a couple of comments. Mine will be very short. Most of the people have already said most of my comments.

First of all, I'd like to commend Site Rep Mark Sautman for his well organized presentation earlier. He covered most of my concerns.

I have just a couple of things to say. One is if H-Canyon operations are delayed, we already talked about the TVA -- possible issue with TVA. There's also a possible issue with the DWPF schedule and being able to get the high-level waste portion of the spent fuel processing through DWPF. And I'm not sure that that's really been well addressed.

The other thing is to make sure that everybody understands that putting this fuel into dry storage is not a disposition; it's just another form of storage. And it would still have to have another step to go to whatever disposition would end up in the long term.

Thank you.

DR. WINOKUR: Thank you for your comments.

We have Karen Patterson from the Governor Nuclear Advisory Council.

Welcome.

MS. PATTERSON: Thank you, Mr. Chairman.

I'm Karen Patterson. I've lived in Aiken for almost 40 years, and I'm a member of the South Carolina Governor's Nuclear Advisory Council, and my remarks are made on behalf of the Council.

I'm concerned because DOE has quit talking about risk reduction and now talks about footprint reduction. The two are not synonymous.

In 2000, DOE published an EIS evaluating alternatives for disposing of spent nuclear fuel coming into the SRS for the sole purpose of being dispositioned. The ROD identified melt and dilute as the selected technology.

DOE has been planning to dispose of spent nuclear fuel for years. However, DOE dithered. Funding to develop melt and dilute disappeared. And now the only viable option for getting rid of that fuel is about to be mothballed.

I know DOE does not intend to let H-Canyon go cold, dark, and dry. I also know that many roads are paved with good intentions.

DOE has assured me numerous times that even though the spent fuel is not particularly robust and was not designed to last for years like commercial fuel and even though it is clad in aluminum, it is perfectly compatible with long-term storage in L-Basin.

When I asked about options, should some fuel go bad, I am told, "It won't," which I take to mean DOE does not know what it would do, so it's hoping for the best.

I believe that, contrary to DOE's rosy assessment, as the fuel ages, handling it will become more difficult, dose to workers will increase, and maintaining the water quality of the basin will get more expensive.

Long-term storage of spent nuclear fuel increases risk, which is not acceptable. We could get rid of all the fuel that's here now in about six years, I believe, and process the rest which is scheduled to come to SRS through 2019 as it arrived using a process SRS understands very well and a facility that has worked exceptionally well for more than -- for almost 60 years.

I'm sure we'll learn many things from Japan. One thing I think we can all agree to today is that long-term of a spent fuel inventory in water is not an optimal approach.

We have an alternatives to storage that we can use right now, and we should make every effort to use it, not to quit using it.

DOE's commitment to as low as reasonably achievable doses to workers, the public, and the environment would seem to make the decision to continue to run H-Canyon a no-brainer.

DOE has not listened to the Governor's Council, the South Carolina governor, our congressional delegation, our state legislative delegation, nor our local delegation, all of whom have said repeatedly and clearly: "Do not stop processing spent fuel in H-Canyon."

I hope you agree with South Carolina that this decision is not in the best interests of the region, the state, or the nation and that you have the clout to make DOE listen.

Thank you very much for coming to take our public comments. I appreciate it.

DR. WINOKUR: Thank you for your comments. I want to read into the record a letter that we've received from the Honorable Tom Young, Jr., who's a member of the House of Representatives of the State of South Carolina. It's addressed to me, dated June 14, 2011.

"Dear Chairman Winokur:

"Thank you and Members of the Defense Nuclear Facilities Safety Board for hosting the public meeting on June 16 in Augusta, Georgia.

"I have the honor and privilege of representing the citizens of Aiken County District 81 in the South Carolina General Assembly. Since the General Assembly is in session this week, I will not be able to attend the June 16 hearing; however, I am pleased to offer this statement for the record.

"The Board's public notice for this hearing states that the Board is concerned about how DOE will dispose of nuclear materials in light of the potential termination of chemical processing at H-Canyon and HB-Line.

"It further states that the Board will explore uncertainties in the new disposition plans and whether extended storage of nuclear materials may cause safety problems.

"Many of my constituents and I share your same concerns. In fact, every member of the Aiken County legislative delegation expressed these concerns in a letter dated March 7, 2011, to Secretary of Energy Steven Chu.

"We are concerned that without H-Canyon or any limited modifications to its operation status, there is no disposition pathway for the 15,000 used fuel rods currently stored at SRS. DOE has no plans for removing these fuel rods from South Carolina, and in fact it is my understanding that they intend to bring in an additional 4500 used fuel rods by 2019.

"Without H-Canyon, our nation will no longer have a facility to conduct valuable research and development that could provide solutions to closing the back end of the nuclear fuel cycle.

"It is also unfathomable to me that DOE would risk losing a vital national resource and knowledgeable workforce to help our nation address its critical missions on energy, environment, and national security.

"Moreover, in view of the recent events in Japan, how can anyone argue that using H-Canyon for reprocessing spent nuclear fuel rods will not be a benefit to both our nation and the world?

"In addition to the letter written by a local legislative delegation to Steven -- Secretary Chu, South Carolina Governor Nikki Haley and Speaker of the House Bobby Harrell wrote letters to Secretary Chu. Further, our congressional delegation and legislative delegation have invited Secretary Chu to tour H-Canyon before a final DOE decision is made.

"To date, Secretary Chu has not responded to the invitation, nor has he personally responded to the letters written to him by many leaders interested in this issue.

"In sum, many people are concerned that the DOE's policies for H-Canyon funding and modified operations essentially remove the disposition path for this fuel, out of our state. This delays a permanent solution for spent fuel as we believe that the people of Aiken County and South Carolina were promised.

"In view of the recent events in Japan, it is not acceptable to plan to store this fuel at SRS indefinitely.

"I appreciate the mission and oversight authority of the Defense Board, and I am hopeful that your role will help to ensure that SRS will continue to be the leader in nuclear materials management for our country.

"Finally, any assistance that you can provide in disapproving of any policy that will sacrifice H-Canyon's operating capabilities will be appreciated.

"Sincerely yours." Signed, Tom Young, Jr.

And that will be submitted into the record, of course.

Are there any other members of the public who wish to speak on the topic of nuclear materials storage and disposition?

(No response.)

DR. WINOKUR: Seeing none, I'm going to provide some very brief closing remarks. Before I do that, let me turn to the other Board Members and ask if they have any final comments.

DR. MANSFIELD: No final comments.

MR. BADER: None.

DR. WINOKUR: First, I want to acknowledge the hospitality of the Savannah River Site and local community. I would also like to thank our witnesses and all the members of the public who participated in this meeting and hearing.

I particularly want to thank the elected officials and other key members of the community who participated here today. An active community with engaged leaders is a vital part of any successful program of this nature.

The Savannah River Site, which this community strongly supports, has a long-term mission with critical importance to our nation. The site should maintain a processing capability in order to stabilize nuclear materials while cleaning up the massive legacy of nuclear waste from the Cold War.

We note this is a complex site that provides significant challenges for DOE and its contractors to operate safely and effectively.

We explored three topics of interest today: liquid waste processing, emergency preparedness, and nuclear materials storage and disposition. The Board believes that stabilization of legacy waste in the Tank Farms is paramount, and thus the Board remains concerned about the slow pace of emptying tanks to remove that hazard.

We understand that the commissioning of the Salt Waste Processing Facility in the 2015 time frame should provide an opportunity for significant process -- progress in waste removal.

However, the integration of this new facility with the existing and aging high-level waste infrastructure, which includes Saltstone, the Defense Waste Processing Facility, and the evaporators, will pose additional major challenges in the future.

The Board is encouraged by plans for site-wide drills for emergency preparedness and recovery at the Savannah River Site, but DOE still needs to put in more effort to improve the integrity and fidelity of such drills.

The Board believes that DOE needs to provide a clear path forward for material disposition for all surplus and nuclear materials. Indefinite storage of hazardous materials is not a safe, long-term plan.

Spent fuel is one of our greatest concerns at the site, given its unknown future. Any final decision from DOE regarding future needs for H-Canyon and HB-Line should be made with full consideration of the needs of the defense nuclear complex for these unique processing capabilities.

Lastly, I would like to note that the Board is committed to working with Savannah River Site personnel to improve nuclear safety.

The record of this proceeding will remain open until July 18, 2011. I would like to reiterate that the Board reserves its right to further schedule and regulate the course of this public meeting and hearing, to recess, reconvene, postpone, or adjourn this public meeting and hearing and to otherwise exercise its authority under the Atomic Energy Act of 1954, as amended.

This concludes this public meeting and hearing of the Defense Nuclear Facilities Safety Board. We'll recess now and take up the call of the Chair if and when that becomes necessary.

Thank you all very much for attending.

(Whereupon, at 9:25 p.m., the public meeting and hearing was adjourned.)

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

//

REPORTER'S CERTIFICATE

IN RE: Savannah River Site Public Meeting and Hearing

DATE: June 16, 2011

LOCATION: Augusta, Georgia

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Defense Nuclear Facilities Safety Board.

Date: June 23, 2011

Brenda W. Thompson
Official Reporter

Heritage Reporting Corporation

1220 L Street, N.W.

Washington, D.C. 20005