DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Public Meeting and Hearing on Y-12

National Security Complex

Tuesday, December 10, 2013

Session I

8:00 a.m.

Knoxville Convention Center

701 Henley Street

Knoxville, Tennessee 37902

LIST OF PARTICIPANTS

BOARD MEMBERS:

Dr. Peter S. Winokur, Chairman

Ms. Jessie H. Roberson, Vice Chairman

Mr. Sean Sullivan, Board Member

Dr. Kenneth Mossman, Board Member

Mr. Steven Stokes, Technical Director

Mr. David S. Jonas, General Counsel

Mr. Rory Rauch, Board Staff

Mr. Dan Ogg, Board Staff

Mr. John G. Batherson, Assoc. General Counsel

Mr. William Linzau, Board Staff

ALSO PRESENT:

Mr. Bruce Held	NNSA Acting Administrator
Mr. Steven Erhart	NNSA Production Office Manager
Ms. Teresa Robbins	NNSA Production Office Acting Manager for Environment, Safety, Health and Quality
Mr. Charles Spencer	B&W Y-12 President and General Manager
Mr. Ken Keith	B&W Y-12 Vice President, Operations Engineering
Mr. William Tindal	B&W Y-12 Vice President, Production
Mr. Robert Raines	NNSA Associate Administrator for Acquisition and Project Management

LIST OF PARTICIPANTS (Continued)

Mr. Carl Strock	B&W Y-12 Uranium Processing Facility Project Director
Mr. Kevin Kimball	B&W Y-12 Safety Analysis Engineering Manager
Mr. John Gertsen	B&W Y-12 Vice President, Uranium Processing Facility Integration
Mr. John Eschenberg	UPF Federal Project Director

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CHAIRMAN's OPENING REMARKS

CHAIRMAN WINOKUR: Good morning. 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 Safety Board. To my immediate right is Ms. Jessie Roberson, the Board's Vice Chairman. To my immediate left is Mr. Sean Sullivan. To his left is Dr. Kenneth Mossman. Mr. Joseph Bader will not be attending today. We five constitute the Board.

The Board's General Counsel, Mr. David Jonas, is seated to my far left. The Board's Technical Director, Mr. Steven Stokes, is seated to my far right.

Several members of Board's staff closely involved with oversight of the Department of Energy's Defense Nuclear Facilities at the Y-12 National Security Complex are also here.

Today's meeting and hearing was publicly noticed in the Federal Register on August 13, 2013, and November 12, 2013. This meeting and hearing is 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 the Department of Energy's Defense Nuclear Complex the Board is recording this proceeding through a verbatim transcript, video recording, and live video streaming.

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 at approximately 11:30 a.m. this morning for Session I and approximately 5:30 p.m. this evening 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 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 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 January 10th, 2014.

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.

Let me now proceed to explain why the Board chose to hold this public hearing concerning safety at the Y-12 National Security Complex.

The Board's enabling statute now in effect for more than 20 years is found in the Atomic Energy Act beginning at Section 2286 of Title 42. This statute defines the Board's role to advise the Secretary of Energy regarding actions that may be necessary to ensure adequate protection of the public, of public health and safety, including the safety of the workers at DOE's new and existing defense nuclear facilities.

Y-12 is a nuclear weapon production site managed by the National Nuclear Security Administration, or NNSA, that falls under the Board's jurisdiction. As part of Y-12's primary mission, workers recover and purify highly enriched uranium, produce and machine uranium metal components, and store, assemble, disassemble and conduct surveillances on nuclear weapon components.

Failure to conduct these operations according to the highest standards of safety could result in a release of radiological or toxic material to the public or severe consequences to the workers

themselves.

The Board will be discussing four topics during today's meeting and hearing that are crucial to ensuring safe and reliable operations at Y-12. These topics will be broken into two sessions with two topics in each session.

The first topic is Aging Infrastructure. The second topic is the Uranium Processing Facility, or UPF. The third topic is Site Emergency Planning and Response. And the fourth topic is the Safe Conduct of Nuclear Operations, including Federal and contractor oversight efforts.

Let me briefly discuss each topic. During this morning's session the initial focus will be the safety-related risks presented by Y-12's aging defense nuclear facilities.

The nuclear facilities of most concern at Y-12 are those that process enriched uranium as part of Y-12's national security mission. These facilities are Building 9212, which houses enriched uranium recovery, purification, metal production, and casting operations; Building 9215, which houses enriched uranium machining operations; and Building 9204-2E, also referred to as Beta-2E, which houses component assembly and disassembly operations

involving enriched uranium parts.

Parts of Building 9212 are approximately 70 years old, while Buildings 9215 and Beta-2E are approximately 60 and 45 years old, respectively. These facilities are well past their intended design life, are costly to operate, and were not built to modern safety standards.

NNSA [National Nuclear Security Administration] has noted that major structural and process modifications to address the risks associated with these aging facilities would be impractical due to the costs involved and the likelihood that modifications would significantly disrupt important national security missions.

In the near term NNSA is mitigating the risk of continued operations in these existing facilities by significantly reducing the inventory of radiological materials and making practical near-term modifications. However, at best these improvements are only stop-gap measures.

Therefore, we will discuss the processes used by NNSA to assess the risk of continuing to operate in Buildings 9212, 9215 and Beta-2E, and the criteria NNSA uses to determine when continued safe operation of these facilities is no longer

practicable.

NNSA's long-term plan for addressing these risks is to transition these capabilities to a new facility, the Uranium Processing Facility [UPF], which is the second topic in this morning's session. UPF is a complex, one-of-a-kind, multi-billion dollar design and construction project. Its mission is the secure, safe, and efficient processing of enriched uranium to meet national security needs.

In October 2012 the Board conducted a public hearing regarding UPF to discuss with NNSA its concern that safety had not yet been adequately integrated into the project's design.

Most recently, in an August 26, 2013, letter to Mr. Bruce Held, Acting NNSA Administrator, the Board observed that while NNSA has made progress in addressing safety issues previously identified, additional action is needed to improve the effectiveness of UPF safety strategy to ensure planned controls can reliably perform their safety functions.

During today's hearing the Board will receive testimony from NNSA and B&W Y-12 management on actions taken since the October 2012 UPF public hearing to improve the integration of safety into the

UPF design and to address safety issues identified in the Board's recent letter.

The Board will also discuss with NNSA its progress in identifying and managing the safety-related risks associated with deferring installation of both the production capabilities currently performed in Buildings 9215 and Beta-2E to a later unspecified date, which is referred to as the deferred scope, and the project's continuing efforts to finalize a major redesign of the facility to accommodate problems with equipment spacing, what is referred to as the space/fit issue.

During this afternoon's session the Board will address topics dealing with Emergency Preparedness and Response, which is a crucial part of the overall safety posture at Y-12. We will examine Y-12's emergency response capabilities and discuss potential areas where site planning for and recovery from emergency situations can be enhanced.

This afternoon's final topic will cover the safety of nuclear operations at Y-12. Rigorous adherence to the principles of Integrated Safety Management and Conduct of Operations is paramount to ensuring that workers are protected and that operational events do not cause any release of

radioactive or toxic materials.

This afternoon's session will cover some specific weaknesses in Y-12's conduct of operations and work planning and control processes, the improvements to date, and the importance of robust oversight to sustain key safety initiatives and ensure continuous improvements in the safe execution of nuclear operations for the protection of workers.

This concludes my opening remarks.

I will now turn to the Board members for their opening remarks.

Ms. Roberson.

VICE CHAIRMAN ROBERSON: No, thank you, Mr. Chairman.

CHAIRMAN WINOKUR: Mr. Sullivan.

MR. SULLIVAN: I have none, Mr. Chairman.

CHAIRMAN WINOKUR: Dr. Mossman.

DR. MOSSMAN: I have no comments.

CHAIRMAN WINOKUR: This concludes the Board's opening remarks for this session.

At this time I would like to invite Mr. Bruce Held, Acting Administrator of the National Nuclear Security Administration to the witness table to provide a statement on behalf of the National Nuclear Security Administration.

Welcome, Mr. Held.

STATEMENT BY NNSA

MR. HELD: I'd like to thank Chairman Winokur, Vice Chair Roberson, and distinguished members and staff of the Defense Nuclear Facilities Safety Board and staff for the opportunity to be here with you today.

The relationship between the Board and the NNSA is an exercise in good government that benefits all American citizens. As one of those citizens, I have a great respect and appreciation for the manner in which the Board carries out its important responsibilities.

As Acting Administrator, I recognize that I cannot succeed in my job unless I merit the trust and confidence of the Board.

Mr. Chairman, I have submitted an eight-page written statement for the record. In the interest of time I'll draw from that statement to make some key points.

As many of you know, I'm a retired CIA Operations Officer, not a nuclear engineer. In June 2013 a man I greatly admire, Secretary Ernie Moniz, called me back to government service, first to serve as his Associate Deputy Secretary and

subsequently to become Acting Administrator pending confirmation of the President's nominee to lead NNSA, retired General Lieutenant Frank Klotz.

Frank is widely recognized as a distinguished, experienced, and wise leader, and I believe he will make an outstanding Administrator.

There is another man I greatly admire who is particularly relevant to our proceedings today and that man is the late Admiral Hyman Rickover, the father of America's nuclear navy.

Admiral Rickover succeeded in building one of the great organizations of the U.S. Government, because he recognized that the argument that budgetary considerations create a tradeoff between nuclear safety and nuclear security is a false argument.

Rickover recognized, one, that there can be no nuclear security without nuclear safety; and, two, that an uncompromising attitude towards nuclear safety will strengthen the nuclear security mission, not weaken it.

In the rough and tumble environment of Washington, D.C., recognizing a wise policy position is only the first step in successfully implementing and transforming that position into practical

reality.

To succeed in building an organizational culture of excellence like that of the nuclear navy policy insight must be coupled with a shared leadership ethos, disciplined operational execution, and sustained political support.

Admiral Rickover recognized that an uncompromising attitude towards nuclear safety could serve as the catalyst and unassailable foundation for that consistent leadership, disciplined operation, and sustained political support.

An NNSA administrator should carefully study the legacy of Admiral Rickover regarding the foundational importance of nuclear safety for building a culture of excellence and thereby advancing our Nuclear Security Mission. And like Admiral Rickover, NNSA Administrators must be equally adamant champions of nuclear safety even in the toughest of budgetary times.

Our focus today is on the work performed at the Y-12 National Security Complex, work that is vital to the nation's national security. Y-12 is the only place in the United States where the capabilities exist to dismantle secondaries for retired nuclear weapons, manufacture fuel stock for

our nuclear navy, assist in the recovery and stabilization of nuclear materials in support of nuclear nonproliferation, provide low enriched uranium to research reactors in a form that supports nonproliferation goals and perform critical life extension activities that essential central for our nuclear weapons deterrent.

The fragility of Y-12's aging infrastructure is worrisome. As you read in your opening statement, Mr. Chairman, these facilities are well past their intended design life and were not built to modern nuclear safety standards.

Building 9212 has been operating for over 60 years. In 2006 NNSA completed a Facility Risk Review to identify measures required to ensure continued safe operations in Y-12 for 15 additional years.

This review identified the need, one, to stabilize and reduce the inventory of enriched uranium in the building; and, two, invest in practical facility modifications needed for continued safe operations. These efforts are on track, and the Facility Risk Review was updated in 2011.

Oversight of our ongoing operations in 9212 is conducted by the Continued Safe Operation

Oversight Team. This is a team of senior experts in engineering operations, maintenance, nuclear safety and oversight. Each month they evaluate a set of facility performance indicators, events reports, and facility aging assessments to look for any indication that safety margins are being degraded.

The team meets monthly with representatives of the General Manager and the Federal Site Office Manager. And the GM [General Manager] and the Site Office Manager are notified immediately of any safety-related concerns.

A formal report is written annually and provided to NNSA headquarters as well as the DNFSB [Defense Nuclear Facilities Safety Board]. Briefs are provided annually for NNSA senior leadership and the Board on facility conditions, concerns, and any recommendations for continued safe operations.

The condition of nuclear safety systems and components is monitored constantly. The Federal Site Office Manager has representatives, residents in the high hazard facilities. The Federal Site Office Manager receives a daily verbal status report and also receives written reports of any operational issue.

Our bottom line is that we will not operate

unless it is safe to do so. That is both for the interests of nuclear safety and best for the Nuclear Security Mission.

The Nuclear Security Mission Managers can manage with a short-term cessation of operations in order to address an emerging safety issue. What the Nuclear Security Mission Managers cannot survive is a serious nuclear safety accident. The top priority we put on nuclear safety is essential both for the Nuclear Security Mission and the Nuclear Safety Mission. That is an essential core element to our management approach.

The above focus has been on building 9212 but the other enriched uranium facilities at Y-12, Buildings 9215 and Beta-2E, are also aging and require investments.

Facility Risk Reviews were performed for both of these facilities in 2007. Strategic investments were identified for Beta-2E and maintenance investments were identified for 9215. These Facility Risk Reviews were updated in 2012. Moreover, the continued Safe Operation Oversight Team that so carefully monitors 9212 does the same monitoring and reporting for 9215 and Beta-2E in reporting to the Site Office Manager and General

Manager.

While working to extend the safe operations in our existing facilities of Y-12 NNSA is also working to transition to a new Uranium Processing Facility that meets modern safety, security, and seismic standards all while improving efficiency of operations.

Transitioning out Building 9212 as expeditiously as possible is our first priority. As design work on the Uranium Processing Facility matures, NNSA will make near-term investments in enriched uranium capabilities and infrastructure necessary to ensure continued safe operations.

Integrating safety into design of the UPF project is essential to the success of that project. We have learned many things regarding the integration of safety into design, including the need for enhanced configuration control, and supplemental safety basis documents.

As we continue maturing the technology and design, we're developing more certainty on the costs and the challenges that presents in today's budget environment and will continue to focus on the plan that minimizes the risk in 9212 and the other facilities as quickly as possible.

Mr. Chairman, before closing, allow me to recount a short vignette that I think addresses the priorities of the NNSA leadership.

On my final day of national service 38 years, two months, and four days ago, it was inconceivable to me that during my lifetime America would win the Cold War, reemerge as an energy independent nation, and witness the intentional shutdown of the U.S. Government.

All three have happened. The first two were matters that we can certainly rejoice over. Nobody should be rejoicing about the Government shutdown, least of all those of us in NNSA, but there was one positive outcome of that shutdown.

At our morning meeting on October 7th the NNSA Senior Leadership Team was at a loss on how to proceed in the face of all the political and budgetary uncertainty. In the midst of at times heated debate Don Cook, the head of the defense Programs, our senior nuclear weapons engineer, observed quietly but firmly that NNSA's overriding responsibility to the American people was to assure nuclear safety.

To fulfill that responsibility Don recommended that we initiate an orderly shutdown of

America's nuclear weapons complex. That was a weighty decision, never before taken. But everybody in the room instantly recognized the wisdom of Don's statement, and that is what we did.

Although we expected pushback from some quarters, we were pleasantly surprised that in fact there was very little. It seems that amidst much controversy, uncertainty, and stress everybody recognized that assuring nuclear safety first and foremost was simply the right thing for NNSA to do. Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Held.

Do the Board members have any questions for Mr. Held at this time?

Dr. Mossman.

DR. MOSSMAN: Thank you, Mr. Held, for your testimony.

I'm a new member of the Board. I just joined a few weeks ago and have emersed myself almost entirely in preparation for this hearing and have been very impressed by the nature of the sophisticated technologies that are used, the importance of the work of the NNSA and Oak Ridge Y-12.

And I came into this almost as a member of

the general public, although I have certain areas of expertise. And the first question that came to my mind, and hopefully you can answer it, is the Y-12 complex safe? And if it is safe, what are we doing to keep it safe? If in your estimation it's not safe, what is it that we need to do to make it safe?

MR. HELD: In my estimation, and that of NNSA, is that the Y-12 complex is safe. The Y-12 complex is also old and involves -- was built in design factors that were not equivalent to modern nuclear safety design.

It is essential that we transition out of these old facilities. We have a plan for doing so that is subject to budgetary and technological issues. But in the meantime we are making the required investments in those facilities to make sure that continued operations are safe.

If we are presented with a tactical situation where we have some question of whether the continued operation in those facilities is safe and we have a choice between making -- putting priority on safety or putting priority on mission operations, we will place priority on nuclear safety and shut down mission operations. And that is a very firm policy at the NNSA.

CHAIRMAN WINOKUR: Are there any other questions?

Thank you, Administrator Held. I think we will be seeing you in a couple of minutes in the first panel. I appreciate your testimony at this time, and we will accept your full written statement into the record.

MR. HELD: Thank you, sir.

CHAIRMAN WINOKUR: At this time I would like to introduce Mr. Rory Rauch, the DNFSB site representative in Oak Ridge, who will provide testimony from the Board's staff.

Mr. Rauch, I will take your full written statement for the record. Please summarize your written statement in 10 minutes or less.

STATEMENT BY DNFSB STAFF

MR. RAUCH: Good morning, Mr. Chairman, and Members of the Board.

For the record, my name is Rory Rauch. I'm one of the Board's site representatives responsible for overseeing nuclear facilities and operations at the Y-12 National Security Complex.

In this opening statement I will provide a brief overview of the safety risks of Y-12's aging defense nuclear facilities and the processes used by

National Nuclear Security Administration, or NNSA, to assess and mitigate these risks.

I will also discuss some of the current factors affecting the timeline for transition from these facilities to the planned replacement facility, the Uranium Processing Facility, or UPF.

Finally, I will discuss issues with the integration of safety into the design of the UPF project.

Building 9212 at the Y-12 National Security Complex, which houses several high-hazard, enriched uranium processing capabilities, is approximately 70 years old and was not built to modern nuclear safety requirements.

The Y-12 contractor first documented the safety risks presented by Building 9212's structural deficiencies in a Safety Basis Document submitted to NNSA in 2004. This document, essentially the contractor's operating license for the facility, indicated that the facility structure did not meet the Department of Energy, or DOE, requirements for seismic performance.

The contractor's analysis showed that a severe seismic event could result in a large-scale fire releasing radiological material to the public

and Y-12 workers.

Following the contractor's submittal of this safety basis documentation the Board issued a letter on April 20th, 2005, advocating that NNSA take a balanced approach in addressing the risks presented by these structural deficiencies.

This approach involved three components: Construction of a replacement facility built to modern nuclear safety requirements, reduction of the inventory of radiological materials in Building 9212, and the implementation of practical facility modifications.

Consistent with the strategy advocated by the Board NNSA and the Y-12 contractor have completed a series of Facility Risk Reviews, which were conducted in five-year intervals, starting in 2006 for Building 9212 and 2007 for the other highest hazard facilities at Y-12, Buildings 9215 and 9204-2E, also referred to as Beta-2E.

During these reviews multi-disciplinary Teams of subject matter experts rigorously evaluated the condition of each facility and identified the projects needed to ensure continued safe and reliable operation. The teams prioritized these projects using weighted scoring criteria to balance factors,

such as safety and production benefit, duration of benefit, cost, and ease of implementation.

Some of the highest priority projects included the replacement of aging electrical systems which presented an increased fire risk. The reviews also placed a high priority on replacing degraded ventilation systems, which protect workers from airborne radiological hazards.

Overall, the highest priority projects were identified for Building 9212 systems, which were in poorer condition and presented greater safety risks than those in Buildings 9215 or Beta-2E.

The contractor is making significant progress in implementing the practical risk reduction measures recommended by the Facility Risk Review Teams. Much of this progress is being made under the auspices of the Nuclear Facility Risk Reduction Project. This 75 million dollar line item project began in October 2011 and is scheduled to last approximately four years.

The Nuclear Facility Risk Reduction Project scope includes several substantial subprojects to upgrade electrical, ventilation, and utility systems in Building 9212.

In addition, NNSA via the Y-12 contractor

set aside the funding to make substantial reductions in the inventory of radiological materials in Building 9212.

Currently the facility's enriched uranium solution inventory has been reduced to approximately 25% of its 2006 levels.

Despite the contractor's progress to date two recent changes to the schedule for building UPF have challenged Y-12's aging infrastructure risk management efforts.

First, the latest scheduled for UPF indicates that the facility will start operation that are currently performed in Building 9212 in late 2025. This is a delay in the transition timeline used by the Facility Risk Review Teams for Building 9212, who assumed that enriched uranium operations would transition to UPF by 2021.

Second, in February 2012 the NNSA Deputy Administrator for Defense Programs issued guidance to the UPF project that deferred the scope of Beta-2E and 9215 enriched uranium operations from the initial operational phase of UPF.

NNSA's latest estimation for the completion of transition of these operations to UPF is now 2038, which represents a delay of nearly 17 years from

initial planning estimates.

By 2038 Buildings 9215 and Beta-2E will be approximately 80 and 65 years old, respectively. Extending the timeline for transition of operations from these facilities to UPF increases the duration for which the Y-12 contractor must manage the safety risks posed by ever-aging systems.

As I've discussed, UPF is NNSA's planned long-term solution to the aging infrastructure problem at Y-12. To be successful the UPF project team must adequately integrate safety into the design of UPF.

I'd like to elaborate on three specific areas relating to the integration of safety into the UPF design.

The first topic concerns safety issues with the Preliminary Safety Design Report, or PSDR. The PSDR is the developmental safety basis document intended to capture the preliminary hazard and accidental analyses and the safety controls at the end of the preliminary design.

In an April 2012 letter to NNSA the Board identified deficiencies with the UPF PSDR [Preliminary Safety Design Report] that led the Board to conclude the UPF project team had not adequately integrated

safety into the preliminary design.

We discussed these deficiencies during the Board's October 2012 public hearing. The UPF project team revised the PSDR and supporting hazard and accident analyses to address these issues and submitted the revision to NNSA for approval in September of 2012. NNSA formally approved the revised PSDR in March 2013.

The Board reviewed the revised PSDR and observed that while NNSA made progress in addressing prior safety issues, additional action is still needed to improve the integration of safety into the UPF design.

In August 2013 the Board wrote a letter to NNSA and identified that the PSDR had not demonstrated that many credited safety controls of capable effectively of performing their safety functions. Resolution of these new issues could lead to NNSA identifying additional safety controls at UPF.

The second topic concerns potential safety impacts from NNSA's direction to defer the Buildings 9215 and Beta-2E scope to a later date, currently estimated in the mid to late 2030s.

While I discussed the potential impacts of this direction on the operating facilities, it also

introduces unique challenges and potential safety risks for the UPF project.

The UPF project has completed a series of engineering studies to evaluate the deferred scope. These studies have started to define the safety considerations that NNSA will factor into the design effort to minimize potential safety impacts on the current project scope.

The third topic concerns the project team's progress in evaluating the potential safety impacts from the redesign effort to resolve equipment, spacing, and fit issues.

The UPF project has identified that increases in ceiling height may impact the performance of the fire suppression system. This possible safety risk will remain until the project team completes its evaluation of the fire suppression system design accounting for the space-fit solution.

Another critical aspect of the UPF project is NNSA's ability to properly oversee the safety aspects of the UPF design's development. Federal staffing has been a long-standing concern, identified in the Board's August 2007 and April 2012 project letters to NNSA. During the past year the federal project team has increased in size and the team's

capability has improved. NNSA also plans to hire approximately 10 additional federal personnel.

Notwithstanding these improvements, an independent NNSA review conducted in June 2013 concluded that the Federal Project Team lacked critical subject matter expertise and was not staffed in accordance with its staffing plan.

Until the UPF project team is adequately staffed the Board staff remains concerned that NNSA will not be able to provide adequate safety oversight of this hazardous and complex nuclear project.

Despite any delays in the transfer of operations from existing facilities to UPF, NNSA must be able to meet important national security needs. Ultimately NNSA may be forced to further extend the mission life of certain of enriched uranium processing capabilities in facilities that do not meet modern DOE safety requirements.

Moving forward, NNSA must continue to evaluate conditions and risks of aging nuclear facilities, prioritize risks, mitigate activities, and execute upgrades to the maximum extent possible to ensure continued safe nuclear operations at Y-12.

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

CHAIRMAN WINOKUR: Do the Board members have any questions for Mr. Rauch?

Hearing none, thank you, Mr. Rauch.

At this time I would like to invite the panel of witnesses from DOE and its contractor organization to discuss the topic of Y-12 aging infrastructure.

Will the panel members please take your seats as I introduce you.

Mr. Bruce held is the Acting Administrator for the National Nuclear Security Administration.

Mr. Steven Erhart is the NNSA Production Office Manager.

Ms. Teresa Robbins is the NPO Acting Assistant Manager for Environment, Safety, Health and Quality.

Mr. Charles Spencer is the B&W [Babcock & Wilcox] Y-12 President and General Manager.

Mr. Ken Keith is the B&W Y-12 Vice President for Operations Engineering.

Mr. William Tindal is the B&W Y-12 Vice President for Production.

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

Seeing none, 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 questions from the Board members of the full panel.

Mr. Sullivan will begin questioning.

MR. SULLIVAN: Good morning, everyone.

Mr. Spencer, I would like to start with you, so it's nice to see you again.

I heard in the testimony that Rory Rauch gave, he used the phrase "high hazard enriched uranium processes" with respect to Building 9212. Now, that phrase in and of itself just kind of sounds scary.

And I imagine that the processes would be high hazard whether they're in an old building or a new building, but I also bet since you work there you're not scared. So would you just explain for the public what does that phrase mean? What really

happens in the building and what is it that is done to ensure that although these processes are high hazard -- I'm not talking about the building, just the processes -- although they're high hazard, that things are done safely both for the public and worker.

MR. SPENCER: Thank you.

Is this on? There we go. Is that better? Thank you, sir.

CHAIRMAN WINOKUR: I think if you move the mic closer, it will be helpful.

MR. SPENCER: Okay. How's that?

Well, no, I'm not scared and -- but the facilities and the production is hazardous. 9212 really has three major areas: One is casting where we cast enriched uranium for the stockpile and for other reasons. It's really essentially a foundry, right, but it uses enriched uranium as its main product.

Second, we do processing of enriched uranium, right, to put into various states to purify it. That's a hazard because the material at risk -- you'll hear us talk about that probably today, MAR, Material-at-Risk, is in other forms that are even more dangerous because they're in liquids and have

other things added to them; it's not just a solid uranium piece.

The last processing done in 9212 is what's called recovery, because we must recover every bit of uranium that we use that escapes. That's our protective equipment that we wear and things that we burn in the furnace and process it out.

And so those are the three major components: Casting -- that's the foundry -- material processing, and recovery.

MR. SULLIVAN: Okay. And just again for the public, so although these are high hazard, can you just briefly describe some of the overall safety measures that are taken for both the workers and the public with respect to all three of these things.

MR. SPENCER: Sure. Well, whenever we analyze a process, we start with analyzing the hazards, and then we look for ways to mitigate that hazard, right, part of the ISMS [Integrated Safety Management Systems] wheel, and our first choice is generally to have an engineered control, something that controls it, something like a sensor or a safety clasp valve or something, right? So we have those all over the facility.

The second best choice is some sort of a

administrative process that's detailed. So we have a whole series of administrative processes, technical procedures, right. We have a Senior Supervisory watch to make sure that once we've assessed the hazard, and we have these things in place, that we are in fact performing them adequately, right. So there's critical safety alarms. There's a whole series of protective equipment, right. And so there's both equipment and processes.

MR. SULLIVAN: Okay. Thank you.

Again, now sticking with you, so now I want to talk about the building itself. I heard Mr. Held, who is sitting just to your right, say that the building has been operating for over 60 years and does not meet modern safety or seismic standards.

So again for the purposes of the public can you put a little meat on the bones of what that phrase means. What modern standards does the building not meet and what seismic standards does the building not meet?

MR. SPENCER: 9212 was built -- was started in the '40s, right, and there was a -- subsequently there was a series of wings added to the facility as the production missions at Y-12 expanded. That included auxilliary facilities outside. And so the

Code of record -- the buildings were built to a different Code than today, so it doesn't meet seismic criteria.

We had a study that looked back at -- I think it was in the 2005 time frame where we looked at the structure, and we made some modifications to some of the bracing and some of the structural steel -- the structural steel is sound, but it just doesn't meet today's Codes for earthquake or some sort of major seismic event like HEUMF, the highly enriched uranium storage facility, right, at Y-12, it does. So the current facilities don't, so in a major seismic event or something you would have a significant event.

MR. SULLIVAN: Okay. The building has been operated for over 60 years, and there hasn't been a major seismic event. Is that correct?

MR. SPENCER: Yes, sir.

MR. SULLIVAN: All right. So we're talking about a problem that may happen but has never happened here. Is that the primary concern, with the fact that the building is aging?

MR. SPENCER: That and other potential catastrophes like a plane crash or a tornado, right. So the facilities are built more than just for

earthquakes. They're built for -- the current -- like UPF, the Uranium Processing Facility, would be built to withstand other events other than just an earthquake.

MR. SULLIVAN: All right. Thank you.

Mr. Erhart, I'd like to go to you. Good morning. How are you?

MR. ERHART: Good. Thank you, sir.

MR. SULLIVAN: All right. So as the person overall here onsite with the federal Government responsible for safety, would you please just, you know, comment on what Mr. Spencer said in terms of the safety concerns with Building 9212.

Again for the public, what are the largest safety issues that we are talking about with respect to the fact that this is a 60-year-old building?

MR. ERHART: Okay. Thank you. I appreciate the opportunity to speak with you today.

And welcome to Dr. Mossman. I look forward to working with you in the future.

So he started by saying he's not afraid; neither am I, and nor should the public be. And I think Acting Administrator Held did a good job of talking about that we will not operate a facility -- will not do the operations in the facility if we

suspect it's not safe to do so.

So while we're not scared, we have to remain constantly vigilant or chronically uneasy, if you will, about the safety everyday, and so that's where the people come in. And we'll be talking about that through the course of today on how we monitor that, how we're constantly checking that to ensure that every-day operations are safe both for the workers and for the public.

I think he did a good job of overall describing the processes in 9212, so I don't need to do that again. We'll also talk in the course of this panel discussion, and probably throughout the day and the things that we can do everyday to increase the margin of safety.

We'll talk in more detail about reducing Material-at-Risk. So basically just less enriched uranium available for these -- we'll call them low probability but high consequence events that you're referring to. Although they've never occurred, they're still -- although improbable, they are possible. So we have to constantly be looking at our readiness to respond in the event that that occurs.

I will concur with the statements about the well-engineered safety systems and well thought out

administrative controls that are put in place to ensure the safety.

Then later today we will talk more about emergency preparedness in the event that we do have these beyond-design basis and large-scale events and how we're prepared to respond to those as well.

MR. SULLIVAN: All right. Now, Mr. Erhart, in preparing for this hearing I looked back at some of the history here, and going back 10 years I can find evidence that 10 years ago it was identified that some of these analyses -- through some of the analyses that the building wasn't up to modern standards.

So can you just describe what's happened over the last decade in order to make things safer, what measures -- specific measures have been taken with respect to the operations in 9212.

MR. ERHART: Sure. I'll give an overview, and there's -- probably more detail can be provided by my counterparts here on the panel. But -- so the -- once the recognition officially in the safety basis documentation of the vulnerability of the facility to these seismic events, I think in the site plan the NNSA took proactive steps to review the facility and its systems.

We'll talk more in detail about what came out of those reviews. I think they were focused on the right things in things like electrical systems being susceptible to fire, ventilation systems that -- and these are all due to age -- ventilation systems that could be upgraded to better protect the workers.

There will be -- there were some investments we'll talk about on doing what we could structurally to increase bracing where it made sense to do so, looking overall at our fire protection strategy, make sure that that is sound. So the review is well-focused, and I think it did identify some things that we could do. As we mentioned earlier, these are steps to allow us to continue to operate the facility while we work to get the replacement facility in place.

I think I'll leave it there for now, and we can probably get more detailed with the actual findings and then what came out of the findings as far as corrective actions.

MR. SULLIVAN: Okay. Well, specifically are there things that have not been done because of the plan to have a replacement facility?

It's like my old car. You know, when I'm

planning on buying a new one, there are things that I just don't bother to get fixed. So is that the case here with 9212 as well?

MR. ERHART: There was the realization that to fully address the seismic vulnerability you'd essentially have to rebuild the facility in place. So that was not going to be cost effective. I think the monies that were available were better spent on these things that can affect the overall safety of the operations without requiring a full investment of rebuilding the walls and the roofs in total of the building complex.

That's what the Uranium Processing Facility is designed to do. So we were making good investments to allow continued safe operations while we work towards getting the new facility in place.

MR. SULLIVAN: Great. So if I understand you correctly, the new facility would withstand an earthquake much better than the existing facility? And we haven't done all the things to make 9212 withstand an earthquake as we would a new facility; yet the public is still protected based on these other measures. Is that correct? Did I summarize everything that you said here correctly?

MR. ERHART: Yes, sir. The risk to the

public and to the workers has been minimized. Certain seismic events still can result in the failure of the building, but through these measures that we'll talk about in more detail, about reducing the material that can be available to be spread around in the event of a catastrophic seismic event, we have taken prudent action to minimize that risk.

MR. SULLIVAN: Okay. Thank you.

MR. ERHART: Yes, sir.

CHAIRMAN WINOKUR: Okay. Ms. Roberson.

VICE CHAIRMAN ROBERSON: Thank You, Mr. Chairman.

Good morning to Panel Members.

So I would like to kind of pick up where Mr. Sullivan just left off.

Due to the seismic issues, NNSA made the determination that the facility at some point had to be replaced. There were two other parts to the balanced approach you undertook. One, was MAR reduction. The third one was practical modifications. So I'd would like to talk a bit about how you -- what went into that determination and what came out of it. And everyone has noted how important that was to ensure safety in the 9212 complex.

So I'd like to start with you, Ms. Robbins.

You were on the team I believe that did the Facility Risk Review. Is that correct?

MS. ROBBINS: Yes, ma'am. That's correct.

VICE CHAIRMAN ROBERSON: You actually represented the site office, correct?

MS. ROBBINS: Yes. I actually led the review.

VICE CHAIRMAN ROBERSON: You led the review. Wonderful.

So what were the objectives of the review?

MS. ROBBINS: Well, at the time we were faced with -- we had identified the seismic deficiencies in Building 9212. We had UPF on the books. It was in the design space, but we knew we wouldn't have UPF for some period of time. It's a large complex project that's going to take a while to complete.

But yet we needed to continue our mission, and we wanted to continue to operate safely. And so we did what we call the Facility Risk Review, which was -- we used a risk-based decision making process to evaluate what we knew today, what we anticipated would be a result of aging impacts on the infrastructure and the facility and process equipment.

And we were looking at a 15-year lifetime to continue operating 9212 at that time. At that time UPF was on the books to be completed by 2018. We knew there would be some period of transition out of 9212 and into UPF. And so we believed that 15 years -- we completed the Facility Risk Review in 2006 -- that would give us three years to fully transition and clean out 9212.

So we did the Facility Risk Review looking at what practical facility modifications we could make. We collected all of the -- we have a number of very highly expert system engineers and knowledgeable enriched uranium experts, and we looked at all the facility conditions as we know them today.

We took all the data we had, and we looked at what were our most vulnerable risks as far as fire potential, release of enriched uranium, our safety systems, were they being maintained, could they have aging-related effects, did we need to invest there.

And we collected all the information, and we identified a series of -- a list of practical facility modifications, and we established some evaluation criteria to look at those.

The evaluation criteria we looked at -- because we knew 9212 had a limited life. We had a

UPF project on the books to replace it. So one of the most significant evaluation criteria we used was the duration of the benefit, what I like to call the return on investment. If we're going to make investments in this aged facility, we want to get the investments in as soon as possible so we can reap the benefits of those investments for the longest period of time.

As you know, in the Department of Energy we're an annually funded organization, and to do line-item projects sometimes takes years, and so that skewed it toward really practical modification instead of huge line-item projects.

The next criteria we looked at was the safety benefit. One of the things we found when we were doing the Facility Risk Review is that if you -- for 9212, it's somewhat unique in nuclear facilities. Typically in a nuclear facility if you shut down operations, you place your facility in a safer form or safer state.

For 9212 we found that because the forms of the enriched uranium materials are more hazardous sometimes if they're not processed into a more stable form, it was actually safer to get the processes operating more reliably so we could take all of those

backlogged enriched uranium materials that weren't in a safer form and put them in a safer form. And so that factored into our safety benefit evaluation criteria.

We also looked at operational reliability. We do have a mission, the National Security Mission and so that was important if we weren't going to be able to meet our customers' requirements and needs.

And we also looked at impact to operations. If particular modification was going to impact operations, then that was going to impede our ability to improve safety as well as meet our mission requirements. And then we also factored in cost. And so that was the outcome.

VICE CHAIRMAN ROBERSON: So the team did this review. You applied this criteria. So how was all that integrated into NNSA's overall strategy?

MS. ROBBINS: Well, NNSA's overall strategy was to continue to operate 9212 safely until we could get the Uranium Processing Facility.

And NNSA embraced the Facility Risk Review and the outcome of that and committed to the investments that were required to continue operating safely 9212.

VICE CHAIRMAN ROBERSON: Thank you.

MS. ROBBINS: You're welcome.

VICE CHAIRMAN ROBERSON: So, Mr. Tindal, aside from the structural deficiencies already noted by Mr. Spencer, what were some of the specific ventilation system, electrical system, and process equipment, age-related problems, or risks identified during the Facility Risk Review.

And if you can use some examples of just why the team determined those to be risks, that would be great.

MR. TINDAL: Thank you. I would be glad to.

Madam Vice Chair, Mr. Chairman, distinguished members of the Board and staff, I appreciate the opportunity to be here and talk about these issues, something I've been very passionate about for a number of years.

The Facility Risk Review did identify, as you stated, issues with ventilation, electrical. It also pointed out some issues with small diameter pipe utilities and additional process equipment. And the common thread through all of those is worker safety and minimizing the risk to the public.

Some examples of the ventilation system failures were degraded ductwork. Some of the

ductwork were run outside on the roof of the facility, so degradation due to just deterioration of the ductwork was an issue identified.

And as pointed out by Mr. Spencer, this is a facility that was designed and built beginning in the late '40s but construction really continued for a number of decades afterwards as additional capabilities were added to the facility. So there is examples, and were examples, of non-standard HEPA filter installation, things we wouldn't install that way today if we were to install them.

On the electrical side it is really symptomatic of that same example, of construction beginning at one point late in World War II, continuing on through the decades of the '50s, and into the early '60s before construction would really be something we would call complete.

So there's a variety of different electrical systems that were installed in the facility of which leads us to a variety of different ages, such that some of the motor control centers, lighting panels, and other items there are just showing signs of age.

One in particular example is in early -- before the Facility Risk Review we had noted a small

electrical fire in the lighting panel that was not in one of the process areas, but what it did for us is triggered that there could be issues with similar lighting panels throughout the rest of the facility.

Part of the Facility Risk Review identified that lighting panels were a point of concern and identified some needed upgrades there.

In the way of small diameter piping utilities, the risk there is that -- particularly for electrical -- the risk we're talking about is not necessarily the loss of the equipment but that it could cause a fire that would be the initiator for a release to the public. That's our main concern.

So the issue with small diameter piping is again not the short-term loss that we might have in a condensate pipe or a process water pipe. It's that it could have an impact on the electrical system and be another source of an initiator for an onsite release. So it's something that we were concerned about.

And as Ms. Robbins pointed out, the issue with process equipment -- and this was my first time in participating in observing a review like this where there was identification that often the ability to have capabilities to process material puts you in

a safer condition than not processing at all. So the ability to continue to process, reduce the stored materials within the facility, reduce those materials that would be available for an offsite release would be extremely important.

Two examples of the process equipment that were identified in the review are the casting vacuum systems or casting furnaces or vacuum induction melting furnaces. So they rely on a pretty robust vacuuming system to provide that service. They were identified as in need of improvement.

The second example has to do with the capability that -- Mr. Spencer talked about our accountability. We had a gas fire furnace that is used to the size reduce a lot of the combustible salvage that comes into the facility. The issue there was that it was beginning to age, concerns over its lifespan, and needing it to be an essential part of minimizing risk of that salvage --

VICE CHAIRMAN ROBERSON: Thank you, sir.

So, Ms. Robbins, we talked about the criteria for conducting the analysis and some of the risk identified. What was the criteria for prioritizing the projects, the fixes?

MS. ROBBINS: Okay, Ms. Roberson. Thank

you for the question.

Yes, we looked at the duration of benefit, which is the return on investment. We were looking to see things like the seismic deficiencies. To replace or to correct those structural deficiencies would be a very long period of time to correct. It would be a significant line-item project. As Mr. Erhart has said, it would be essentially reconstructing the facility in place.

So that would have made that modification to the facility too expensive, too long of a duration to actually get the benefit. We would probably complete that at the time UPF was coming online, and so that didn't make that investment wise.

We also looked at the safety benefit, how are we going to -- what can reduce the Material-at-Risk the most, because minimizing the enriched uranium materials stored in the facility reduces any potential safety risk to the public and the workers and the environment.

We looked at the safety systems to make sure that they were going to be reliable if there was an investment needed in a safety system. It would have been weighted very high that we needed to make that investment.

We looked at operational reliability, and we weighted that pretty high as well to make sure we could continue to meet our mission requirements. Cost we rated the lowest.

VICE CHAIRMAN ROBERSON: Cost was rated the lowest.

Well, let me -- we already talked about in this review the timeline for the facility was about 15 years. How heavily weighted was the timeline?

MS. ROBBINS: The timeline we rated about thirty-five percent.

VICE CHAIRMAN ROBERSON: Thirty-five percent?

MS. ROBBINS: Yeah.

VICE CHAIRMAN ROBERSON: Okay. So, Mr. Tindal, can you tell us and the public some of those more significant recommendations from the review.

MR. TINDAL: Yes, I'll be glad to.

So the significant recommendations from the review followed along very nicely with the issues that were developed during the review.

So some of the examples on the ventilation side identified that the ventilation systems serving our enriched uranium casting area, which we refer to

as Stack 110, was something that was both critical for minimizing release, critical for worker protection, but also critical for ensuring that the casting furnaces remain operable to do their part in maintaining the materials as well as possible.

There were additional stacks that were identified. Stack 33 was also identified. There were a number of different motor control centers, five lighting panels that were identified to be replaced.

In the area of small pipe utilities there were upgrades to the steam and steam condensate systems, what we call tower water, which is just an industrial cooling water system that's used for many of our steam powered equipment.

And in the order of production equipment the recommendations coming from the Facility Risk Review were centered along a replacement for the gas furnace I spoke of previously, upgrades to the casting vacuum system.

But it also pointed out something that was equally important in that we recognized that we may not know what investments we might need to make in the future and recognized that as we were reaching the end of life in many of the -- in not only the

facility and the infrastructure but in some of the process equipment -- we expected an increase in the amount of failures in many of those systems.

So it planned for an increase in what we called maintenance in critical spares in order to say -- we may not know exactly what we may need to fix, but we know we're reaching end of life in the facility, and we expect there could be increased failure rates. Let's go ahead now and plan for those failures and reserve some additional resource to deal with those.

VICE CHAIRMAN ROBERSON: So -- and I think you're the right person to ask this question. So you have this list of projects, you've increased awareness, but some of the fixes are related to concerns of criticality, safety, or radiological protection. So while we're implementing these projects, what are your expectations for your workforce if they run into problems now knowing what these risks are?

MR. TINDAL: Thank you.

One thing I'm very proud of is our culture at the site of safety. And we have the expectation -- and our workforce exhibits it quite well -- is when there's a safety issue brought up, we're to

stop, get the right technical resources -- I mean not attempt to correct the situation.

And oftentimes when a problem occurs in our household, we want to stop and we want to go fix it right away. And we encourage our workforce to not do that. The items that we deal with -- the risks involved are such that we want our workforce to stop and bring in technical resources.

If it's a criticality concern, we want to bring in that criticality expert to analyze that situation and provide us with technical guidance on what to do with that. Only once that technical guidance is provided and we can implement that guidance do we return to work. And our workforce has exhibited that on number of different occasions.

One example I could bring up for you relates to that Stack 110 ventilation system that serves on our casting furnaces. As pointed out in the Facility Risk Review, there were significant concerns over its ability to perform its design function throughout the remainder of its life.

And we did in fact see those a number of years ago. We were beginning to see water intrusion into that ventilation system, and it was accumulating in some of the ventilation system traps, traps that

we use to collect particulate matter as it comes out of the ventilation system.

And that's of particular concern for us because water intrusion into a ventilation system such as that could pose a criticality risk to us. We were able to deal with those rather non-routine events in a not routine way. But as they became more frequent, it was apparent to us that we were seeing degradation that was starting to accelerate.

So we in evaluating that situation imposed some very restrictive limits on our operations to the point where we had to shut down operations, reevaluate what loading limits we could put in place, and increase the monitoring frequency on our ventilation exhaust filtration system to be sure that it stayed safe as we operated it.

I'm very happy to say that some of the foresight that the Facility Risk Review identified in requiring Stack 110 to be replaced has come to fruition and that just recently the Stack 110 filtration system has been replaced with a new modern filtration system, one that we can be more confident in and one that is a significant improvement in safety.

VICE CHAIRMAN ROBERSON: Okay. Thank you,

sir -- thank you both.

CHAIRMAN WINOKUR: I'm going to get an opportunity to question you, Mr. Keith, because we don't want anyone to be left out here.

But let me go to you, Mr. Spencer, for a second, because I want to make sure the public understands how old this building is, because we've done a little bit of talking about seismic and the collapse of the building and serious things like that. But this is a Building whose roof leaks.

We've talked about the fact that there's electrical cabling in the building that's 50, 60, 70 years old -- I mean just to give the public a feel, this is very old building, right?

MR. SPENCER: It is an old building.

CHAIRMAN WINOKUR: A very old building.

MR. SPENCER: As I age, it becomes less significant, I think, you know --

CHAIRMAN WINOKUR: But you understand what I'm saying, I don't want them to get the impression -- I mean this is a building -- and this country has made a decision to reinvest significant resources to replace it.

MR. SPENCER: I was joking. Obviously it's very old. It was built in the '40s as I said. So

you do the math; it's 70 plus years old, a very old building.

We do monitor all that. We monitor the roof. We just recently did roof repairs. We monitor the electrical systems we've talked about.

And I'll tell you this FRR [Facility Risk Review] approach we took way back when saw this Stack 110 mod needed -- and I'd only been here a year. And that was a blessing, the fact that they had anticipated that, come in, done the work, done the design, done the engineering, found one problem with the vendor wells, sent that back, and still got it in on time.

And it's wonderful, because as Bill was describing, we had to go through a whole series of step-downs in that facility to make sure we didn't approach this criticality issue, right?

So we're managing the facilities. We're constantly monitoring. These guys do a CSOOT [Continued Safe Operability Oversight Team], this report that comes out that looks -- but they look at the individual elements of the facility every month --

CHAIRMAN WINOKUR: All right.

MR. SPENCER: -- and it rolls out to me at

the end of the year.

CHAIRMAN WINOKUR: All right. Thank you then.

MR. SPENCER: Yes, sir.

CHAIRMAN WINOKUR: Okay. So, Mr. Keith, the Board would learn on March 13, 2007, and certainly acknowledged the fact there have been significant contributions in the Facility Risk Review that you had performed, the recommendations that came out of it, but the Board was obviously very concerned about the public and the workers and safety especially in light of the fact that operations in this building -- at the time 9212 -- would have to continue for 15 years or more until the UPF came on line or later if UPF was delayed more than that.

And so the letter advocated a regimen of increased vigilance and close observation to annually assess the condition of 9212 as a means of ensuring continued reliable and safe operation. And as a result of that, as you're aware, the contractor formed the Continued Safe Operability Oversight Team, or CSOOT, which Mr. Spencer just mentioned.

And you were the CSOOT Chair, right?

MR. KEITH: That is correct, sir.

CHAIRMAN WINOKUR: So can you describe the

original purpose of the CSOOT and the facilities to which this oversight or the CSOOT activities applied?

MR. KEITH: I'd be happy to, Dr. Winokur.

The CSOOT was formed, and it was really a joint effort with the NPO production office, the site office at that time, and the contractor.

And the CSOOT was set up to institutionalize the approaches you mentioned that came in the admonition in the letter to do an annual review. And so we set up a team to look at that and monitor how 9212 was aging, both from the process standpoint and from the facility condition.

So CSOOT was set up and involved a certain set of membership. Our membership is a set of senior managers on both the B&W [Babcock & Wilcox] side and the NPO [NNSA Production Office] side and key subject matter experts.

And so from the B&W side we have production representatives, including Mr. Tindal, engineering, nuclear safety, programs, and maintenance. And from the NPO side Ms. Robbins is a member, as well as facility representatives for 9212, as well as programs, and nuclear safety personnel.

The CSOOT set up a framework to identify a set of performance indicators. As we've already

talked about, there was not a lot of maintenance records and things and history at that time that was documented evidence that we could go and review. So we set up performance indicators to be able to begin trending the aging and what we learned about the facility.

And so some of those tools involved system availability. These things have grown into what we now refer to as our System Health Reporting Process. We look at the backlog of maintenance and those types of indicators.

We also wanted to validate those indicators so we set up a regimen of independent inspections where we wanted to bring in outside experts to validate what we were seeing and not just, you know, have the Y-12 view of things and get some outside look to what was going on.

Another area that we looked at is we wanted to able to monitor what's going on across the site and look at what are events that are occurring, and are they aging related, and as a result do we need to take further action in 9212 in anticipation of things we're seeing around the site.

Another area is -- and Mr. Tindal talked about the activities that were identified as part of

the Facility Risk Review. One was the NFRR -- Nuclear Facilities risk Reduction -- the activities that became the NFRR project and also just the regimen of increased maintenance that we might anticipate as this facility, you know, goes into its latter stages of life.

So one of our charges is also to look at are we effectively using those resources and are we making progress with the NFRR.

The last area that has been alluded to several times is the hazardous material inventory. One of the best ways to increase safety is to reduce those inventories. And particularly at the time when CSOOT was formed, particularly in the wet chemistry area, the recovery areas that Mr. Spencer described earlier, we were just beginning to get into a consistent operating tempo. So we had a backlog at that time of solutions that we did not want to have, and it's not the safest form we would like to have uranium in.

And so one of the goals of the FRR had been to establish some goals for reductions of those particular materials as well as uranium metal. And so the CSOOT monitors those Material-at-Risk reductions over time, hazardous material inventories.

And then finally we, as has been alluded to earlier as well, have a regimen of reporting relationships. We meet on a monthly basis. Typically we report quarterly to senior management at the site, and then annually we report to NNSA headquarters as well as do the annual report and the briefing to the Board. You will recall our briefing back in August.

CHAIRMAN WINOKUR: All right. So what were the most significant things that the CSOOT identified in the last couple of years once it was formed? What were some of the things -- the most significant things you were uncovering after the initial Facility Risk Review?

MR. KEITH: Well, after the initial Facility Risk Review -- you know, our recommendations have changed over time. I think we want to make sure that we're continuing to fund, and we typically look at the funding aspects of particularly the base maintenance operations and what the additional resources for maintenance are beyond that. Another area is ensuring that the projects are continuing to progress, NFRR in particular.

One project that was not included in NFRR that was proposed in the original NFRR was the Holden

gas furnace. The Holden gas furnace is a programmatic piece of equipment that is very important for our accountability operations in doing the bulk reduction that Mr. Tindal referred to earlier without it having a project for replacement or a sister unit installed. The importance of that unit was very key to the site, and so we made recommendations on evaluating spare parts, you know, and increasing the regimen of the surveillances and things to protect us if that -- that particular unit were to have issues. And that's one of the issues that we've had over the past year.

CHAIRMAN WINOKUR: I think in 2011 you conducted an evaluation to re-baseline the original Facility Risk Review for Building 9212. Is that right?

MR. KEITH: That's correct.

CHAIRMAN WINOKUR: And what recommendations came specifically out of that reevaluation?

MR. KEITH: Well, first, you recall the original FRR was done largely based on expert system knowledge, experts that -- people in the facility with historical knowledge of the facility. And there was very little maintenance data as I mentioned earlier.

So now, you know, fast forward into the 2011 time frame and we had established some of these indicators, both from a CSOOT perspective, and there were lots of other activities onsite. Production had instituted to better control what we were seeing from an aging standpoint and react to the needs of the facilities.

And so by this time we had instituted a suite of controls and tools to be able to use at that point in time to evaluate where we were five years later, or approximately five years later, and that included the operations plans, the production developed, these performance indicators, and the results from some of these independent inspections that I mentioned earlier.

So for the 2011 relook at 9212 there were three key conclusions out of the review: One was that the original conclusions of the FRR continued to be valid and that the associated projects and FRR additional resources were the right things to do.

The second was that management was doing a good oversight job and with the various tools that had been in place, including CSOOT and these other tools I've mentioned, the suite of tools. And those things since that time have grown into what we now

refer to as our Aging Management Program, and you will hear probably more about that today.

And lastly, again 9212 is not getting any younger. It's very important for us to continue forward and complete UPF and transition out of 9212.

Now, there were five recommendations in addition to those conclusions. The first recommendation really was -- when CSOOT was formed initially, we focused primarily on 9212 as a structure and a complex itself, and we didn't look site-wide. Some of the things that we had learned in the ensuing time period was that if we're not able to supply the facility with the cooling waters, the industrial gases it needs to use to do daily operations and convert uranium to these safer forms, then that presented problems from an overall risk perspective as well.

So one of the recommendations was to expand the CSOOT purview to look broader than just the 9212 structure and facility itself.

The second had to do with operations plans. One of the tools that had been developed over the previous couple years prior to the relook have been production, developing operations plans to help provide input into what we do for our annual budget

request process, and they were to capture their needs from an aging standpoint, operational standpoint, and risk rank them as input into that process.

The operations plans at that time were in their very early years, and so some recommendations were made to mature those processes, which has since been completed.

There were a couple of recommendations that dealt with both equipment replacement and new technologies that might help us as we move forward in shutting down 9212 and transitioning into UPF. Particularly the replacement equipment was to address some long-standing worker hazards in the facility that also included some criticality hazards, and there's a project in place now to address this process, condensate system.

The final recommendation was to begin to think about pre shutdown plans for 9212 and take advantage of the time we have between now and this ultimate delivery of UPF and begin to lay out those plans and make initial activities to put us in a position to better be ready for decontamination and the decommission phase of 9212.

CHAIRMAN WINOKUR: Just very generally,

we're talking about a time period from 2006 to 2011, what kind of trends were you seeing? The Board was concerned that it was going to be 15 years until UPF came online, and you're looking over these five years and continuing to reevaluate things. What trends are you seeing, and are you very concerned about what you're seeing?

MR. KEITH: Well, what we've seen over the past few years, and probably since the 2011 time frame, is as Mr. Tindal noted, the additional leakage in the Stack 110 ventilation system is one area and our Holden gas furnace that I mentioned earlier. We did institute surveillances for that particular piece of equipment.

It's a natural gas burning furnace, and in our inspection back in the spring of this year we identified cracking in one of the two walls in that furnace and that caused us to take action to limit operations and to make plans then to refurbish the furnace.

In fact, we are currently shut down with that operation and refurbishment of the entire internals of the furnace is under way to replace the fire brick.

In other areas, looking site-wide, it led

to some of the other thinking that I mentioned a moment ago with regard to the respective of CSOOT is our potable water system at Y-12 is a huge complex system and it's a very robust system. It serves both our drinking water for the plant. It also serves as our fire protection system supply.

And over the past five years, six years or so, we've had a couple of fairly significant line breaks in that potable water system. It's made up of about 25 miles of piping, and even though we've had a couple of rather large projects over the last 25 to 30 years to replace a significant portion in roughly 80% of that piping, there is still about 20% of original cast iron piping. And cast iron, as you guys probably understand, is a very brittle material, and it's subject to corrosion activities and can fail catastrophically.

So what we are doing now is we've completed a risk evaluation and are making plans to address some of the remaining higher risk portions of that piping system.

CHAIRMAN WINOKUR: Well, just briefly, could you summarize your approach to funding these sustainability projects.

MR. KEITH: Since the original FRR, our

approach has been to -- the funding prioritization has included both the project line item space as is evidenced by the NFRR project, as well as our annual budget request process.

Now, I want to emphasize that safe and compliant operations is our main goal and what we worry about everyday. However, for the annual reviews and the annual budget requests, the FRR, additional maintenance is our highest request above base maintenance operations for the additional expenditures.

And I'd like to add that over the past few years the site has been able to address FRR requirements fully; but, however, in the current budget environment with the current continuing resolution, as well as the potential for additional sequestration impacts, these could hinder our ability to maintain and accomplish the FRR actions that we planned. And we continue to communicate that actively with NPO and with NNSA headquarters.

CHAIRMAN WINOKUR: And, Mr. Erhart, let me finish with you. Can you give me your perspective on the ability to get the necessary funding to sustain these improvements that are necessary.

MR. ERHART: Yeah, I would consider the

support overall from NNSA historically pretty good on providing funding.

I think we've had invested in the right spots about a hundred million dollars over the course of the improvements that we were just discussing.

But I would also concur with the forecast that budgets will be tight in the future. There is a need to continue on the path that we're on, but we also realize that the budget, given the constraints, there's priorities across the entire nuclear security enterprise. But my office and along with the B&W contractor will be sure that we provide our input in what we estimate to be the needs to do that in a factual manner so that we remain credible with our requests. And we'll continue to fight for appropriate priority for the foreseeable future.

CHAIRMAN WINOKUR: Okay. Thank you.

Mr. Sullivan.

MR. SULLIVAN: Thank you, Mr. Chairman.

Right up until now we've been spending all of our time I think on Building 9212, so I'd like to turn for a moment to the other two principal buildings mentioned in the first testimony. Those are 9215 and 9204, Beta-2E.

So let me start with Ms. Robbins. Would

you help just briefly explain to the public what happens in those two buildings.

MS. ROBBINS: Yes, sir. Thank you, Mr. Sullivan.

Building 9215 is an enriched uranium metal working facility. It's a machine shop, primarily handling just metal forms of enriched uranium.

The Beta-2E or 9204-2E facility is an assembly/disassembly and quality evaluation facility where secondaries are assembled, disassembled, and evaluated, radiographed, for the weapons work.

MR. SULLIVAN: Okay. And for those of us who did machining in high school, if you're machining uranium, do you have to do anything different than if you were machining any other metal?

MS. ROBBINS: Yes, sir. Machining enriched uranium creates not only a respirable hazard to the worker, there's also a criticality safety hazard from the machine chips that are created from the machining process, that we have to make sure that all the geometries and the collection of chips remain safe for a criticality safety reason.

MR. SULLIVAN: Okay. Thank you. So these buildings -- have we done a Facility Risk Review on these buildings as well?

MS. ROBBINS: Yes, sir. After the 9212 Facility Risk Review in 2006, because buildings 9215 and Beta-2E capabilities were also going to be replaced by UPF -- will be replaced by UPF, the NNSA committed to do another Facility Risk Review to look at those facilities.

So we did a Facility Risk Review that was completed in 2007 for Beta-2E and 9215, using the same criteria and approach that we had used on the Building 9212 Facility Risk Review.

MR. SULLIVAN: All right. Thank you.

So, Mr. Tindal, let me turn to you. We heard before about 9212 not being up to modern standards and seismic deficiencies. Do we have the same issues with these two buildings?

MR. TINDAL: If by that, do you mean do we have similar seismic concerns?

MR. SULLIVAN: Yes.

MR. TINDAL: I would say in some ways yes, and in some ways no. Building 9215 and Beta-2E were constructed in different ways. 9215 was constructed similarly to 9212 in that it's a steel-frame facility with lay tile infill; where Beta-2E was constructed more in the 1960s and was more of a concrete construction, so its ability to withstand seismic

events was significantly greater.

MR. SULLIVAN: Okay. But in the case of 9212 we heard that it's not up to modern standards. Are these buildings -- well, as I understand, the 9215 being similar to 9212, I would assume that that's the same, that it would not be expected to survive intact in a major earthquake in this area?

MR. TINDAL: That would be true for 9215, yes, sir.

MR. SULLIVAN: Okay. And Beta-2E, do we think it would survive?

MR. TINDAL: Well, again it would depend on the severity of the earthquake. And there are some analyses that showed that the seismic capability for Beta-2E is greater, but again it would depend on the event.

MR. SULLIVAN: All right. And some of the other sort of deficiencies which were spoken about with respect to the 9212 ventilation systems, electrical systems, what sort of -- just compare for Buildings 9215 and Beta-2E, how do they compare on some of these other systems?

MR. TINDAL: Yes, sir. Well, since the same criteria was used for Beta-2E and 9215 as was used for 9212, including the fact that the transition

to UPF would occur on a relatively -- a 15-year time frame, the amount of deficiencies identified for 9215 and Beta-2E were significantly less.

And that's primarily driven by much reduced complexity. In 9215 we're talking about essentially a general machine shop, albeit a very special one, and in Beta-2E the infrastructure and the equipment being installed in the 1960s had much fewer concerns from an aging standpoint at the time frame we did the review.

So if you were to compare side by side the number of issues identified for 9215 and Beta-2E to 9212, you would see that it's significantly less.

MR. SULLIVAN: So it's like my family; we have three cars. They're all old, but one is really old and the other two aren't so bad.

MR. TINDAL: Yes, sir.

MR. SULLIVAN: Okay. Nevertheless, so Mr. Erhart, again your job here, being overall responsible for safety, are there safety-related risks from these buildings due to the fact that they've been around for so long. And while one of them is newer than the others, it's still not the way we would do it today if we were to build from scratch?

MR. ERHART: I would agree with that, yes, sir.

MR. SULLIVAN: Okay. So can you explain again in terms of risk to the public what is the risk here that we should be concerned about.

MR. ERHART: On 9215 we talked about the form of material much different than in 9212. So given that mostly the material is in a metal form, metal turnings or shavings, still have criticality concerns, but much less I'd say given the various parameters you have to control in 9212 when you're talking about aqueous solution, et cetera. So the overall risk of operations in 9212 or 9215 just because of what we're doing is pretty low.

The approach that we take in 9215 is similar to 9212, and have been working on, is to again remove Material-at-Risk. So, again this will be mostly metal and mostly metal shavings, but get as much of that into the more robust facility, as we mentioned earlier, the HEUMF, take a fresh look at our requirements and see if we can lower our administrative controls.

We're already well below the bounding limits that's described in our documented safety analysis for operations in 9215, but look if we can

do more of that. And then a similar approach to looking for reasonably cost effective and targeted investments to look at the things that we can do in embracing, et cetera, as far as making the facility more robust.

But I would concur that that facility also, like 9212, does not meet the current standards had we built a new building.

MR. SULLIVAN: Okay. Thank you.

Ms. Robbins, out of the Facility Risk Review done for these buildings in 2007 -- I think you said that's when it was -- were there other specific recommendations that were made on these two buildings?

MS. ROBBINS: Yes, sir. Specifically for 9215, as Mr. Tindal has noted, the age and condition of the facility is somewhat different than Building 9212 and due to the nature of the process there the situation is different. So the investments that were needed in 9215 were additional maintenance resources. We asked for additional maintenance funding for that facility.

The Beta-2E facility, while it is the youngest of the facilities, it did have some systems that had degraded and had not -- that needed some

investment. Specifically there was a check vacuum system that supports operations there that we needed to replace some pumps.

We had some processes that were being done in a facility next door to Beta-2E with the ability to transfer those materials back and forth. That facility has structural deficiencies, so we wanted to move that process capability into the Beta-2E structure which is seismically qualified for its design basis, earthquake.

And also we had some investments to make in the environmental monitoring system for one of our special rooms that has to maintain a very dry atmosphere.

MR. SULLIVAN: Okay. And so I'm back to you, Mr. Tindal. Do we have -- as we're sitting here today, do we have a long list of things to do still on -- for these buildings that are coming out of the Facility Risk Review, or have we pretty much done what the recommendations of 2007 said needed to be done?

MR. TINDAL: Well, I think for the most part the recommendations coming out of the 2007 Facility Risk Review were completed. The upgrades to some of the ventilation systems, upgrades to the

processes were completed.

MR. SULLIVAN: Okay. And, Mr. Erhart, just in terms of budget and support for the repairs and these upgrades that have been talked about -- and we're talking about Buildings 9215 and Beta-2E -- are we getting the budgetary support we need or have needed?

MR. ERHART: Again, same answer as before; so far, so good. There is a lot of the things we talked about we can do a lot, probably more than we realize, with existing funds, so we continue to challenge ourselves there.

But so far, like I said, the NNSA's response to the request -- they understand the priority -- has been pretty good to date, and it will involve the same strategy I mentioned before with pointing those needs out and communicating them effectively to management headquarters.

MR. SULLIVAN: All right. Thank you, Mr. Chairman.

CHAIRMAN WINOKUR: Ms. Roberson.

VICE CHAIRMAN ROBERSON: Thank you, Mr. Chairman.

So we have a replacement plan, and we had our Facility Risk Reviews for all three facilities,

and we integrated those into our strategy and our budget, and then in February of 2012 the NNSA Deputy Administrator for Defense Programs provided direction to the project to defer transition of enriched uranium operations from Buildings 9215 and Beta-2E.

So, Mr. Held, I would ask you why were you comfortable with this decision to defer part of the original scope?

MR. HELD: Why were we comfortable with the decision? I think we were comfortable with the deferral because we had set in place an investment plan with stopgap measures and oversight that we were comfortable that continued safe operations could continue.

The -- I think -- what we need -- and so we've been successful in financing the stopgap measures and the oversight. Where we've been less successful is getting the funding for the transition plans so that we can actually implement those. And that is one of my primary responsibilities to -- to make us more successful in doing that.

VICE CHAIRMAN ROBERSON: Okay. So as a result of that direction, Mr. Erhart, the NNSA undertook a Facility Risk Review for Buildings Beta-2E and 9215 called a re-baselining in May of

2012. Is that correct?

MR. ERHART: Yes.

VICE CHAIRMAN ROBERSON: And so what was the timeline assumed in the re-baseline of those two facilities?

MR. ERHART: So the -- I hope I get these dates right. The re-baseline of the -- we had to assume a date based on the decision in the memo that you just discussed. It was assumed at the time, and without further direction, to put a date of 2030 as a planning assumption, and then we used that date as a timeline to start the study -- to do the further studies to try to time our investments appropriately. And then -- as that evolved, that date started to change a little bit -- we can fill you in. But the original 2030 date was basically an assumption that the team used locally to get our review started.

VICE CHAIRMAN ROBERSON: So correct me, it sounds like 2030 was just a holding date until you could do the other activities you needed to do to figure out what the real date might be. I think that's what I just heard. Is it?

MR. ERHART: Yeah, I think I'll pass that to Teresa. She's got the timeline to -- I think she could do a better job with the dates since I wasn't

here or involved in that.

MS. ROBBINS: Okay, sure. Thank you, Steve.

The 2030 date was a planning assumption to use because we didn't -- we had not received direction yet from the program as to what date to assume. We did work that with them, and they agreed with the planning date.

As the Nuclear Security Enterprise was evaluating the program overall for modernizing the enriched uranium and plutonium facilities, there was a decision to prioritize UPF, and specifically the Building 9212 capabilities going into UPF.

And there was a decision to defer the CMRR nuke facility, the Chemistry and Metallurgical Research Replacement facility, at the Los Alamos National Laboratory for five years as a result of that decision.

So looking at the overall enterprise, the decision was to replace 9212 capabilities and UPF first, replace the plutonium capabilities at Los Alamos National Laboratory next, and then following that would be the replacement of the 9215 and Beta-2E capabilities.

And looking at that planning, the date of

2038 is what is currently in the NNSA plans.

VICE CHAIRMAN ROBERSON: Okay. Thank you.

Mr. Tindal, so with this expanded timeline can you summarize the additional significant recommendations that came out of the re-baseline.

MR. TINDAL: Yeah, I'd be happy to.

Significantly, the second Facility Risk Review -- in a sense we call it the Facility Risk Review 2 -- when it was conducted on those two facilities, the additional timeline added what wouldn't have been included in the original. So things like additional electrical improvements, some of the production equipment that had not been part of the recommendations was included.

Some examples of that would be movement of some furnaces out of the facility to Beta-2E, some additional improvements in the environmental room, and some additional -- I mean said a different way what we identified is from a nuclear safety standpoint the 50-year time frame where the sprinkler systems would be required to replace their sprinkler heads would fall within that window. So additional funding was identified as being required to do those corrections.

VICE CHAIRMAN ROBERSON: So, Mr. Erhart,

how is the site doing on implementing -- prioritizing and implementing the sustainability projects for 9215 and Beta-2E? How would you characterize the site's progress?

MR. ERHART: Again, for planning for extending the life until we get a replacement facility, again I think the progress so far has been good. I think we're going to get the CSOOT up and running and be looking at those two facilities, 9215 and Beta-2E, and applying the same criteria. So I think that's a good move.

Some of the things that have already occurred as part of the recommendations for those two buildings -- I don't know if we mentioned the movement I mentioned before, but we're moving more enriched uranium into HEUMF. I think there's progress there.

Some new process equipment, some investments have been made, particularly in some ovens that were modded to reduce some identified vulnerabilities. I think it was mentioned earlier some environmental room controls that were improved within Beta-2E.

So again, I think the process is sound as far as what we're looking at, how we're looking at

it.

We talked earlier a little bit about monitoring indications. We have some indicators now that the contractor uses that we have a transparency to looking at in my federal staff.

I will say that what you want to do is to always ensure you're challenging the indicators themselves, and that is done best by looking at the process equipment and the facilities, putting your eyes on it. I have facility representatives resident in the facilities. They're federal employees, and so they work closely with the process folks in the facilities on a daily basis. We talk about what is the condition of the facilities they're in.

And it shouldn't surprise you that facility condition does come up quite a bit in 9212, less so in the two buildings that we're talking about, but it's still monitored. So although you have indicators and metrics, and those are nice, you still have to get down there and look at it and verify it.

We also mentioned I think that you want to repeat your Facility Risk Reviews periodically. Five years seems like a reasonable time. And the primary reason for that is you want to challenge your assumptions that you went into the review under and

take a fresh look. And like I said, five-year increments is probably a minimum for that.

VICE CHAIRMAN ROBERSON: Let the me ask you, Ms. Robbins, so five years -- 2007 was the original review and then re-baseline for these two facilities in '12. Was timeline the only criteria that changed, or did you learn anything from '07 to '12 that affected other elements of your analysis?

MS. ROBBINS: Well, one of the -- we had committed to do the five-year review and so we were doing that. One of the key things that came out for us I believe is the need for significant investment in the electrical infrastructure for these facilities. We've identified the need for a project to do that for Buildings 9215 and Beta-2E.

As you're aware, and I think Mr. Tindal spoke to it earlier, when you have aged electrical equipment, you have the increased risk for fire. And fire is one of our biggest risks in our facilities at Y-12. And so we see that as a significant investment that we need to ensure gets funded.

As Mr. Erhart and Mr. Held have said, you know, we're looking to the future, and we'll continue to be advocates, presenting the need for that investment, and hopefully we will be blessed with the

funding we need to do that.

VICE CHAIRMAN ROBERSON: So are you getting the funding you need, Mr. Erhart?

MR. ERHART: Well, like I said, so far, yes. I'm sure now that headquarters understands the need and understands the priority. And so I'm sure that we're heard, but like I said, I think we need to be concerned about what the future budget holds. And the best we can do is be very credible in our requests, defensible, and I guess a little pushy. And that's how we'll go forward.

VICE CHAIRMAN ROBERSON: Thank you.

CHAIRMAN WINOKUR: So I would just add to that, you've said "so far, so good" a few times. It sounds a little bit ominous to me, but I think we all understand this very difficult budget environment in which everyone is living in.

But I mean these are realities. These are things in buildings that simply are very old and need to be replaced. They're degrading. And there's a fair amount of scientific backing to suggest when electrical equipment and systems and things like that need to be replaced. So obviously we share that concern.

Let me ask you a question, Mr. Held. We've

talked about the deferral of activities in 9215 and Beta-2E and the time frame that we're beginning to hear -- actually it was noted by the CSOOT and the NNSA Stockpile Stewardship and Management Plan that the deferral of these buildings or transitioning to a new Uranium Processing Facility would be in 2038. That's 25 years from now.

You know, I can't really predict things myself within a year or two, but is there any basis to that assumption? I mean to this number 2038 that's being bandied about a lot. But does it have any particular meaning for you?

MR. HELD: As I said, originally I'm a case officer, and I look at facts. I make simple calculations and I will -- if I'm alive in 2038, I will be 86. And most of the people who would be working at Y-12 today will be retired, and most of the people who are working at Y-12 then may not be born yet. So the 2038 is a projection that is built on a design assumption plus prudent assumptions -- or assumptions of what our funding is going to be.

If our funding is more robust than that current assumption is, we can move that timeline up; if our funding is less robust than we expect, that timeline is going to be pushed back. And the same

way, if technology advances, or design of the facility changes, that can push that projection forward or backward.

My fundamental responsibility or fundamental preference, because these are very old buildings, is to push that timeline forward, not back. I think we are reaching the limit of our ability to push the timeline back.

And so what that implies for myself as Acting Administrator, and then Frank Klotz when he comes in as permanent Administrator, is a much more aggressive or a very aggressive posture on budget in a very tight budget time.

And you know Washington well, and especially in this time, there will be robust pushing and shoving on budgetary issues that will be messy as viewed from the outside, but I have a profound faith in fact that that pushing and shoving is actually what breeds excellence in our American democracy.

And my specific responsibility, and Frank's future responsibility, is to robustly partake in that pushing and shoving and be adamant in the position that when push comes to shove, nuclear safety will take priority.

CHAIRMAN WINOKUR: All right. Mr. Keith,

you're the head of the CSOOT. How do you respond to this change in schedule? It must not be a good morning for you, right?

MR. KEITH: It's a much greater scope of concern.

The initial response that we had, Dr. Winokur, was to -- and actually it was in one of the FRR recommendations for Beta-2E and 9215 -- was to expand the CSOOT charter to cover 9215 and Beta-2E. And with that we put in the same regiment of performance indicators and the same types of things.

Those facilities had the advantage of being the first facilities or some of the first facilities to have their old, you know, stored inventories moved to the highly enriched uranium materials facility. So their hazardous material inventories had been significantly reduced from where they were in probably the first time we did the FRRs.

As we saw, the SSMP, or the Stockpile Stewardship Management Plan, that was the first time we saw the extension of the date from the 2030 time frame that was mentioned earlier to this late 2030s.

And so that is the point in which the CSOOT made a recommendation in our latest annual report

that we need to go back and at least reconfirm the evaluation that was done for the prioritization of the projects. And so that was one of our recommendations.

We think that along with these other activities we put in place, starting with 9212 and extended to the site, with our aging management program and other operations, plans, activities are the right things to do to manage these facilities during this time period.

CHAIRMAN WINOKUR: Are you thinking about an inherently different strategy here or more of the same?

MR. KEITH: Well, as has been alluded to earlier, there's a transition strategy that's been worked on for 9212. That transition strategy clearly involves more than just 9212 to bridge us to UPF. And so I think --

CHAIRMAN WINOKUR: All right.

MR. KEITH: -- that's going to challenge us to be able to maintain those operations in 9215 and Beta-2E as well and probably going to involve the incorporation of new technologies to help us further in the management areas to reduce that risk as much as possible in the material inventories.

CHAIRMAN WINOKUR: So you're talking about moving -- you've said it but just to make sure I understand -- some of the functionality of Building 9212 into other buildings?

MR. KEITH: That is a proposal that we're working on currently.

CHAIRMAN WINOKUR: And this is the DER and the ER, some of these things -- these technology initiatives we've heard about?

MR. KEITH: New technologies for metal production, correct.

CHAIRMAN WINOKUR: Okay. And, Mr. Erhart, how do you view the safety risks associated with this very deferred scope right now?

MR. ERHART: I think that we have embarked fairly recently and more aggressively on looking at -- really the first driver was some schedule evolution in the UPF project, as well as looking at these technologies that were being developed we mentioned before, as part of the Uranium Processing Facility work. That is potentially promising.

Looking for ways -- again really more planning for the complete and -- planning for the complete and safe shut down of 9212, whenever that is, taking it more aggressively as a plan, becoming

our plan versus, you know, living with, you know, a failure.

As we pointed out before, the failure would most likely manifest itself with an inability to do the mission. So the gap that came up as a result of some of the scheduled evolution in UPF started us thinking along those lines.

And really what struck us immediately was, you know, challenging ourselves again to lower the risk of operating today more aggressively than we probably have been doing, and so try to reemphasize that, and look at some ways to mitigate some of these schedule changes that we're seeing.

So we're going to be taking a more aggressive approach to that locally. Again, the idea would be to maintain the capability that we have, which is vital to the national security, and propose some ways that we can work with existing facilities, lower the risk of operations, take a look at new technologies, see if they're promising and see if there's some ways we can accelerate some of that.

I will say that a lot of this thinking is fairly recent, so that a lot of these discussions are literally going on as we're talking here, although we are working a lot here locally to look at the risk of

operation to see what we can do about minimizing it.

CHAIRMAN WINOKUR: Okay. Thank you.

Mr. Sullivan.

MR. SULLIVAN: Thank you, Mr. Chairman.

I'd characterize a lot of what I've heard so far this morning as, well, these buildings are old. We've done a lot in the last few years to make them safer, and we've done the things that will provide the most bang for the buck. We've done everything that was humanly possible, and we need the new facilities.

So I guess my 64,000-dollar question for the entire panel really is, well, how long can we operate in these buildings?

Mr. Spencer, let me start with you. I go back to my submarine experience when I was in the Navy. A lot of analysis was always done, how many cycles of sea pressure on the hull, how much neutron embrittlement does the reactor was operated. Somebody could always point to something that was more or less a date certain in the future and say, That's it. The submarine will turn into a pumpkin. We need to have a replacement submarine that's being designed and built to take over.

And then on the other hand, I know the way

I operate my own 2000 pickup truck. I still work on the brakes and change the oil, but I know someday that that's not going to keep operating, but, you know, that day will just bring a family crisis for me and I'll figure out what to do when it happens.

Which of the two categories are we in here with these older buildings?

MR. SPENCER: It would be the latter obviously. And I think I can speak for Steve and myself, and even Mr. Held, that we would never operate a facility we believe to be unsafe.

That's why you've heard all these things that we monitor. We put in for additional funding to make sure they are -- make sure your 2000 pickup truck, right -- we're looking at the structure, we're looking at the frame, we're looking at the brakes continuously, continuously and so watching for problems.

There's another problem, too. That's the site infrastructure, which we've talked about as well. We're watching that also, the potable water, the telephone poles and the like, right. So it's not just the facilities themselves, because they could be influenced by something else. So we're looking at the entire thing.

And the facilities are structurally sound, right. You live with the risk of a major event causing a problem because you're not seismically qualified or, you know, you can't withstand the same kind of events you'd build this facility for today. That is true.

So you watch the facilities. You watch the feeders to the facility, the water, the electrical systems, and all that, right. So our plan is to very carefully monitor that, because if there's a problem, we'll shut it down.

You've also heard from Mr. Held that we would shut the facility down for any kind of safety concern. We would halt production as --

MR. SULLIVAN: Okay.

MR. SPENCER: -- we go toward UPF.

MR. SULLIVAN: Thank you.

Mr. Keith, I read in this CSOOT report something about a asymptotic approach to a -- in the bathtub curve. Can you explain what a bathtub curve is for those of us who can't remember high school geometry. What does the word asymptotic mean?

MR. KEITH: I'll be glad to take a shot at that, Mr. Sullivan.

From the bathtub curve what we really are

referring to there is as most of us know when we buy a new product and live with a product, the likely chances of failure are higher -- or earlier in life or very late in life as parts begin to wear out, just like your automobile. Your brakes are going to wear out. You're going to replace those and you're going to move on.

So that's what the bathtub curve refers to; it's a failure probability over time.

MR. SULLIVAN: All right. So I assume the curve then is shaped like a bathtub. When you get towards the end of the life cycle, you've got a lot of problems in the beginning and then things operate -- after you've figured the initial problems out things operate smoothly, and then towards the end you see a lot of failures again?

MR. KEITH: Correct.

MR. SULLIVAN: So in terms of these three buildings -- we'll take them one at a time -- I mean can we plot ourselves on that curve? Do we know where we are?

MR. KEITH: Well, I think it's really a family of curves. When you look at the bathtub curve, you think about these facilities, and more or less as Chuck indicated, it's all in the systems

together. They all have their own individual components, and they all have individual failure rates within those components.

I'll point you back to what we had in the -- you know, we made a recommendation or made an observation in our latest annual CSOOT report where we thought we were at -- you know, we are approaching that in some situations where -- you've heard it already mentioned -- our Holden gas furnace having an issue, the Stack 110 having an issue. And so, you know, in certain situations we are probably beyond the flat and in the curve where it's arcing up in the higher chance of failure.

And again, what we're trying to do there to compensate for that -- we are not going to operate if we think there is a safety issue -- we have a very extensive regiment of surveillances that we've put in place to monitor both our safety systems, in particular a very rigorous set of requirements there, as well as our other important safety equipment. So we monitor that very frequently and look for that aging effect or any aging effect.

We've also put in other things such as electrical cable inspections to make sure we're monitoring at every opportunity to see whether we're

seeing aging in the electrical infrastructure, which is not necessarily safety related at Y-12.

MR. SULLIVAN: Okay. But while my pickup truck is old, I see people driving around occasionally in Model Ts, so I mean I know this can be done. Is this something we could do potentially for still a couple more decades, continue to make the sort of improvements that might be needed to continue to operate these buildings?

MR. KEITH: For a lot of the equipment within that facility I believe that to be the case. I mean it will take some refurbishments -- or some rather extensive refurbishments, kind of like I mentioned on the Holden gas furnace.

I think we've got to be wary of where we get into situations where corrosion or other situations might undermine our structural integrity, and again, we're doing inspections on our structures as well. That would be a thing I think would have to call into question the continued operation.

MR. SULLIVAN: Okay. So, Mr. Erhart, let me come back to you.

There was -- and I go back and I look again at some of our history over the last decade, and I think it was in the 2005-2007 timeframe we were

predicting that we would transition out of 9212 somewhere around 2019, 2021. We had a briefing recently that said, Well, maybe 2025, '26.

There was a press report just this past Friday that looked at the UPF in terms of cost, and said under the most optimistic budget scenario it would be 2030 before that was ready. Now, I don't know if that's true or not, and I'm not really asking you to comment on it -- on that press report. But what I am asking you is it would appear that in 2007 we were looking at a 15-year window, and now it's 2013. Maybe we're looking at a 17-year window. It almost seems like we're going backwards here.

So can you comment on the impact on safety here for the public and the workers and -- you know, do you have some crystal ball that tells us what's going to happen here? Because what I'm really interested in is do we need more investment in these buildings? Do we need to ramp up what's been done so far?

MR. ERHART: I have no crystal ball. But as noted by the bathtub curve, right -- so it is interesting that as the end of life failures become more frequent, possibly more severe, right. But what we don't know, because we just can't know, is, you

know, when will, you know, ultimate failure occur.

Again, I want to be careful to make sure that you understand, to reiterate for the 27th time, that the failure that is not acceptable is a safety failure. So the most probable mode of failure would be inability to conduct the mission.

As we also mentioned, this mission is vital and important to national security. So, though, I don't have a crystal ball, it does concern me about the time frames that we're talking about. I, like Mr. Held, cannot -- you know, it's kind of like a -- 2038 is kind of a number I can't really compute very well.

So what I would suggest is we kind of work the problem from both ends. You heard what we're doing locally and will continue to do, and I think that we'll build on that to reduce risk of ongoing operations.

We need to then look at the other end, and as we're planning, you know, again start to work a real plan and a date to transition out of 9212. So the one that worries me the most and the one that has our most attention is 9212.

Again, if I could predict, you know, which system and what type of mode of failure that we can

most anticipate, that would be an easier problem than we currently have.

MR. SULLIVAN: All right. But I think in response to the first question or the second round of questions here Ms. Robbins talked about how when the priorities were decided after the first Facility Risk Review, one of the things that went into the priorities was you had to have time to get some payback, right.

If you're going to only be in the building 15 years, and it takes you 10 years to budget and then actually do the repairs, and then only a few years later you're going to be out of the building, then, you know, a reasonable person would say, well, why bother. Okay. But if we could go back in history and know that, well, maybe the time of the building wasn't 15 years but 25, perhaps we would have made a different decision.

So if the timelines are continuing to slip, do we go back and revaluate some of those things that were on the table back then but not done?

MR. ERHART: Just to comment on the first part of the question, I don't know if you could do much better, you know, in looking at -- that's a planning horizon, 15, 25 years. When you get to 25

years, that becomes an imaginary number and harder to quantify.

I think the key is to reassess -- you know, once you either know that there is a real possibility you will be in the facility longer to reassess your risk acceptance through this risk reduction effort.

I think, you know, periodically the five-year thing seems to make sense to me. But, you know, like I mentioned before, we are responding to the schedule issues that you're bringing up. And again, it is a risk reduction effort and again trying to manage the gap that we see with the delivery of UPF, and then as we talked about, the subsequent phases of UPF for Beta-2E and 9212.

MR. SULLIVAN: All right. Well, thank you.

Mr. Held, finally, I'd like to go back to you.

In that same press report that I read on Friday the infamous unnamed official said that basically the timelines continue to slip with respect to the UPF and we need to rethink the strategy for getting out of 9212.

Are we doing that?

MR. HELD: In that same press report I think Senator Alexander got it pretty right. We must

modernize the uranium processing facilities that are here at Y-12. They are crucial to U.S. national security, and so we must modernize these things.

We must also be wise stewards of the taxpayer dollar and make sure that those two things are connected.

Again, project planning will be a function of the design and the budget. What we are currently working on is the design, and we would meet with Senator Feinstein and Senator Alexander on a regular basis that had been monthly and now it's quarterly -- the next meeting will be coming up fairly soon -- to keep them up to date on where we are on these issues.

We really want to nail down the design and the plan to a 90% level before we start making really detailed budgetary projections that we have confidence in, because we've made that mistake in the past. We've come up with budgetary projections before we really had a design that we were confident in.

The alternative approach is you can make estimates in what you think the likely budget is and have the implication of what the time frame is, and that's what the press report was referring to.

Those two pressures will come together.

You know, one side is where the key people are taking one approach, and that's a perfectly legitimate approach to take. We have committed with Senator Feinstein and Senator Alexander to work through one -- the opposite side. Those two will come together, and those two will be coming together over the next few months.

Again, the nature in Washington with the pushing and shoving -- and it's always important in that to understand that we're driving towards excellence and that's just part of the need to depersonalize it and deinstitutionalize it.

Right at the moment we continue along the same -- DOE is continuing along the same kind of concept phase. If that in fact when we get to the 90% level looks like it's going to be too rich for what any reasonable budgetary projection is, then we will have to re-scope -- or not re-scope but we have to rethink.

In that rethinking there has to be a very firm position on the part of NNSA that we really can't slip this thing to the right eternally. All right. That will have cost and budgetary implications. And so that will be worked out and tussled about during the next several months.

MR. SULLIVAN: So do we have a target date for getting out of 9212 right now?

MR. HELD: 9212. The target date for getting full programmatic activity -- we won't have full programmatic activity in 9212 by 2025 -- that's correct, right?

The 2025 -- if I had my druthers, I would try to push that forward, not back. And I don't think we can push that back too much further. And so it's important for me now and the future Administrator to start raising the -- we have really two important leadership responsibilities. The technical stuff is beyond my competency, and so I have to depend on very qualified technical people in the field.

We have very important leadership responsibilities in making sure the safety culture is right so that -- and we have to articulate that and demonstrate that so that Steve and his people and Chuck and his people can continually challenge the safety basis. And not only that they can do it, but they are encouraged to do it, and they feel safe in doing it.

So we have to articulate that to encourage them, and then we have to demonstrate in real

examples. And that goes back to the recent Government shutdown where we said, we're going to shut down the complex. That sends a signal of the seriousness.

The other responsibility that we have is representing the complex in raising -- when we feel we need to start raising the sense of urgency, that we're prepared to do that. And I think we are.

Secretary of Energy Moniz is a very, very knowledgeable guy and very comfortable with the political atmosphere in Washington in fulfilling his responsibilities and that's what we're in the process of doing. We're going to have to start raising the sense of urgency on these things.

MR. SULLIVAN: All right. Thank you very much.

CHAIRMAN WINOKUR: Before we turn to Ms. Roberson, Dr. Mossman has a question.

DR. MOSSMAN: A question of follow-up on the bathtub concept, so for Mr. Keith and Mr. Erhart.

The sense I have is that the real challenge is identifying that point in time when failure rates begin to climb, and you need to do something about it. So ultimately what we're asking is there ways in which we can extend the length of the plateau so that

we extend reliability.

I harken back to an area that I'm very familiar within human biology and medicine. The human body is awfully reliable, and it's reliable over about 75 years, give or take. And the reason why it's reliable is because it has a sophisticated complex of systems that are redundant and also contain degenerate components. In other words, there are components that do more than one thing. There are pathways or networks that duplicate other networks and pathways.

Are you using that same kind of conceptual framework in order to build a more reliable system over a period of time, introducing into the system degeneracy, introducing into the system redundancy?

MR. ERHART: That was a great question.

Do you want to start?

MR. KEITH: I'll let you go ahead, Steve.

MR. ERHART: I think that's a great analogy, and it is fairly appropriate. And I think what we want to look for is alternative -- so you indicate the human body will, you know, facilitate generations of single -- people can live on a single kidney, for example, right. That's fairly appropriate for what we're looking at.

The Y-12 plant was, you know, sized for a different era, so we actually have in some cases more capability than we need for the footprint that we have. In some cases that introduces more complexity than we really like.

But we do look for those alternate pathways for assuring safety. And I guess an example would be -- and then we talked a little bit about the more recent framework that we're attacking the problems, looking for -- you know, challenging the assumptions of the past, and do we have to do things the same way that we were doing them.

Let's challenge the assumptions of, for instance, how much -- do we need to recover every uranium atom like has traditionally been the case, or can we look at some alternatives for different -- or looking at the limits for which we do actually have to process the waste and see if that tradeoff might increase the margin of safety as a result.

So I think we are incorporating some of that thinking, but I do agree with you, the key is knowing when you're in the knee of the curve, because there's not a lot of time between the bottom of the bathtub and the top of the bathtub. But I think you're right in that what we're trying to do is

extend that flat part of the curve.

And we did indicate in our testimony today we are seeing some failure rates, but, you know, we're looking at a very short duration time. We're not sure if that's an indicator of where we are in the knee or not, but we're going to act like it is and that we're close and look for ways to flatten that out. So I thought that was a really good question.

MR. KEITH: I think the only thing I would add to what Mr. Erhart has said, Dr. Mossman, is that in the uranium transition strategy that I mentioned earlier, part of that, too, is to refurbish some of the equipment you can extend that lifetime, because there's some components that are more sensitive than others. For example, in our casting furnaces we may be able to extend the life of those things from programmatics -- to serve the programmatic need.

And again, we're looking -- in addition to the areas that Steve mentioned would be the new technologies that we could put in place and sort of lighten the load on some of the current equipment or completely shut down some of the current equipment. So that is part of what this strategy is trying to focus on.

MR. HELD: Could I pick up on that?

And I concur with both of those comments. Coming back to Mr. Sullivan's comments on the car, when your oldest car breaks down, you'll have a little bit of a family crisis, but, you know, we really don't want to get close to that. And I don't think I really want to get into the knee of the curve.

And so we have to create an environment and make sure that with the resources that Steve and everybody out here can stretch out that flat part out further, so we don't get into the knee of the curve.

At the same time it's really a profound leadership responsibility to start articulating that, you know what, we don't want to go there. And the implications of having a crisis in the Uranium Processing Facility has such profound implications for the National Security Mission that we cannot go there, and so we really need to start raising -- you know, as we are providing funding, to stretch out that bottom part of the U, we need to do a much better job and a more adamant job on saying it's time to stop pushing this out.

CHAIRMAN WINOKUR: Okay. Ms. Roberson.

VICE CHAIRMAN ROBERSON: So, Mr. Spencer,

recognizing there have been changes to the transition to new capabilities, can you just summarize for us all what are the key elements of the latest strategy for transitioning of enriched uranium operations from the current three facilities we've been talking about, and what are the most significant challenges you see in doing that -- in addressing those key elements?

MR. SPENCER: 9212. The biggest thing there would be to continue to aggressively reduce the Material-at-Risk, the MAR, right, and especially the material that's in a different form, primarily liquid, right, and to accelerate that effort and move it to HEUMF and to get it into a safe condition.

And some of the things we've talked about here would include moving key missions out of 9212 into another better facility with a better process like wet chemistry to DER [Direct Electrolytic Reduction] and ER. ER [Electrorefining] is currently working our Development Department right now, and it's working. DER is different, but ER is much more important to refinery, right -- electrorefining.

The last piece would be recovery, and how could we do that. Steve touched on that piece. If there's a way to take a look at the criteria for

disposal of EU [Enriched Uranium], right, we could change the recovery process significantly, right, in a much simpler, cleaner process in a time when -- perhaps programmatically we could make that change. It would be up to the department obviously to do that.

But those are three key elements. So you could get 9212 down to essentially just a casting facility with really very little Material-at-Risk, right, and that's all you would be doing at 9212. Then the other facilities would come later as we move into UPF. Okay.

Does that answer your question?

VICE CHAIRMAN ROBERSON: I think you did -- you definitely gave me some of the specific elements of the current most recent transition strategy, so moving MAR to HEUMF, which is a relatively new facility.

But I'd ask you, Mr. Erhart, what would be the safety risks of some of the actions that Mr. Spencer just spoke of, like moving DER and ER to 9215, which itself doesn't meet modern-day nuclear safety standards?

MR. ERHART: Okay. So Direct Electrolytic Reduction and Electrorefining are the two, and, you

know, basically just picture big batteries and using, you know, the electrolysis sort of reaction to go directly from oxide material to metal form. So you're taking out in that process -- and again, the DER technology is not as advanced as electrorefining, so there's still a lot of things that need to be worked out, but very promising because you would remove a lot of the hazards that we worry about in 9212.

For instance, HF [Hydrogen Fluoride] gas would not be required. We would pretty much eliminate volatile or combustible organics from the process completely. As I mentioned earlier, taking out the liquid phase for uranyl nitrate and things. There's more factors that have to be controlled to prevent criticality in the process than I'm describing.

So that process, if proven out, can be reliable, you know, go from an R & D project to an actual production-ready technology, very promising. So what we would be moving into 9212 -- or 9215 would be something much safer, much smaller, much more -- you know, the floor space that it would take up would be less. The complication of the process would be much less.

So I see that as -- the mechanics -- it remains to be seen if we can get it to the point where it is production ready. But overall the site risk for what I just described goes down pretty dramatically even though you move into 9215.

VICE CHAIRMAN ROBERSON: So we've talked about changes to the timeline, and certainly there could be changes in the future or it could be a delayed startup. Clearly timeline is a heavily weighted criteria in your analysis.

So how do your current transition strategies account for the possibility that there could be delays in the future?

MR. ERHART: Well, that's the idea, to account for -- and come up with options to account for delays in the future, and so that's built into the strategy.

And there are things that we can do sooner in existing facilities that make sense to do that still support the mission, and a lot of dialogue needs to be had yet on those topics.

For instance, there's customers -- there's ways of processing that need to be talked through. There's program requirements. I will say that initial discussions with the folks -- some of the

folks that own the requirements are very open to these discussions. So I think the --

But the whole idea is to be more flexible and improve our safety posture, more real time than we had been doing I think, and to account for those -- these are hard, big decisions that need to be made. So some of that's out of our control. This is a strategy to control what we can control, but it will require a lot more discussion and dialogue and buy-in from various parties; so interesting question.

VICE CHAIRMAN ROBERSON: Thank you.

CHAIRMAN WINOKUR: Well, I have a couple of questions, and then I think we're going to end this panel.

We've been talking a lot about safety. The Board is a safety board obviously, but let me look at you, Mr. Spencer, and ask about operational reliability.

I mean there are other considerations here. If you continue to have problems with these systems -- and a lot of them are safety related -- can there come a time where operationally you just can't create metal -- you can't produce metal under present circumstances in 9212, and if you want to programmatically continue, you have no other options

but to make the kinds of changes we're talking about here?

MR. SPENCER: If I understand your question, is there a potential that you'd become so degraded that you couldn't operate anymore? The answer is absolutely yes. I mean it could. That's why we pay so close attention to the facilities, to the support systems, to the production equipment, and all that.

And as Mr. Held pointed out in his opening statement, if that time comes, we will sacrifice production for the safety of the workers and the public and all that. So absolutely. That's why we pay such close attention.

CHAIRMAN WINOKUR: Well, I guess the point I'm trying to make is it's not always a tradeoff between safety and production. You may simply have operational -- you may not be able to effectively perform your mission if these facilities continue to degrade. I mean that has to be a concern to you, right?

MR. SPENCER: It is. It is. And some examples, our equipment is old and getting spare parts becomes more and more and more difficult because it's harder to upgrade up to the new types of

equipment that are out there, and we're constantly searching for spare parts for things. And so that's a point, too; not necessarily safety driven but just an obsolescence driven, yes.

CHAIRMAN WINOKUR: All right. And then what's the processing criteria, and can you envision when you actually say to yourself, We can no longer operate this facility -- and I am focusing now more on safety -- when you say, Look, we can't go forward anymore. Do you have a sense of what that might look like?

MR. SPENCER: That's a tough one. That's a very tough one. But as we talked about, if I felt the structure, for example, was unsafe, we'd probably have to back away from it.

If it's a facility support system, right, we'd look at it and say can we operate, and if not, we'd shut down and replace the support, whether it be water or electricity or whatever, right.

So it varies. It's not like it's just one big thing that's going to fail together. There's all these systems that support it, these individual missions, right. If one individual mission became unsafe, whether it was chemistry, whatever, we'd shut it down.

I'm not sure that I answered your question.

CHAIRMAN WINOKUR: Would a significant fire, for example, be a potential show stopper for you?

MR. SPENCER: Oh, certainly. It could destroy a lot of things. You know, if you had a major fire and it burned all the wiring, yeah, it could, absolutely.

CHAIRMAN WINOKUR: I mean I'm just trying to -- because these are serious issues here.

MR. SPENCER: Oh, it certainly could and that's why we pay such close attention, and we have our sprinkler system and replace our heads and all those sort of things. But a major fire would be a huge problem at these facilities.

CHAIRMAN WINOKUR: So, Mr. Erhart, same question to you. What are the processing criteria that you might use at this site here in terms of when you might have to make a recommendation to Mr. Held, or whoever the Administrator is at that time, that you can't continue to operate these facilities?

MR. ERHART: Well, that's a good question; hard to answer. All I've done my entire career is operate nuclear things so I have a lot of experience.

It's one of those -- there's a lot of data

involved in this work, you know, read a lot, hear a lot, talk fondly and waryingly about indicators, metrics and the like. I think, you know, these are the sort of decisions that you'll know it when you see it. But, you know, I concur with Mr. Spencer that there's -- you know, when it gets too unsafe structurally -- I don't know when that will occur -- that's definitely a tipping point.

But trying to predict the other failure modes -- we talked a little bit about some of the ones that might sneak up on you are the infrastructure, the site-wide type things, like potable water, how big a potable water leak and where it occurs, those are the things -- and how can you get to it.

And so far the degradation of the potable water systems has been managed fairly aggressively. We continue to maintain full fire suppression capability, but it's not beyond the possibility that you get a significant failure, and it won't be so soon that you recover. But the safety daily -- it's a daily check.

And as I mentioned earlier, we talk with my facility reps everyday about things that are, you know, behind in maintenance or if there's issues that

are coming out of their discussions and observations on the floor, we talk about it.

If we can link some of those things together and find, well, maybe we're talking about a site-wide electrical issue, and this is not, you know, just one area within the site. We try to link those two together and try to ensure we always have a good picture of where we are from a safety perspective on a daily basis. And that's what we do.

CHAIRMAN WINOKUR: Okay. And, Mr. Held, you've already answered the last question I had because I wanted to, you know, emphasize that you have a phenomenal responsibility not only to operate these facilities safely but programmatic responsibilities to the war fighter. I mean this site is incredibly important in terms of what it provides to the nation.

And you've made it pretty clear in your testimony that you're certainly not going to operate this site if you can't do it safely.

MR. HELD: It is a profound responsibility, and so again we need to make sure the cultural and communication atmosphere is correct. That requires a lot of communication from us and demonstration. One small thing is that we've once again elevated the

Site Office Manager in the line function so that he reports directly to the Administrator, so you can cut through any communication barriers that might be there.

And we need to encourage these technical challenges that are going on. My sense, though, is that it will not be a technical decision. It will be a leadership decision where the Secretary and the Administrator come down and say, I am just not comfortable anymore. I think given the low risk and extremely high consequence of this thing it is imprudent to continue these things.

And that's going to be a political and gut instinct thing that is well-informed by the technical, but I think it will be kind of a huge leadership responsibility.

CHAIRMAN WINOKUR: Thank you.

And I want to thank this panel, Mr. Held, Mr. Erhart, Ms. Robbins, Mr. Spencer, Mr. Keith and Mr. Tindal.

I think we need to move on and invite our second panel of the day, witnesses from the D.O.E. and its contractor organization for the topic of the Uranium Processing facility. And I'll introduce you as you take your seats.

Mr. Robert Raines is the NNSA Associate Administrator for Acquisition and Project Management. Mr. Steven Erhart, who is fortunate to come back with us, is the NNSA Production Office Manager.

Mr. John Eschenberg is the UPF Federal Project Director.

Mr. Carl Strock is the B&W Y-12 UPF Project Director.

Mr. Kevin Kimball is the B&W Y-12 Safety Analysis Engineering Manager.

Mr. John Gertsen is the B&W Y-12 Vice President for UPF Integration.

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

Not seeing such a request, the Board will 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, their answer to that question will be entered into the record of this hearing at a later time.

And with that I'm going to begin the

questioning.

I have a question for you, Mr. Eschenberg. Good morning.

MR. ESCHENBERG: Good morning.

CHAIRMAN WINOKUR: We've talked quite a bit before -- the Board has communicated with you quite a bit on the need for effective safety oversight and our concerns have been echoed recently by an NNSA independent project review that reaches a similar conclusion that the federal subject matter expertise on the project is still a little bit less than what it needs to be.

I should really start out by asking you do you believe the staffing that is now there is sufficient to provide the oversight that you need for the UPF project?

MR. ESCHENBERG: Well, good morning, Mr. Chairman, and the balance of the Board. Thank you for the question.

The short answer is yes. And let me just kind of take you through the evolution over the last year and some of the progress that we made as a project office.

You'll recall that when we had our last public hearing October 2nd of last year, we were

staffed with seven federal employees led by myself relying heavily on matrix support, expertise from the local site office.

Today we've evolved and we've stood up a dedicated stand-alone project office that consists today of 12 federal employees. We rely on eight additional employees from the U.S. Army Corps of Engineers. And we have over 31 -- 31 -- support services folks who technically bolster our capabilities.

So I think that today we've built -- we've established literally a world class project team that has some of the most contemporary project experience and nuclear experience we've required.

I would point out that we just hired our own Nuclear Safety Manager, and effective January 12th we will have a new Chief Engineer in place.

So the short answer is yes, indeed, sir, we do have the adequate technical support that I believe we need to be successful.

And let me just make a comment about the peer review that was done the summer of this year. It did point out two weaknesses: One, that we did not comply with our project staffing plan; and, secondly, that we did not have fire protection

support and one other critical position.

We filled both of those positions. They are on my staff. We do have a Fire Protection Engineer with the appropriate credentials and professional certification. We also have a Criticality Safety Manager.

We've updated our staffing plan, and today we are in full compliance with the plan.

CHAIRMAN WINOKUR: So you're fully staffed right now at this point?

MR. ESCHENBERG: We are fully staffed. I will point out that we have six additional federal vacancies to fill. We're in the process of filling these vacancies now.

CHAIRMAN WINOKUR: And the function of those vacancies, what would those positions be for?

MR. ESCHENBERG: Of the six remaining, four are technical and two are administrative or project management related positions.

CHAIRMAN WINOKUR: And technical areas, can you be more specific about --

MR. ESCHENBERG: They're structural engineers, another fire protection engineer. I want to bring in a junior engineer, multi-discipline expertise, because we want to begin planning for

tomorrow, succession planning. And then the other two are -- one is an accountant and project controls expert.

CHAIRMAN WINOKUR: Okay. Let me turn to you, Mr. Raines.

Do you think the folks at NNSA are fully committed to providing the staffing that this project needs?

MR. RAINES: Yes, sir. Going back to the review that you referenced, that was a review team that I was part of and led. And so, you know, I think this goes part to -- you know, we're making sure that we are holding ourselves accountable to the plans that we said we're going to do.

NNSA has in fact supported this. I'll give you three examples. First, they were very supportive of us signing a Memorandum of Understanding with the Army Corps of Engineers.

That's more than just bringing the eight personnel on Board. What that really brought to us was eight federal employees to focus on something that was more in their area of expertise, leaving our nuclear people to not have to manage non-nuclear work so we didn't spread them too thin because of work we had going on. So that's really a force multiplier.

Second, as John had mentioned, we got full support from the Administrator in these tough budget times to approve the additional staffing. We brought some on board, and we have the rest that we were advertising, and we hope to fill them as quickly as possible once we get some more budget certainty.

And then thirdly, and most importantly, was when we did the CD-1 reaffirmation, we made sure that we took financing from the project side and set that aside. And that's what has allowed us to hire all of these support service contractors, because we knew that we would have to fill gaps.

And this allows us to bring people with particular expertise for the time that we need them, and when we don't need that expertise, we can let them go and bring in the additional expertise that we need later on.

So those three areas I think really helped us providing the staffing that we need.

CHAIRMAN WINOKUR: So you're fully committed to provide the federal staffing you need for this project?

MR. RAINES: Yes, sir.

CHAIRMAN WINOKUR: I only say that because NNSA is under great challenges throughout the entire

department, and we hear about site offices being reduced. I mean federal workers are at a premium in terms of being able to supply them to the sites and to the projects. Would you say that's fair to say?

MR. RAINES: Yes, sir. That is fair and that is why I wanted to emphasize that we did get support during these very difficult budget times for the full project staffing that John and my team agreed was necessary for the successful completion of the UPF.

And so it will just take a little while for the, you know, budget cycle to work its way out. As you know, we have the continuing resolution. But I think as soon as we get that settled, we will be able to hire the people that we have approved.

CHAIRMAN WINOKUR: And, Mr. Eschenberg, when you get these folks, are they able to contribute immediately? Are they experienced people, or do they need a little bit of mentoring? I mean what kind of folks have you been able to attract?

MR. ESCHENBERG: Thus far -- and let me just give you some sense of how many people we've picked up. Last year at this time we had a staff of 22. Today we have a staff of over 50.

Our target employee is beyond the mid year.

He or she is well beyond the journeyman level. They are true experts in their field and disciplines. We do routinely rely on folks like Fred Loceff, for example, who are recognized in the industry.

We have a wide range of experience. We do have a couple of junior engineers, but principally most of our staff are very, very senior members.

CHAIRMAN WINOKUR: Okay. Thank you.

Mr. Sullivan.

MR. SULLIVAN: Thank you, Mr. Chairman.

Good morning to our panelists. Nice to see everybody again, except for you, Mr. Erhart. I'm tired of you already.

Mr. Raines, we had a public hearing here last October, and you were relatively new to the position at the time, as I was relatively new to mine. So about 14 months later can you update us on just what is it that the Office of Acquisition and Project Management has brought to this entire project.

MR. RAINES: Yes, sir. I think a couple of things. When I spoke last time I talked about us being an organization trying to bring project management rigor to this project as well as ensuring that that rigor was able to ensure that we met our

safety commitments.

A lot of people, you know, I think misconstrue that that project management rigor was we were trying to cut costs when in fact what we were trying to do is operate efficiently to be able to invest appropriately in the things that are most important to us, which is safety, as the Administrator said and I think everyone on the previous panel.

Let me give you a little bit of an overview of what organizationally we've done on smaller projects and what we're bringing now then to the UPF.

So over the last two years we have completed a series of projects at about six percent below budget. And why is that important? That's important because when we're working on NFRR, for example, and other works across the complex, if we can deliver them at or below the budget, we don't get them the out-year churn where we have to find additional resources. And there's a lot of inefficiency associated with finding resources, new planning, et cetera.

And so that rigor of understanding what are we going to buy for the money that we've budgeted something against. And we track that very closely.

It is allowing us to see how we can make sure that the money that we have is being invested as wisely as possible.

And so to that end we put together over the last year a project schedule for the design through completion. It's the first time we've done this on a major system nuclear project and integrated into that plan all of the safety steps. And so we track that on a monthly and quarterly basis.

And so that's just one example I think of the project management rigor that we have instituted here that we believe will allow us to successfully complete all of the safety requirements in accordance with the schedule to prevent schedule slip that you all talked about in the earlier panel.

MR. SULLIVAN: Thank you.

Now, the Board has long championed the early integration of safety into the design for similar reasons in that if safety is integrated early and it's done so effectively and appropriately, then that prevents rework later on, redesign later on, and the associated increases in costs and slippage of schedules.

So is your office now tracking early integration of safety into projects such as the UPF?

MR. RAINES: Yes, sir. We track that -- as I stated, we've put together for the first time a fully integrated design schedule which includes all the safety bases. I meet with our head of nuclear safety. He is a part of the IPT [Integrated Project Team] where we have monthly and quarterly reviews where we oversee the progress. We work very closely with them.

You know, we've had two major reviews since I've had this project, and at both reviews our nuclear safety experts were at those reviews. And they track the completion of the recommendations that we made and make sure that we're delivering on the commitments that we've had.

And so I think that, you know, when we testified last time, we were a little bit behind in those areas, and I think that we've done an effective job of understanding where we were behind, what we needed to do to catch up, and put a plan in place that we can monitor on a frequent basis to make sure that we meet those targets.

MR. SULLIVAN: All right. Thank you.

So, Mr. Eschenberg, I'd like to turn to you for a minute.

The safety basis of the UPF has certainly

progressed quite a bit, to the point where I think that it appears as though things are well on track. Our latest review found some issues, and I understand those issues are being worked on.

Nevertheless, when I look back over the history, last April of 2012 the Board wrote a project letter and identified several issues. More recently in August we sent a second letter that said, Good news. The first issues have been addressed. Here are some more. And in an ideal world we'd like to get to the point where we look at it and we don't find any issues.

So I've been associated with lots of audits, and sometimes I feel like the rules are clear, you know, so when the audit finds a problem, then you say, Well, gee, it shouldn't have been that way. And I've seen other audits where the rules are kind of convoluted and there's so many of them that you almost feel like, Well, they're going to find something no matter what. Which of these two cases do you think -- in terms of looking at safety with respect to this project which of those two do we fall in here?

MR. ESCHENBERG: That's a great question. Actually it's probably the latter. I mean for each

additional set of eyes that look at a project or a technical document there's always some supplemental comments that can be made based on one's personal experience and own perspectives.

Let me just make this comment. You know, as you pointed out, the project was in receipt of a letter from April of 2012. At that time frame we were clearly -- our design was clearly out of sync with our safety basis. The safety basis lagged significantly, and over the last 18 months or so we've made very good progress.

That's not to say that we're all the way there. I think that what we found in the processes is that some of our own governing rules in the department have some incongruences, and on this project we work very hard to fill these incongruences, and most notably the lag in delivery from the PSDR through the PDSA.

And so we put some governing documents in place managed by our safety design strategy that really forms the cornerstone. So all that is said to say that it's going to take a village for us all to be successful. We all have our respective roles.

We do reach far and wide to look for other opinions, not all of which we will agree with, but we

will take them into consideration, evaluate their perspectives, because at the end it does make a more satisfying product.

MR. SULLIVAN: All right. So are you reasonably confident moving forward based on staffing, based on the particular skills of the staffing, that if the Board is going to find anything on our review, it shouldn't be anything of significant concern. We pretty much have a good process now moving forward.

MR. ESCHENBERG: I would say that that's fair. That's clearly our objective. And to be quite candid, most people approach their jobs with a great amount of pride, and we do as well, but don't let the pride get in your way of someone else's technical perspectives. And those must be considered as well.

MR. SULLIVAN: All right. Thank you. I appreciate that.

Mr. Kimball, when Rory Rauch testified earlier this morning prior to the first session, he spoke about the August letter that the Board sent on UPF and was specific to the PSDR, the Preliminary Safety Design Report, and said, "It had not demonstrated that many credited safety controls are capable of effectively performing their safety

functions."

Do you agree that that was a true characterization of the PSDR?

MR. KIMBALL: Thank you for the opportunity to provide that update and response to that issue in the letter.

The issues that have been identified we've gone through and we've tracked, and one of the things that we found is that we have -- you mentioned early integration of safety in the design. We found that our existing control sets actually appear to be covering most of those issues.

What Mr. Rauch was pointing to is correct in that there was a weakness in our ability to demonstrate why our existing control set was effective. And so we are working on a process to make sure that we can document that and demonstrate why our defense in depth is very, very strong. So part of that is we're generating some interim safety documents that will focus on that very attribute of our controls.

MR. SULLIVAN: So is that kind of like we can put seatbelts in a car and that's the right control set, but you haven't demonstrated that? I'm trying to figure out how you explain to people what

does this mean? What was it that you were not doing?

MR. KIMBALL: Okay. So the initial safety document -- the Preliminary Safety Design Report is more focused on what we call the system level of hazard analysis. And embodied into the design is a tremendous amount of defense in depth, and so as we proceed through the detailed analysis, additional things have come up -- additional technical issues that come up we're able to address because we've already been very conservative and very robust in our defense in depth.

Some of these attributes -- some of these issues won't come up until we get the very specifics, and so we carry those as open items. We carry those as open technical issues. And many of these issues we're carrying as open technical issues until we can resolve them with a final design.

So in your analogy we know we need to protect an occupant in the car, so we put many features in to protect the occupant in the car. And we look at all the different ways in which we can have an accident that could injure an individual. But we may not be able to think of everything upfront, and so until we know exactly how something is designed, that leads us down to a new scenario

that we'd have to evaluate.

So at this point in time our design has been very robust. What we haven't done well is explain why we haven't done as well, is explain why did we put those features in, and that's what is incumbent on us in the next round of safety documents.

MR. SULLIVAN: Okay. Thank you.

Mr. Erhart, so I'd like to go back, and similar to the question I asked Mr. Eschenberg about, you know, the number of people who look at these things. I think your office is one of them, so we have Mr. Eschenberg responsible for this project, but you're responsible for overall safety here at Y-12. So your office looks at these as well, these safety products. Is that correct?

MR. ERHART: That's correct.

MR. SULLIVAN: Okay. And so are you confident with your staff and their ability to look at these and make sure that they're given an adequate scrub?

MR. ERHART: I am, yeah. I think they're very experienced, credible reviewers.

I will comment on that I think this is something that we've gotten better at, because as you

point out, I'm the safety basis approval authority for everything that goes on at Y-12.

Obviously there's no UPF right now, but when it comes on Y-12, that will fall within the safety envelope of the Y-12 site. So that means that we need to be synced up as far as, you know, what's going on in the project as that authorization basis evolves and be more involved in the future, too, because there is quite a lag between where we are now in the preliminary design -- the Preliminary Document Safety Analysis.

We want to have some interim reviews, communicate between the two staffs better than we have, and I think we are making some definite progress there.

But the project is being worked, but we can't work in a vacuum, and we have to stay abreast and apprized of the evolution of the safety basis. And of most particular concern, right, is making sure -- because every analysis you do is to ensure you have adequate controls in place with the priority being engineered controls where it makes sense, and those are more effective normally than administrative controls.

And that's really the emphasis right now.

And the design -- as stated, as the design evolves with the safety basis, sync those up so you're making good decisions on what will eventually be an engineered control within the facility so that we can lock that down.

And then as you mentioned before, we don't want to have the opposite occur where we get too far down in the design and come up with a scenario -- an accident scenario that requires controls that were not accounted for in the design of the facility.

So that's what I think we've made progress on, and I think we're in pretty good shape.

MR. SULLIVAN: Thank you.

Mr. Kimball, I want to go back to you. When I last saw you in Washington, DC, you came and talked to us about a new animal we call the Process Safety Report. So can you explain what that is and how that's working.

MR. KIMBALL: Yes, sir. So in proceeding through the design and the safety analysis the DOE standards recognize that as the process continues you tend to get more and more complex, both in design and in the output of the safety analysis.

So it's put in place several tier documents, such as the Conceptual Safety Design

Report, the Preliminary Safety Design Report, the Preliminary Document Safety Analysis, and then ultimately the Document Safety Analysis.

What it does not do is account for a very complex project that may have a significant time lag between these documents.

So essentially we recognized as an improvement in our processes that we needed to be able -- the effectiveness of controls being one of those issues -- to demonstrate that we are staying linked between safety and design as we proceed through.

So we've decided to create a Process Safety Report that takes each of our processes and add certain elements of the design phases. We will be documenting and updating the process description within that report. We'll update the summary of the hazard analysis, certainly identify the safety significant controls, but more importantly we'll focus on providing the basis for why those controls are addressing the hazards that are in the facility.

That will also allow our counterparts within UPO [Uranium Processing Facility Project Office] and NPO [NNSA Production Office] to evaluate and review the safety as it progresses rather than

wait until the very end of the project.

So any issues that may come up, any new considerations, we can then tackle earlier into the project and avoid any costly changes to the design itself.

MR. SULLIVAN: Okay. And so there will be a number of these for different processes, which is about how many?

MR. KIMBALL: Yes, sir. We're looking at eight Process Safety Reports at this point in time. The portions that we will not do that on will be the deferred scope, because that design will not mature to the level of detail we take that to so...

MR. SULLIVAN: All right. So these eight reports will be done between now and CD-3 [Approve Start of Construction], is that right, which is in March of '15. Do I have that date right?

MR. KIMBALL: Yes, sir, that's approximately correct. We will be issuing the first of these early spring, and then they will be used to roll -- those along with the review comments and incorporation of comments will be used to roll into the Preliminary Documented Safety Analysis.

MR. SULLIVAN: All right. Mr. Eschenberg, will your office be handling these much like prior

safety reviews?

MR. ESCHENBERG: They will. Let me just make a point of clarity. The March date would be for the first submission of a Process Safety Report, not CD-3.

MR. SULLIVAN: I understand, but I think he said spring of -- which I assume is spring of '14.

MR. KIMBALL: Spring of '14, yes, sir.

MR. SULLIVAN: All right. CD-3, though, what is that date?

MR. ESCHENBERG: That's in the fall of 2015.

MR. SULLIVAN: Fall of 2015. Okay. Thank you.

MR. ESCHENBERG: So our office will do rigorous reviews. And the PSR was the bridging document. It's going to bridge not only the time, but it also makes sure that the federal review is very comprehensive both between Steve's office and mine, because it does give us the opportunity to involve the federal staff and the overseers of these projects early on in the formation of the control strategies and how they're integrated into the design.

And that's the single largest improvement

that we've had since the previous versions that we've had, where we would literally take receipt of the PSDR from our contractor, not having had a great deal of preliminary review or involvement in its development over time.

And so the PSR is of value that really helps us guide in realtime to make sure that the safety control strategy and regimes are consistent with the design and that the owners are in concurrence with the approach.

So we will approve these in much the same manner as they were rigorously reviewed.

I will say that these PSRs do form the foundation of the chapters in the DSA [Documented Safety Analysis]. So this is time well spent for us all and a very advantageous process for us.

MR. SULLIVAN: All right. Thank you.

CHAIRMAN WINOKUR: Ms. Roberson.

VICE CHAIRMAN ROBERSON: Thank you, Mr. Chairman. Thank the Panel Members.

Mr. Eschenberg, during our UPF review last October we discussed the safety-related risk associated with NNSA's plan to defer a portion of the project scope to a later date. At that time you told us that the project had begun a series of engineering

studies to determine the impacts of the deferred scope on the UPF design itself.

Can you give us an update on the scope and the results of those engineering studies.

MR. ESCHENBERG: Yeah, we've completed the studies. There were I believe seven studies done in total, and they were done principally to inform us on how might the sizing of some of the process infrastructure and supporting systems be altered in that we would not build at the onset the full capability in the UPF; it would be focused principally on the 9212 capability. So these studies have been completed. They have informed our design approach.

In addition to these studies, the owner has specified specifically what our expectations are for functional operability requirements in what's called the Program Requirement Document and in the Systems Requirement Document.

We do have the deferred scope. We've done a preliminary analysis. We understand our safety control strategy. It's guided by the SDS. These things will be included in the PDSA at a very high level. This does give us visibility as the deferred scope matures, not only the supporting infrastructure

but also the individual processes themselves.

I will tell you that we do have an aggressive program to understand what the technology risks are for not only the 9212 scope but also the deferred scope.

We're making huge investments -- significant investments to make sure that we understand what these technology risks are, again for both parts, both the immediate scope and for the deferred scope.

And so today I guess in short we're much better informed on the deferred scope, what it means, how far we need to design it, and then how we're going to control it in the governing safety documents.

VICE CHAIRMAN ROBERSON: So, Mr. Strock, what have you determined to be the impacts on the UPF design as a result of the studies and conclusions from that?

MR. STROCK: We do not see any real significant impacts on that. I think that they've largely validated our approaches. And Mr. Kimball may comment on some of those things specifically.

I think that the approach we've taken as a result of the direction received from the revision of

the PRD is a sound one. We have designed the full facility with safety in mind, so we have a PSDR that covers the full facility. And as we've talked about, our focus right now is on achieving a PDSA, which covers the initial phase, which is the 9212 capability.

So in summary, I don't see any real significant impacts on our approach based on the studies. Okay. So for both you and Mr. Eschenberg -- I'm actually going to go to Mr. Eschenberg for this question. You kind of hinted on it -- I would just like you to describe -- so you have a Preliminary Safety Design Report, which identifies hazards and controls for the operation of the full scope. And you're going to transition eventually to a DSA, Documented Safety Analysis, that allows you to authorize operation of the 9212 scope -- it's limited to the 9212 scope.

So can you just walk us through how you're going to make that transition from the full scope to the limited scope in the DSA?

MR. ESCHENBERG: As related to the deferred scope?

VICE CHAIRMAN ROBERSON: Exactly.

MR. ESCHENBERG: Okay. So as we evolve

from the PSDR, which we're in the process to headed towards PDSA, Preliminary Documented Safety Analysis, again that will include the entire scope for the UPF, including both 9212 and the deferred scope. What's included in the PDSA is hazards evaluation and a safety control set.

As we take our final step to DSA from the Preliminary Documented Safety Analysis to the Documented Safety Analysis, it's a key transition point, because what will actually happen there is because the DSA is a document for the facility operators to use, at that point we will extract the scope related to deferred scope and take that scope and that analysis and then convert it back to a Preliminary Safety Design Report. And then it begins the life cycle again.

So as we complete the details of design for deferred scope and the detailed analysis to support that, then we will evolve it from the PSDR into the Preliminary Document Safety Analysis into in and of itself its own DSA. So it's a --

VICE CHAIRMAN ROBERSON: No. Go ahead. I think what I'd really like you to do is focus on the Document Safety Analysis for the phase one for the UPF portion.

MR. ESCHENBERG: Okay. So for the phase one for the 9212 scope, as we go from the Preliminary Documented Safety Analysis to DSA, it will be done in phases. Our first approval -- and that's the approval that's required before we actually initiate construction -- will be for the building shell, the structure, the supporting infrastructure, and it will allow us, the project team, to advance buy bulk materials, things like concrete, structural steel, rebar, et cetera.

As the design evolves through to final design and we complete our final safety analysis, the PDSA will be incrementally revised and approved. And the key point there is that we will not initiate construction for anything unless it's been approved in the PDSA through the safety basis approval authority.

So that's a key feature that's governed and stated in our safety design strategy. And I will say that's much unlike -- it's very different from some of the other construction projects that are within our enterprise, but this does give us a very definite level of control, that we do not allow the commencement of construction or the commencement of advanced buys for safety significant materials until

we have that approval done by -- by the owner.

VICE CHAIRMAN ROBERSON: So you correct me if I'm wrong that the safety requirements for some of the safety systems that are a part of the current project scope are based on the hazards associated with the deferred scope. Is that right?

MR. ESCHENBERG: Yes, they are.

VICE CHAIRMAN ROBERSON: Okay. And so how are you going to handle that transition?

MR. ESCHENBERG: And so that goes to in part my earlier answer. Today what's contained and will be contained in the Preliminary Document Safety Analysis is for the full scope. We understand that at the facility level and at a systems level. We've done the hazards analysis. We understand what our control approach is and strategies are. What's missing for the deferred scope is process level safety controls.

And so I'm a car guy, too. To use car analogies here, to stick with that theme, what we're talking about here is not the fact that our airbags are going to deploy, not the fact that we have to have seatbelts, not the fact that we have to have antilock brakes, not the fact that we have to have crumple zones, but in fact what are the set points

for the fuel gauge, what are the set points for the ABS to activate.

So we have a very mature level of thinking and analysis behind the deferred scope in the PDSA.

VICE CHAIRMAN ROBERSON: So give us some examples of those controls that won't change. You're saying at the facility level you're going to carry that through to the preliminary DSA; at the process level you're not. So at the facility level what are those?

MR. ESCHENBERG: So at a facility level it would be our approach to confinement, the building structure, the ventilation system, many of our defense in-depth systems, whether it be fire protection or our approach to geometry control for criticality safety, these features that involve the actual construction and building of the facility are known and will not be changed.

VICE CHAIRMAN ROBERSON: Okay.

CHAIRMAN WINOKUR: Thank you.

Hey, John, I have some more questions for you, and these are just something people are talking about and I would like to understand.

How much does the deferred scope impact the phase one design?

MR. ESCHENBERG: And for clarity, the phase one design is the supporting infrastructure in the 9212 --

CHAIRMAN WINOKUR: Let me be more specific, how much does the deferred scope affect the need to redesign phase one due to space fit issues? Is it a major contributor to that?

MR. ESCHENBERG: No.

CHAIRMAN WINOKUR: No?

MR. ESCHENBERG: It's not a major contributor. Now --

CHAIRMAN WINOKUR: So you would do the same kind of space fit redesign for phase one, and deferred scope doesn't really have a large impact on that?

MR. ESCHENBERG: I would say that it's fair to characterize it like this. Throughout the facility when you're including both 9212 scope and the deferred scope we had certain challenge areas within the footprint.

Many of those challenge areas were related to the 9212 scope, principally the enriched uranium metal purification process, and then secondly the casting line. So that's 9212 scope. We were challenged for space in those two areas in

particular.

We also had some challenges in the analytical lab, and that's relative to the 9212 scope today. If you look at some of the other areas like machining, for example, which is a deferred scope element, it's fair to say that we did not have that level of challenge relative to space fit there.

So I think my assessment would be that our principal challenge was linked in fact to accommodating the 9212 scope and less so of deferred scope there.

CHAIRMAN WINOKUR: That's very helpful. Thank you.

The next question I have is that one of the projects DOE had was the waste treatment plant out at Hanford, which you are very familiar with --

MR. ESCHENBERG: I am.

CHAIRMAN WINOKUR: -- and in that situation of course construction was out-pacing design -- actually it was out-pacing the resolution of technical issues that impacted design.

You have a similar kind of challenge in a way with these different phases in the fact that you are going to sequentially or serially build the building yet you need to accommodate for deferred

scope and design features that may come into play at a later date.

How challenging is that and how are you going to assure yourself that you don't somewhere down the line go, Oops, we're going to have to pull some concrete out, going to have to do a few things different because we didn't quite figure that out right.

MR. ESCHENBERG: That is an excellent question, and you're right. There are many of us that have learned a lot of tough lessons managing some of these larger projects around the complex.

And let me answer it in two ways. One is from a process perspective. What are we doing differently on UPF. We have a series of processes on project that really drive the early identification of these technical issues.

The other piece of this is we between Carl and myself and the balance of the project team we have fostered an environment that drives the appropriate culture. And it's a culture where we want our employees to bring forth these very difficult technical issues. We want them to empty their desk drawers early and often.

We have differing professional opinions,

procedure and process in place. We've been fortunate not to use it. We have a technical issues management program and system. All of these things -- they sound great; it's always nice to have systems, but it really requires constant reinforcement by the management team that our expectation is that you use these processes to drive early the identification of these challenging technical issues.

So on deferred scope our challenge there is to push the design to a point of maturity where we have confidence that, of course, everything is going to fit and everything is functionally operable. But it's much more than that, because as we envision it today, when we install the machine shop or the balance of the deferred capability, we also have a mission requirement to meet. We have functionally operable safety systems that we're relying on.

And so we've put our teams together -- and this is one of the things that the studies did help inform us to do, and that is how is it that we can design in features today that will accommodate what amounts to in jargon a hot tie-in, how is it that we can have constructors in our building concurrent with operators who are meeting our country's mission requirements?

Have we thought through this in a comprehensive manner? The answer is yes. Are we done thinking our way through it? The answer is no. Because this is a very complicated thought pattern to think through elements of design as you mature and then look ahead at some 10 or 15 or many years beyond and try to contemplate how might we do a hot tie-in to the ventilation facility, or the fire suppression system, or how might we accommodate upgrades to the analytical lab while we trying to do mission requirements.

It is a very challenging set of conditions and a very challenging thought pattern to think through in a comprehensive manner.

CHAIRMAN WINOKUR: Thank you for that. It is very challenging. You don't really even know what will be available to you in 10 or 15 years. It's like somebody trying to prewire their home for sound or video today. We have no idea what will be available to us in 10 or 15 years. You probably won't get it quite right.

But I understand what you're saying, and I think to me it seems very challenging to do that and to make sure that the fire suppression, ventilation systems, all these systems, you get them just right.

Sounds tough, but I appreciate your thoughts.

I think today's final questions for this panel will be Mr. Sullivan.

MR. SULLIVAN: Well, thank you. I want to ask some more follow-up questions on space fit. And I was going to ask Mr. Kimball but I see that this is the last question, and Mr. John Gertsen is sitting there. I can't let him get away Scott-free.

So I will ask you, and you can defer to Mr. Kimball if you want to. But space fit is a buzzword for essentially the initial design. The building wasn't anything big enough, and it's been solved by making the building taller.

And so I understand that there were some safety aspects related to that in terms of the fire suppression system. There might be others. It seems like if you make a building taller, there might be some impacts on seismic safety.

Would you speak to how the safety has developed as a result of space fit.

MR. GERTSEN: Absolutely. And I'll preamble by saying anything I miss I'm sure Mr. Kimball will fill in the gaps.

Concurrent with the plan to address space fit from a design perspective there was a parallel

plan to address it from a safety analysis perspective. And so there was a lot of work done looking back at our hazard studies and making sure that we had addressed the impacts.

Kevin told you a year ago that the one area that presented potentially some challenges was the fact that we were going taller with the building and therefore our sprinkler systems would be higher in the air. And we had to really confirm the effectiveness of those sprinkler systems.

While we're not complete with all of that work now, we have spent significant effort in the past year looking at those and realize we're in better shape than we thought. And part of that is the nature of the defense in-depth set of controls that we've designed for fires.

We start with the idea we don't want to have a fire. We prevent the fire, noncombustible construction where we store flammable or combustible materials in proximity to the hazardous materials we're trying to protect, things of that nature.

And so Kevin's fire analysts are going through systematically the entire facility and are relooking at that and then saying, Okay, now, if we have a fire, are our sprinklers still effective. To

date we haven't found a place -- we're not fully complete -- we've had to make a major accommodation due to the sprinkler systems.

Beyond sprinklers, which is the one area we anticipated, we did go through all the hazard studies, saying, Is there something else perhaps that is caused by adjustments for space fit? And in all cases I think that has turned up negative.

And I would request to see if Kevin has anything else he'd like to add.

MR. SULLIVAN: Mr. Kimball.

MR. KIMBALL: As far as the other issues, we've looked at all of the process areas specifically for impact on the safety controls. There are three still outstanding that we've not completed the review on, but of all the ones we've done so far space fit is not driving any change to the safety controls.

The three remaining ones are all dealing with our solution systems, our fissile solution systems. And what we're looking at there is for criticality safety. Now, that we've got the equipment layout drawings we're doing the detailed analytical models just to make sure that spacing does not present a problem to us. But that's also not being driven by building fit. We have to do that

anyway, so it's part of our normal process.

MR. SULLIVAN: And will these three areas be addressed in the Process Safety Reports that we spoke of earlier?

MR. KIMBALL: Yes, sir. In fact, we've got to have those determinations before those Process Safety Reports, so we know that those designs can proceed with that appropriate equipment layout.

MR. SULLIVAN: All right. Thank you.

So then I just want to go over to the federal side of the house and start with you, Mr. Eschenberg.

So are you confident from a safety standpoint that -- what I gather from the other side of the table is we're sort of out of the woods in terms of redesign from space fit.

MR. ESCHENBERG: I think the answer to that is yes. I would caution all of us on our design team that we need to stay continually vigilant. So I tell you that to say that although I have a high level of confidence in no way am I yet completely comfortable, because we do have a ways to go to finalize our design. We have a ways to go to finalize our analysis. And it's my job to worry, and so that's what I do.

But to abate that worry we've got a system of governing documents, of governing processes that we now have in place. I feel very good about the team that we've assembled, both on the federal and the contractor side.

Are there distractions? We absolutely have distractions, whether they be contract-related distractions or whether they be budgetary. It's Mr. Strock's and my job to make sure that our team stays focused on task and in no way do we become comfortable, that we stay focused on the task at hand.

MR. SULLIVAN: All right. Thank you.

Mr. Erhart, anything you want to add?

MR. ERHART: I'm never out of the woods, so we will continue, you know, the challenge and try to think up -- other than the fire suppression issues, make sure that obviously the fires are -- that that system is designed properly because of the introduction of the space fit issue and try to challenge with other thoughts of what could also be affected. And I think that will continue to go.

I can't think of anything right now, but my review will be -- you know, eventually will be the last review. And it needs to be very comprehensive.

Also I like what Mr. Eschenberg said originally. We're always interested in other folks' thoughts. We appreciated the Board's letter. I would since I'm talking to you -- the ideal world that you postulated where you find no issues, I don't think that will ever occur, because everybody has different perspectives. And the Board brings a valid perspective, and we take that and see how we can make sure that we've covered things correctly, and always be open to the non-zero probability that's been discussed here.

And so I think we've responded to your letter that way. We'll look at our processes to make sure we always open for something we haven't seen.

MR. SULLIVAN: Okay. Thank you.

And, Mr. Raines, if we hadn't dragged you out of Washington, DC, today you would have had the day off due to the snow. So since we're making you work today I'll give you the last word. Anything you want to add about -- really just to sum up how confident you feel about the safety of this project moving forward.

MR. RAINES: Yes, sir. I think overall my confidence level is much higher now than it was two years ago.

What John and Kevin and Carl and Steve are talking about is I think a focused approach to understanding that we had some shortfalls in processes and internal oversight, both at the project, site and at the headquarters that we've rectified. We bring more external reviews, and the project team is more open to these external reviews. We have brought new talent to the project.

So besides just the numbers of people, what we really are very, very focused on is making sure that we get the best quality people that we can. And, you know, I don't want to embarrass John or poor Carl, but we worked real hard to recruit John to become the Federal Project Director, because as you said, Mr. Winokur, he has had experience on major system nuclear projects that were challenged.

And then we brought in a gentleman who had ran the entire U.S. Army Corps of Engineers to understand not the technical issues but the overall leadership and management and team building that we see that we need to make this thing very successful.

We partnered much more closely with the NPO, and things that in the past -- I think maybe there was friction through new organizational constructs -- we're getting through that.

We have significant leadership support in the headquarters as you heard earlier -- that this is a vital and urgent mission. Safety is paramount. There are budget challenges that will always be considered. But nobody puts budget ahead of safety. And I think that that's very, very encouraging.

And so for me -- I wrote down what John said, because I'm going to use it. My job is to worry as well. And, you know, we will never become complacent. And I think that we have the right team in place, both quality and numbers. We have improved our processes.

We will continue to improve those processes as we learn more -- like you've heard about the PSR, right -- to make sure that we don't just comply with our governing orders; what we will do is we will look at how the governing orders gives us the desired outcome, and when the desired outcome requires additional things -- and the PSR costs us money. I mean it's an enormous step. Those are investments that we say that we're going to make in order to do this right.

So I'm very, very comfortable and actually prefer being down here than being in Washington at every opportunity, so thank you for inviting me.

MR. SULLIVAN: Thank you.

CHAIRMAN WINOKUR: Let me ask one final question to you, John, or that is Mr. Eschenberg.

The Board wrote a letter in April of 2012. The board wrote a letter in August of 2013. Is it fair to say that as the design evolves, there are always issues that uncover themselves and that require independent eyes and people to look at? Some folks think you're right, you look at the project once, you make some suggestions, and you're over, you're done.

But is this a continuous process where you would expect future discussions with the Board?

MR. ESCHENBERG: I absolutely do. Again I think it really does take a village to be successful.

One of the advantages the Board brings is that you, unlike I, see the entirety of our enterprise across the environmental management program and the defense program and that gives you a very unique perspective. We try very hard to have that enterprise level perspective, too, but being separated by time and distance and seeing the broader enterprise at play and then targeting that feedback to very challenging projects like this.

I fully expect that our relationship will

continue -- well, forever. It's an enduring relationship. And I do mean this with a great deal of sincerity, because I've got a number of years of working very closely with the Board's staff and the Board. There is a great deal of value in this interchange. So I do fully expect letters, both good and bad, as we proceed.

CHAIRMAN WINOKUR: Thank you very much for those comments.

At this time I want to thank the panelists, Mr. Raines, Mr. Erhart, Mr. Eschenberg, Mr. Strock, Mr. Gertsen and Mr. Kimball.

And we'll move to the next phase of the hearing, which is public comment.

Thank you.

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 are posted at the entrance to this room. We have generally listened to 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 the speakers state their name and title at the beginning of their presentation.

There was 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.

So to give everyone wishing to make a presentation an equal opportunity, we ask that speakers limit their original presentation to five minutes. The Chair will then give consideration for additional time 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 Board has received four letters from interested members of the public concerning Y-12 operations and the Uranium Processing Facility. These include a letter from Mr. Ronald Woody on behalf of the Roane County Office of The County Executive, a letter from Dr. Anthony Wise and Dr. Chris Whaley on behalf of the Pellissippi and Roane State Community Colleges, a letter and newsletter from Mr. Ralph Hutchinson on behalf of the

Oak Ridge Environmental Peace Alliance, and a letter from Judge Executive N.E. Reed on behalf of the Association of Tennessee Valley Governments. These documents will be entered into the hearing record.

I'll now proceed to call interested members of the public who have signed up to speak. And our first speaker is Shirley Cox.

PUBLIC COMMENTS

MS. COX: Is it on? Thank you.

Mr. Chairman, the Board members and other distinguished participants, and visitors, I really appreciate the opportunity to be here today and speak with you again.

For the record, my name is Shirley Oden Cox. I am a Y-12 retiree. I have spent more than 40 years working at the Y-12 plant and other facilities supporting nuclear operations, and I'm also a resident of this community.

Again, thank you for the opportunity to publicly support Y-12, the NNSA, and the UPF project.

We've heard some really good questions and answers this morning, and I really appreciate the opportunity to hear those. And I agree with the responses I've heard from a technical viewpoint as well, having spent so many years in those facilities.

I've spent nearly 20 years in these HEU [Highly Enriched Uranium] operations and facilities during and after the Cold War. I can personally attest to the need and importance of maintaining the 9212, 15 and Beta-2E complex facilities until the UPF is fully operational.

These facilities and operations are vital to our nation and our national security, and many other important reactor operations, and maintaining their outstanding safety record as they've always done in the past.

The U.S. nuclear weapons program has depended on recycled HEUs since the 1960s. I know and appreciate the importance of having purified HEU to maintain the necessary quality of the HEU, to continue making replacement components and other HEU missions that Y-12 supports.

The chemical recycle/recovery operations at 9212 and eventually in the UPF are the only means in the USA to obtain this necessary purified HEU to maintain the specifications of this material stream that's required for Y-12's critical missions.

Just recycling retired old weapon components will not always be sufficient for these missions. We have to have this purified metal coming

from the recycle/recovery operations. These facilities and operations are operated safely, and they must continue.

I respectfully ask and encourage you to help and support these very smart, capable and dedicated people in the progress of the UPF project.

Thank you.

CHAIRMAN WINOKUR: Thank you, Ms. Cox. If you have a written statement, we'd be happy to accept it into the record.

Michael Thompson.

MR. THOMPSON: Good morning and thank you for this opportunity. My name is Mike Thompson. I'm Vice President of the Atomic Trades and Labor Council, which represents approximately 2000 employees at the DOE site in Oak Ridge.

On behalf of 1100 workers at Y-12, I'm here today to voice my support for construction of the Uranium Processing Facility at Y-12. Our members are doing hazardous work in facilities that were built over 65 years ago. The UPF will provide a safer, more secure environment for us to perform that mission that's so vital to the security of our nation.

During its long history Y-12 has proven to

be a safe place to work and has also been a good steward to the environment. Y-12 is a part of this community and an important part of the local economy. Labor and management have a good relationship and are committed to solve problems together that will make Y-12 the best in the business.

And I have to go off script just a moment here to say I appreciate Mr. Sullivan and others referring to the car analogy. I'm often questioned by high school students, young college students, and retirees from all phases about this thing called UPF. And in my small mind even I came up with the analogy of the family car.

You know, Y-12 has been known as a family plant, whether it's safety, whether it's mission, whatever the case may be, we pull together, and we take care of business. And we are talking about the family car here today.

The Atomic Trades and Labor Council supports Y-12 and its mission. We believe that construction of the UPF will make Y-12 safer, more secure and more efficient.

We have skilled and well-trained workforces who are committed to help make Y-12 a modern facility of a nuclear weapons complex. Construction of the

UPF will enable us to move out of these outdated facilities and continue the important work we've been entrusted to perform.

I thank you for your time. And I'd ask this be entered into the record.

CHAIRMAN WINOKUR: We will so do that. Thank you, Mr. Thompson.

James Jones.

MR. CHIN: Mr. Chairman and Members of the Safety Committee, thank you very much for this opportunity.

My name is Rick Chin, Jr. I'm a member of the Y-12 Community Relations Council, and I'm here on behalf of our Chairman, Mr. Steve Jones, who cannot be here today.

At this time I'd like to read a statement from the Community Relations Council.

On behalf of the Y-12 Community Relations Council, I want to welcome you to East Tennessee. I also want to thank you for selecting Knoxville, Tennessee as the site for this hearing. By doing so you've allowed all interested parties to publicly express their opinions and provide their own insight as to why the urgently needed Uranium Processing Facility should, or possibly in some cases should

not, be built, allowing for the people of our region to become informed about this important national asset in a more objective and factual manner.

The Y-12 Community Relations Council, or CRC as it's commonly referred to, was created by B&W Y-12 in 2002 to enhance community relations between Y-12, the Oak Ridge community, and the surrounding East Tennessee communities.

Y-12 is in Oak Ridge, but it is part of the second largest employer in East Tennessee and currently employs over 4,700 employees and over 3,300 contractors and dedicated workforce, whose focus has been on our national security and our continued oversight of the improvements of America's nuclear needs, whether it be for nuclear power, nuclear medicine, or national defense.

In addition to these jobs it is estimated that around another 24,000 indirect jobs are created by the activities of Y-12. Y-12's economic impact to the East Tennessee and surrounding Appalachian region cannot be overstated. Here in this part of the country it is difficult to find anyone who has not been positively impacted, their lives made better by the federal assets located here.

Over the past decade we have witnessed a

progressive transformation of the Y-12 National Security Complex and commend NNSA for its management of those revitalization efforts. But there is more critical work to be done.

The safety and security of our community and workforce has always been emphasized during interaction between Y-12 management and the CRC.

Oak Ridge recently celebrated its 70th anniversary. Now, almost everyone knows the city behind the fence was constructed to support the Manhattan Project, which brought to end the Second World War.

Most people know that the National Security Complex has played an important role in securing America's future by maintaining our nuclear capabilities through The Cold War and modern age.

Today patriotic Americans continue to work towards our national security in the same facilities built in the early 1940s at a time when the military flew prop planes instead of supersonic jets with stealth capabilities, in the 1940s at a time weapons were dropped instead of guided with precision using lasers, GPS, and internal cameras, at a time when things we take for granted everyday weren't even conceived of yet.

Crucial components of our nuclear capabilities were being developed and maintained in the same exact facilities being used today.

Old weapons have been retired, replaced and upgraded. Most military infrastructure has been replaced and upgraded, and yet today dedicated Americans are still involved in the important task of enriching and maintaining our nation's uranium supply in these same facilities used in early 1940s.

The Uranium Processing Facility, or UPF, that is discussed today addresses any operational and safety concerns that come from an aging infrastructure. It will reduce the footprint of the uranium enrichment process by 90%, creating not only a more effective economic platform, saving taxpayers millions of dollars in the long run, but be much easier to secure the safety of the workers and the surrounding communities.

CHAIRMAN WINOKUR: Would you be able to summarize the remaining comments in the next minute or so.

MR. CHIN: Yes.

CHAIRMAN WINOKUR: Thank you.

MR. CHIN: This state-of-the-art facility will ensure not only the safest environmental

possibilities for the workers engaged in UPF, additionally the highest technological construction methods, but will do a great job.

The sooner the UPF plan is executed the safer our community will be. The sooner the UPF is constructed the safer our workers and communities will be.

Y-12 is unique in its mission, not only in the world, but what we do. And having grown up in this important facility, I am biased, but I don't think anyone could do any better. We have an excellent management team in place and the workers with the proper experience and work ethic to execute our nuclear mission.

It is time to address America's nuclear future and construct the UPF facility.

Thank you.

CHAIRMAN WINOKUR: Thank you. We will be happy to enter that written statement into the record.

Mike Arms.

MR. ARMS: Good morning, Mr. Chairman, and Board. We again thank you for coming to Knoxville and our East Tennessee region to hear from us today.

I'll try to be brief. My statement has

been -- I'm Mike Arms. I'm with the Association of Tennessee Valley Governments. Our statement has been posted on your website which is why I'm only reading four sentences from our statement. But I want to begin with my analogy, which happened to me five days ago.

I was in Washington and had a chance to visit Arlington. And I think because of the Kennedy assassination a lot of people had that interest. Approaching the eternal flame, the tour bus driver said, just this summer we moved the flame, just like the Olympic flames, to the side, went in and replaced all this aging infrastructure, new gas burners, replaced the motors. And basically she ended with the statement, we want this flame to burn another 50 years.

As the Association of Tennessee Valley Governments, we want our Y-12 plant to operate another 70 years.

For the public I think it's important to realize throughout our whole region we have a lot of federal assets. The Huntsville Space Center is doing modernization. Fort Campbell is doing modernization. TVA is replacing two 50-year-old fossil plants in Kentucky with a billion dollars of new gas plants.

Tennessee Eastman is putting a billion dollars in its infrastructure.

And sometimes we look at the cost of a project and get a little tight stomach, but this project is important and crucial to our region.

And I'm going read only four sentences from our letter.

The Y-12 National Security Complex with several facilities more than 50 years old is such a case. The new UPF will replace several aging processing facilities that have become structurally weak and in need of improvements in environmental and safety areas.

A new UPF combined with the recently constructed highly enriched uranium storage facility will significantly modernize this important federal asset. It will result in a National Security Complex that can operate another 70 years with a greatly improved safety and health work environment.

This action is important to the local governments of the Tennessee Valley region. On sentence on the Associations of Tennessee Valley Governments. Judge N.E. Reed of Edmondson County, Kentucky is our President. Next year our president is from Tate County, Mississippi. Our Board members

include Ron Woody from Roane County. Our Anderson County Mayor, Terry Frank, is a member, the City of Oak Ridge -- the City of Kingston. So it is truly a regional group of local governments, and I do think this project is important.

Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Arms. Parker Hardy.

MR. HARDY: Thank you, Chairman Winokur, and Members of the Board. My name is Parker Hardy. I'm the President and Chief Executive Officer of the Oak Ridge Chamber of commerce. We're an association of some 700 business interests with a mission focused on enhancing the economic vitality of the greater Oak Ridge community. And as the Oak Ridge community's recognized business voice, we serve as an advocate on many issues such as those being addressed by your Board today.

If our nation is to maintain an effective nuclear deterrent capability, we believe it's essential that the work and the work product associated with that deterrent be handled safely, securely, efficiently, and economically. And all the strategies engaged should point to that and all the strategy should acknowledge the fundamental roles to

be played by the Y-12 National Security Complex and the new Uranium Processing Facility.

America's center of uranium excellence for weapons maintenance, for testing, for dismantlement, for nuclear naval fuel, for medical isotopes, for down blending to run modern power plants is Oak Ridge, Tennessee. And our community has held that distinction for some 70 years.

In Oak Ridge we have the knowledge, we have the talent, we have the culture, we have the community support that's needed for the safe operation of the existing Y-12 mission and capabilities as well as those for the future.

And in order to capitalize on that community culture -- and that community culture is extremely important -- we understand uranium processing at every level, and it's essential that the modern UPF be built at the Y-12 facility without delay.

Our Chamber supports the Y-12 National Security Complex. We believe in the Y-12 mission and in the enormous safety, security, and production benefits that UPF can bring to the nation.

Oak Ridge is proud to be the uranium processing capital of the world. We know that our

skilled workforce and our community are uniquely positioned like no other to make UPF a safe, secure, efficient, and economical reality for America's national security.

Thank you for the opportunity to address you today and thank you for your concern on behalf of our community and our community's facilities.

CHAIRMAN WINOKUR: Thank you, Mr. Hardy.

Mary Lentsch.

MS. LENTSCH: I'm Mary Dennis Lentsch, a member of the Sisters of the Presentation. I live at Washburn, Tennessee in Grainger County, and I'm an active participant with the Oak Ridge Environmental Peace Alliance.

First off, I want to thank the Defense Nuclear Facility Safety Board for holding this public accountability hearing in Knoxville and also the fact that it includes opportunities for local citizen input.

When we talk about safety with regard to Y-12 and the UPF, I am a very concerned citizen. My concern prompted me to attend and speak at the Defense Nuclear Facility Safety Board last year and to be present again this year.

It is my understanding that the UPF will be

implemented in three phases, and this raises a red flag for me with regard to safety. Safety must be the highest priority, whether there is one project manager for the three phases or whether there is a different project manager for each phase. During these three phases safety considerations may be in competition with design schedule production demands, and project costs.

My question, who will be responsible for maintaining the continuity of high-quality safety through the three phases?

I expect the Defense Nuclear Facility Safety Board to demand maximum security in the design and all operations by project managers and contractors throughout the proposed three phases.

This means the Defense Nuclear Facility Safety Board must receive the funding not only to current staffing levels but funding sufficient to address additional questions about safety that will arise from the effects of budget constraints on other aspects of Y-12 operations.

My question, will the Defense Nuclear Facility Safety Board have the necessary financial and government support to carry out their critical mission of ensuring safety at nuclear facilities?

Security and safety are linked like Siamese twins when nuclear weapon structures are considered. An ideal UPF structure at Y-12 would be a concrete bunker covered by an earth berm on top and at three sides, leaving only one side to be protected.

The proposed aboveground design of the UPF leaves four sides and roof vulnerable and needing to be protected. This means significantly more security will be needed to defend the aboveground UPF.

My question, what is the safety plan to increase the security forces at Y-12 needed to protect the proposed UPF?

I live about 40 miles from the Y-12 bomb plant and consider the safety oversight work of the Defense Nuclear Facilities Safety Board to be indispensable to protecting the operations of Y-12 and local citizens. For me this safety oversight is of paramount importance.

Thank you.

CHAIRMAN WINOKUR: Thank you, Ms. Lentsch.

Mayor Tom Beehan.

Sorry I didn't recognize your name earlier, Mayor. Welcome.

MAYOR BEEHAN: It's good to be back, and thank you for coming.

My name is Tom Beehan, and I serve as the Mayor of the City of Oak Ridge, Tennessee.

On behalf of my fellow council members and the entire Oak Ridge community, I want to thank you for the opportunity to be here today to discuss the UPF.

As you know, the Y-12 National Security Complex is located entirely within the city limits of Oak Ridge with a population of 30,000. Many of our citizens are retired from or currently work at Y-12, including several members of our City Council.

Oak Ridgers strongly support the continued operations of the Y-12 and its national security mission as a center of excellence for uranium and for other special nuclear materials.

Our support, however, is predicated on the expectations that the federal government will invest in state-of-the-art technology and undertake rigorous precautions to protect the health and safety of the Y-12 workforce and our community.

For more than a decade the National Nuclear Security Administration and its contractors have systematically undertaken a program of facility modernization at the Y-12 site. While tremendous progress has been made, the transformation will not

be complete until the aging process buildings are replaced with a new UPF.

I am confident that the existing facilities can be safely operated until UPF is operational, but they are increasingly inefficient and costly to run.

Since attending your hearing last year I'm very pleased with the progress that has been made regarding the integration of safety into the design in the UPF project. I heard evidence of that testified to today.

I look forward to the completing of the design and the undertaking of the construction phase of the project.

Finally, as the Chairman of the Board of the Energy Community Alliance, known as the ECA, a membership organization of local governments around the DOE complex, I express my ongoing gratitude for your public outreach to our communities.

The work that you do and the relationship you build engenders public confidence in a program of robust safety oversight within the weapons complex.

Thank you very much.

CHAIRMAN WINOKUR: Thank you, Mayor Beehan. We would be happy to accept your written statement into the record.

MAYOR BEEHAN: We will do that. Thank you.

CHAIRMAN WINOKUR: Mark Watson.

MR. WATSON: Mr. Chairman, Members of the Committee. My name is Mark Watson, and I'm the City Manager for the City of Oak Ridge. And I'm pleased to be here today and welcome you back at any time and certainly at Oak Ridge itself as this project progresses.

As City Manager, it's my responsibility to manage day-to-day City operations with our professional staff of over 400 employees. And in accordance with long-term changes in federal policy over the last 30 years we've seen a lot of outsourcing and contracting occurring. And as we look at that, the City government of Oak Ridge is also part of that contracting program. So we're involved with providing electricity to the community, providing water and waste water services to the community.

And some of those services are both inside the fence and outside the fence. So we've become an integral partner, not just a contractor, but the government-to-government relationships, and we would ask that that be considered as we move forward.

Our staff communicates regularly with

federal and state officials to ensure highest levels of cooperation, and particularly with respect to emergency response planning. Sometimes incidents occur outside the fence before they get inside the fence. And so we have to be primarily prepared through our public safety services for that.

We've undertaken a program of modernization. We've heard talk of modernization today quite frequently, and it is time to do so. Rather than keeping things repaired over the years, it's time to invest in new technology, new computer systems, new operations, and make those changes.

We're committed to strengthening inter-governmental partnerships as we move forward with design and construction phases of the UPF project. I think we've got a dynamic team that's taking on one of the major projects in the history of the State of Tennessee forward and certainly can be a product that will be appreciated by the citizens at large in the United States.

We will work with our federal and state counterparts, but we would like to be at the table as we talk about these projects that are necessary in order to mitigate impacts on our community. As we look at new workers coming into the community, we

have streets and waterlines and other types of things that are impacted. And we want to make sure that we provide those services for this project.

Feel free to contact me should you have any questions or any coordination that needs to be done for this wonderful project for this region of the United States.

Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Watson.

Terrence Clark.

DR. CLARK: Good morning. My name is Terrence Clark. I'm here as a representative of Physicians for Social Responsibility. I'm the Chair person of the Western North Carolina Chapter of Physicians for Social Responsibility. I'm also an Associate Clinical Professor of Psychiatry at East Tennessee State University.

PSR [Physicians for Social Responsibility] got its start in the 1980s in the Cold War with the escalation of armaments in the Cold War. And the key message that PSR had was there is no medical response to nuclear war. Equally there's no medical response to a catastrophic nuclear event.

Additionally, I want to address the points of ionizing radiation, the potential risks of

catastrophic events and the potential pressures upon the Board and management and the community that can influence decision making.

Starting with ionizing radiation, one of the people that have impressed me the most in my life is a woman named Alice Stewart, a physician. She's passed away. And she determined that radiation exposure to fetuses in the womb causes an increase in childhood leukemias. And she had to fight for 10 years or more in the '50s in order to have medicine limit x-rays to women.

The similarity here is that workers are exposed -- and the community in such facilities are exposed to ionizing radiation. There is going to be increased malignancies to the workers. There is going to be ways that this is dealt with. We've all heard the anecdotes of turning off those dosimeter badges.

So I just want to stress that that's a medical issue that there will be increased malignancies in a community, and how many malignancies are too many?

Catastrophic events. We live in a terrorist age unfortunately. Terrorism is a potential reality. We all got a bit of a wake-up

call with a feeble, elderly nun and two other people breaking into the center of the Y-12 plant. Security is never 100%.

I was glad to hear the comments today of Mr. Raines where he talked about a thorough systems approach that has checks and continued checks on an ongoing basis. And with these sort of risks of catastrophe, those sort of systems are needed.

The third issue is the pressures upon everybody in the system. We've seen the crazy situation in Toronto with a Mayor with alcohol and drug problems. And we've all seen clearly what denial is in listening to that mayor. He clearly has a problem with alcohol or drugs and repeatedly says, I have no problem. I have no problem.

Similarly, we know that ionizing radiation can cause malignancies. We know that we're that in an age of terrorism. Are we sweeping those things under the rug? I would raise the question.

There's also an issue of confusion I would say. We are no longer in a Cold War. The UPF very much impresses me as being a Cold War type of project. So what I'm driving at is that to some of us it's confusing why in the world are we proceeding with a Cold War project?

And my argument is that can influence -- it can influence management, it can influence the Board, it can influence the community, that sort of confusing issue of proceeding with something that's more from a different era.

CHAIRMAN WINOKUR: Would you be able to summarize your comments in another minute or two, please.

DR. CLARK: Yes, certainly.

In summary, recognizing that denial is a powerful mechanism, that we all use it, and that we need to stay vigilant of key things in dealing with this project. We need to minimize denial. We need to stay fully cognizant of the terrorist threat and how that's going to be dealt with. We need to look at the underground versus aboveground issue and be very careful that it's not budget and economics that's driving that important decision.

And I think it's important -- and I'm very appreciative of continued input from the public on these important issues.

Thank you.

CHAIRMAN WINOKUR: Thank you, Dr. Clark.

Ralph Hutchinson.

MR. HUTCHINSON: Chairman Winokur and Vice

Chair Roberson, members of the Board, thank you for coming to Knoxville. I imagine it would have been easier to summon everyone to DC to talk, but you made the effort to come here, modeling the best kind of government that is open and transparent and accessible to the public. And that's something we don't experience everyday here from the federal government in East Tennessee.

My name is Ralph Hutchinson. I'm the coordinator of the Oak Ridge Environmental Peace Alliance, a nonprofit, grassroots, public interest group.

Of the many speakers you will here today we are among those who have no financial interest in the UPF or the ongoing activities at Y-12 except of course for the fact that we're paying for it with taxes, and we recognize that money dedicated to a new weapons facility is money not spent is money not spent on education, healthcare, housing, or other social needs in Tennessee.

But you're here to talk about safety. I have two concerns and three requests. The first request is please maintain your vigorous oversight of this project. The word on the street, as several of you alluded to, the CAPE report -- word on the street

is the 19 billion-dollar cost estimate for the UPF makes the project untenable at this price and on this schedule.

It might be tempting to step back and wait and see what comes next. I think it's time instead to press even harder for safety integration into the design of the UPF. If they're going to have to refigure this thing from the ground up, which seems likely, they have a chance to avoid the billion-dollar mistake they made last time.

If there were any lessons learned, I hope chief among them was the need to listen to the Safety Board from the start.

First concern. The astonishing new cost and schedule estimates will increase pressures to cut corners, to speed things up and hold costs down. Safety cannot be sacrificed on the altar of fiscal constraints. I expect that you agree with me on that.

I just want to underscore that from the public standpoint you are the only guarantor of safety that we can count on. Everyone else is trapped with competing interests.

Second request. I would respectfully request that you expand the scope of your safety

concerns to judiciously but necessarily address the fundamental question of the aboveground design of the Enriched Uranium Processing facility.

It has been clear since the DOE Inspector General said it in 2004 about the HEUMF and since the project on government oversight said it in 2006 about the HEUMF and the UPF, and I believe the oversight task force said it in 2005, it's been even more clear since the Transform Now Plowshares action gave us a real world glimpse into what was possible. An aboveground facility represents a compromise on security at the very point where security and safety meet.

In fact, those assessments in the middle of the last decade noted that below grade facilities would be safer and in addition they would be less expensive.

So when the UPF goes back to the drawing board, we need to emerge with a smaller facility with a limited capacity for production to be a passive curatorship of the nuclear stockpile, not to produce new weapons, and a facility that is as safe as it can possibly be. That will not be true if it's built aboveground.

Here in the Tennessee Valley we find it

hard to talk about the unthinkable thing in Oak Ridge, but our silence should not be read as an acceptance of avoidable risks. We're the Volunteer State; we're not the guinea pig state. We're not volunteering to be sacrificial lambs.

Second concern and last request. The Building 9212 complex is a mystery to the public shrouded under a veil of secrecy that is convenient but not completely necessary. We've learned things here this morning. Thank you for coming to talk about this in public.

Since 2001 when I heard the President of B&W Y-12 say that Building 9212 was being operated in run-to-failure mode, I've been concerned about the state of the facilities.

And over the years we've heard officials declare the plant was on its last legs and estimate that it could not operate safely beyond 2018. We've read that the facility could be brought up to code for several hundred thousand dollars. We've seen a few pictures of electrical and plumbing systems showing their age.

And meanwhile tens of millions of dollars are spent on upgrades each year and new equipment is being installed. That is to me a cloudy picture of a

Jeckyll-and-Hyde plant, one minute a looming catastrophe and the next safe enough to operate.

This community, those of us who live downwind and downstream from Y-12, have a right to know how safe we are or are not. We need an audit, a public inventory, of the status of the 9212 complex. We need an answer to the question that several speakers and a number of you identified this morning as very difficult, when does it become too unsafe to operate?

We will not take the word of management who put safety concerns in competition with schedules and cost estimates. I'm requesting the Safety board today to take the necessary steps to initiate a detailed bottom-to-top safety audit with publicly available results.

Thank you for your patience, and I will look forward to discussing any of these concerns with you at your convenience.

One other thing. I will also insert in the record, and I gave to your staff this letter from the Alliance for Nuclear Accountability signed by 13 groups, which represent thousands of people across the country who underscore our request for consideration of the Uranium Processing Facility as

it be low grade or an underground facility in the interest of maximum safety.

Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Hutchinson. We will enter your letter into the record.

Marcus Keyes.

MR. KEYES: Good morning, everyone. My name is Marcus Keyes, and I live with my wife Glenda in Washburn, Tennessee. I'm a member of the Oak Ridge Environmental Peace Alliance, and while speaking as such a member, I'm also speaking on behalf of my wife and myself, but I also dare to speak on behalf of other members of our community, and even those members of the community that cannot speak for themselves. And that is nature.

I thank you, the Defense Nuclear Facilities Safety Board, for scheduling this public hearing here in Knoxville today. It is a wonderful opportunity for all of us to listen and to speak our thoughts and our feelings.

At the outset I wish to say that I recognize and appreciate that the Safety Board is the agency that tries its best to ensure the safety of the public as it pertains to nuclear facilities and

particularly for us as it pertains to the existing buildings at Y-12 as well as the proposed new Uranium Processing Facility.

I have no doubt that you have been and will continue to fulfill your mission and ensure that the public's right to safety will be safeguarded as you consider the safety elements that need to be part of the proposed new UPF and the existing buildings in the complex at Oak Ridge, Tennessee.

Concerning the building of the UPF, I ask that you demand that all the necessary safety elements are built into the design from the get-go, not added here and there, not thought about, Well, maybe we should do this and then added. Before anything is confirmed or agreed on by you, everything must be on paper at the get-go, not later.

And neither can you even momentarily entertain for whatever reason that may be proffered to you anything that would compromise the safety of the public, the workers, and of course your own integrity as a Board, which I acknowledge here again.

To be true to your mission all safety elements I think must be clearly integrated into the design from the beginning. Only then can you as a Board, a Safety Board, consider approval or

disapproval of these elements, and it must be to your total satisfaction before the first site is ever even thought about in the process of constructing the UPF.

I understand from my experience, and it's pretty long, nearly -- in connection with the body not being okay after the age of 75. That's my age. And I said, Oh, that's about pretty accurate as far as I'm concerned.

But I do understand from my experience that many pressures will be laid upon you from various individuals, from various groups, and various circumstances, including as I've heard this morning, the rising cost element, which to the dismay of many has reached 19 billion dollars to this date.

And Senator Alexander, who spoke a lot about the initial rise of the costs, must be in shock and that may explain why he has said nothing, has made no comment on this in recent times.

I'm sure that you -- rather I'm expecting that you will ensure that if anything is to be cut because of lack of financial resources, it cannot be the safety elements. The safety of the public and the workers cannot be put at risk to any degree.

And we remember Murphy's Law, and I have my own car story. I had a car, a Camry -- I should get

money for this from Toyota -- up to 298,000 miles. I bought a new Prius. I sold my old car at the price I was offered as a trade-in to a friend. He took it, collected the car, and the transmission broke down like that. Things happen. The UPF is a more important thing than a car.

The current design, which is an aboveground design, makes it very vulnerable to attack in my mind. This is not just a security issue. This is primarily a safety issue. The UPF must be so designed for maximum security that it will ensure maximum safety for the public.

It is a surprise to me that the UPF is not an underground construction like so many other military and quasi-military facilities in the country. As it is designed, it is a sitting duck to be attacked by even a few people who do not live -- to say the least of it do not live a nonviolent life, open to attack by a few missiles from the ridge -- the ridges overlooking Y-12.

CHAIRMAN WINOKUR: Mr. Keyes, could you try to summarize your comments in the next minute or two.

MR. KEYES: As quickly as possible. I think this is a terrible mistake and makes it easier for people -- to facilitate people who wish to do

harm to this country.

Consequently, I think it is a monumental safety and security mistake and puts our safety, the public's, as well as the workers' safety at risk, a risk that could be easily avoided by an underground construction.

I thank you for your work, and I am hopeful and have no reason to doubt that you will continue to fulfill your mission. Money must be put into assuring the safety of any sensitive construction such as the UPF and the other buildings that were mentioned this morning.

Thank you very much.

CHAIRMAN WINOKUR: Thank you, Mr. Keyes. We will accept your written statement into the record if you wish.

Caroline Best.

MS. BEST: My name is Caroline Best. I'm a member of the Board of the Oak Ridge Environmental Peace Alliance. I have lived in Maryville, Tennessee since my college days over 40 years ago.

I am glad our native son, Senator Lamar Alexander, a esteemed resident of Blount County has had a very positive influence in Blount County and the Great smoky National Park.

In this season of thanksgiving I'm thankful to live a stone's throw from the park. I enjoy the natural beauty of East Tennessee and the opportunities it provides.

I'm also thankful for the work and efforts of the Safety Board to make nuclear facilities as safe as possible. I know that you are a champion of safety. I agree with you that safety must be addressed at every step of the way. Safety must be a part of the UPF design from the very start and not an afterthought.

My concern is for the safety and security of this area. The Great Smoky National Park is within 50 miles of the planned UPF and the current Building 9212. The public has a right and a need to know the safety issues related to the continued use of Building 9212.

If the building of the UPF is absolutely critical because existing facilities cannot continue to operate safely, then what is being done? Is our safety being compromised at this moment with the current production of nuclear weapons?

The Safety Board and the NNSA should identify the point at which safety concerns take precedence over production mandates. We need to stop

short of that point before a catastrophic event, not after.

Even though the risks are officially downplayed and much information remains hidden from the public eye, I am aware that Y-12 presents significant dangers to the public. Yes, I am concerned about the land but even more concerned for the people. Our children and grandchildren live, work, and play here in the beauty of the mountains and the Y-12 nuclear production facilities.

That is why your work is so important, and I want to thank you again for it. Thank you.

CHAIRMAN WINOKUR: Thank you, Ms. Best.

Erik Johnson.

MR. JOHNSON: I wish I could get closer to you, invite you around my kitchen table where a lot of pressing and urgent issues are unfolding at the beginning of the day and at day's end.

My name is Erik Johnson. I live in Maryville, Tennessee with my wife Libby. We have five grown children and four grandchildren.

For more than a quarter of a century I have been an active participant in the Oak Ridge Environmental Peace Alliance, OREPA, a nonviolent community that seeks a world of peace where all life

is revered and safeguarded.

Thank you for this opportunity to share some thoughts arising from questions concerning the safety of the facilities at the Oak Ridge Y-12 National Security Complex, primarily the planned construction of the Uranium Processing Facility, the UPF.

One of the most difficult lesson to be learned at this juncture in the ongoing operation of Y-12 and the efforts to build the UPF is that it is not easy to be hopeful. It is not easy to find a way out of dangerous operating conditions in aging facilities like Building 9212, and a whole list of safety concerns that are woefully ignored by the National Nuclear Security Agency and contractors over the years.

It is not an easy task to determine safety concerns when the process is complicated by rivalry between competing contractors and agencies all the while the list of safety concerns grow unchecked.

And yet, you are here today, and for that I am grateful and I am hopeful because yours is the responsibility to discern the real safety problems and challenges that exist at the Y-12 nuclear weapon complex.

There is no arguing the fact that there have been shortcomings in security and safety at Y-12 over the years and most recently the nonviolent fateful action of July 28th, 2012, by the Transform Now Plowshare peace advocates, Sister Meegan Rice, Gregory Boertje-Obed, and Michael Walli.

But these security concerns are centered in safety. They made a pilgrimage to Oak Ridge to the walls of the Highly Enriched Uranium Manufacturing Facility and these are problems that are created by the managers of the Y-12 themselves. One must be aware of the assumptive language of progress by the NNSA and contractors fostering the fantasy that ever increasingly we are safer; trust us.

The fortification of the planned UPF, for example, is lacking all semblance of safety. Building aboveground with minimum protection from external threats has a frighteningly real potential for catastrophic results.

I believe that you, the Members of the Safety Board, must address the vulnerability of UPF to attacks. Safety must be integrated into the design of the UPF from the beginning and not retrofitted into the plan as we prepare to face the future with misleading promises of safety and

security; all the while the UPF as designed now poses significant dangers to East Tennessee and the remainder of humanity as well as nonhuman life near and far.

Bold steps are needed now. There's never been a time like this. Our nation can carry great weight and influence in other nations, other nuclear weapons nations, towards establishing the highest standards of safety by putting into practice the changes needed to guarantee safety here at Oak Ridge Y-12 and at other departments of energy nuclear facilities.

I look to your efforts in using the weight of your mission to report to Congress wise steps that need to be taken immediately to assure safety at the Oak Ridge Y-12 National Security Complex, including the proposed UPF.

In conclusion, I thank you for listening. I commend to you OREPA's Coordinator, Ralph Hutchinson, who you just heard from, to fill in with expansive wisdom and much needed insight that he possesses, the vast thoughts of safety concerns that I did not address here. I am convinced that a dialogue with him would greatly benefit your work. He speaks the voice of those who want to be listened

to in East Tennessee.

There has never been a time like this. Indeed, as closing, I submit this report in the name of Sister Meegan Rice, Michael Walli, and Gregory Boertje-Obed, Transform Now Plowshare Peace Activists.

Thank you very much for listening.

CHAIRMAN WINOKUR: Thank you, Mr. Johnson.

Robert Howarth.

MR. HOWARTH: Good afternoon. Is this coming through okay?

CHAIRMAN WINOKUR: Yes, it is.

MR. HOWARTH: I'm Robert Howarth. I'm from Asheville, North Carolina. I hold a Master's degree in Engineering. I'm a member of the Western North Carolina Physicians for Social Responsibility and also a member of the Union of Concerned Scientists.

I would like to thank you, the Board, for opening this hearing to public input. The groups I belong to are very concerned about the health, the safety and security effects and aftereffects of the nuclear activities in our country and potential impacts on our environment and humanity worldwide.

I endorse the comments of Dr. Clark and of Mr. Hutchinson.

I was favorably impressed by this morning's discussion of various tradeoffs and cooperation and the efforts between safety and security costs and citizen and civilian health dangers. I thought they were good discussions.

These tradeoffs, some are known and some are new, could greatly influence the aftereffects of human blunders or mistakes. These are low probability events, but they can and do occur.

These tradeoffs -- and another low probability which could occur is the previously mentioned terrorist attacks or sabotage. So any tradeoffs could have great effects on these low probability events and long-term mortality of workers and general population.

I encourage you at the DNFSB Board to assiduously continue to champion and safeguard the safety, security, and civilian health effects and aftereffects from nuclear activities.

This taxpaying citizen seriously doubts the efficacy of reviving MAD, Mutually Assured Destruction, now with potentially six challengers, North Korea, Pakistan, Russia, China, India, Israel with Iran waiting in the wings perhaps. This can be a recipe for disaster, a house of cards perilously

close to collapse.

Build-down nuclear is the only remedy in the long run that can increase our long-term security and safety although I realize this is beyond your scope.

I encourage you to continue your work as champions of safety and security with confidence and integrity.

Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Howarth.

Ron Woody.

MR. WOODY: Mr. Chairman and Board, I'm Ron Woody, County Executive of Roane County, and I've sat here this morning and heard a lot of comments, and I appreciate your-alls hearing our comments and what you mean for the safety of our nation.

I spoke last year briefly, and I think I entered a letter into the record last year. And as you mentioned, I've entered this letter. So I will not read through it other than make to make a few comments.

As has been said here, and we all know, we have a 70-year-old facility, and our facility is aging. I tell people when they ask me what UPF is, I say it's the rebuild of Y-12. And it's something

that is important for our nation and important for our community.

As the County Executive of Roane County, I realize and recognize that we have thousands of workers in our county and surrounding counties that receive employment and the Y-12 facility is a catalyst for economic growth.

However, the real advantage for the UPF project at the Y-12 complex is that our workforce is educated, our workforce is trained, and our workforce has experience at this old, aging Y-12 complex. And with that they'll have a unique understanding of the new UPF operations.

This letter is my support. It's also the support of the county that I represent, Roane County. We have gone on record in the past supporting this project. We are an adjacent county. We're also the home of the Oak Ridge National Lab. We're the home of the old K25 facility.

We work with the Department of Energy. We work with other elected officials in our communities to make sure we have a safe environment and we also have a workforce that is important to the mission of our nation.

Again, Ron Woody, Roane County. We support

the UPF project. We would like to see replacement of this 70-year-old facility.

And I guess I'm standing between you-all lunch so I'll dispense with my comments at this time.

Thank you.

CHAIRMAN WINOKUR: Thank you, Mr. Woody.

Anne Garland.

MS. GARLAND: Thank you, sir. I am Anne Garcia-Garland. I am an elected council member for the City of Oak Ridge, and I want to thank you all for your role here today.

Given the extreme seriousness of the issues that are discussed here today, my question -- my invitation may seem trivial. It is, however, precisely because today's issues are vitally important to my community that I need to respectfully invite the DNFSB to choose an Oak Ridge facility for future hearings -- as a site for future hearings of this Board.

The attendance here is even smaller than I expected. The facilities being discussed are wholly within the boundaries of the City of Oak Ridge, and the people of Oak Ridge continue to be very proud to host these critical facilities.

We've experienced strong confidence in the

leadership of John Eschenberg. Some of us, however, feel that our city's image and well-being are not -- while not disregarded but under-regarded by those who oversee one of Oak Ridge's largest local industries.

We'd feel better regarded if the Board would hold these hearings in Oak Ridge. And if we in Oak Ridge are somehow responsible for you not meeting there, we would be grateful to hear what our deficiencies are.

We do want to thank the Board for its diligence and its openness.

CHAIRMAN WINOKUR: Thank you, Ms. Garland.

Marty Gray.

Is Mr. Gray present? I don't see him right now, so I want to thank all of the members of the public who have commented today.

Are there any other members of the public who wish to speak on the topic of the Y-12 aging infrastructure or the Uranium Processing Facility?

Seeing none, at this time the Chair calls a recess of this public meeting and hearing. We will reconvene at two p.m.

Thank you.

(A recess was taken until 2:00 p.m.)

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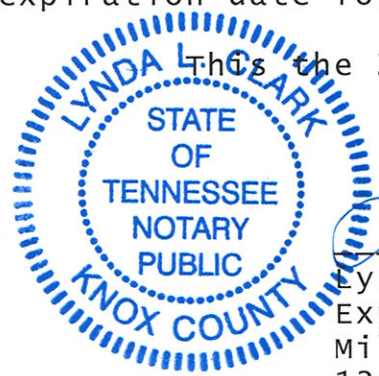

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