TRANSCRIPT OF PROCEEDINGS

In the matter of:

PUBLIC MEETING

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(202) 628-4888
contracts@hrccourtreporters.com

THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

In the matter of:

PUBLIC MEETING

Knoxville Convention Center
701 Henley Street
Knoxville, Tennessee

Tuesday,
October 2, 2012

The meeting in the above-entitled matter convened, pursuant to notice, at 1:00 p.m.

APPEARANCES:

Board Members:

Dr. Peter S. Winokur, Chairman
Ms. Jessie H. Roberson, Vice Chairman
Dr. John E. Mansfield, Board Member
Mr. Joseph F. Bader, Board Member
Mr. Sean Sullivan, Board Member

Staff:

Mr. Timothy J. Dwyer, Technical Director
Mr. Joel R. Schapira, Deputy General Counsel
Mr. Steven Stokes, Group Lead
Nuclear Facilities Design & Infrastructure

APPEARANCES: (Cont'd)

Also Present:

Dr. Donald Cook, NNSA Deputy Administrator
For Defense Programs
Mr. Robert Raines, NNSA Associate Administrator
for Acquisition and Project Management
Mr. John Eschenberg, UPF Federal Project Director
Mr. Steven Erhart, NNSA Production Office Manager
Ms. Teresa Robbins, UPF Deputy Federal Project
Director
Mr. James Haynes, B&W Y-12 Deputy General Manager
For Projects
Mr. Mark Seely, B&W Y-12 UPF Project Director
Mr. John Gertsen, B&W Y-12 Vice President for
UPF Programs
Mr. Kevin Kimball, B&W Y-12 UPF Safety Analysis
Engineering Manager
Mr. Brant Morowski, B&W Y-12 UPF Engineering
Manager

P R O C E E D I N G S

(1:00 p.m.)

CHAIRMAN WINOKUR: Good afternoon. 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'd like to introduce my colleagues on the Safety Board.

To my immediate right is Ms. Jessie Roberson, the Board's Vice Chairman. To her right is Mr. Sean Sullivan. To my immediate left is Dr. John Mansfield. Next to him is Mr. Joseph Bader. We five constitute the Board.

The Board's General Counsel's office is represented by Mr. Rick Schapira, seated to my far left. The Board's Technical Director, Mr. Timothy Dwyer, is seated to my far right.

Several members of the Board's staff closely involved with oversight of 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 15 and September 7, 2012. 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, D.C. 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 4:30 p.m. this afternoon.

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

There is also a table at the entrance to

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

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

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

The record of this proceeding will remain open until November 2, 2012.

I would like to reiterate 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 the Board's authority for inquiring into the matters that are the

subject of this public meeting and hearing. 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. One section of this defines the Board's role in the review of facility design and construction. [Quote] "The Board shall review the design of a new Department of Energy defense nuclear facility before construction of such facility begins and shall recommend to the Secretary, within a reasonable time, such modifications of the design as the Board considers necessary to ensure adequate protection of the public health and safety. During the construction of any such facility, the Board shall periodically review and monitor the construction and shall submit to the Secretary, within a reasonable time, such recommendations relating to the construction of that facility as the Board considers necessary to ensure adequate protection of public health and safety. An action of the Board, or a failure to act under this paragraph, may not delay or prevent the Secretary of Energy from carrying out the construction of such a facility." [End quote]

This hearing forms a part of the Board's continuing effort to fulfill this statutory charge with respect to the Uranium Processing Facility. The

Uranium Processing Facility, or UPF, is a complex, one-of-a-kind, multi-billion dollar design and construction project whose mission is the secure, safe and efficient processing of enriched uranium to meet ongoing national security needs and improve the nuclear safety posture at Y-12. In this meeting and hearing we will receive testimony from senior officials of the National Nuclear Security Administration, or NNSA, and its contractor, Babcock and Wilcox Technical Services Y-12, or B&W Y-12, regarding the integration of safety into the design of UPF.

With regard to the nuclear safety posture of Y-12, it is widely understood and well documented that the 9212 Complex presents a significant risk to worker and public safety. During the past decade the Board has repeatedly testified before Congress that the 9212 Complex does not meet modern nuclear safety requirements and expectations. More specifically, it is structurally fragile and contains antiquated utility and process systems and equipment. While NNSA has taken positive actions to reduce the inventory of radioactive material in this facility and will replace many of the antiquated systems, the only practical long-term solution to resolve the 9212 Complex's aging

infrastructure issue is to transfer the existing enriched uranium operations to a new facility, which as I've mentioned, has been named the Uranium Processing Facility. The transition to UPF represents a critical activity for NNSA and provides a remarkable opportunity to improve the safety posture across the Y-12 site.

The Board believes the following improvements are most noteworthy if they are fully implemented in the final design: enriched uranium operations will be performed in a modern, well-designed, seismically-qualified structure with multiple layers of protection sufficient to resist the potential damage from a seismic event. The UPF will also include seismically-qualified fire suppression and active confinement ventilation systems, and there will be a greater number of engineered controls designed to prevent criticality accidents. The facility will provide significant protections to workers by conducting operations inside gloveboxes that separate the workers from hazardous chemical and radiological materials. The Board believes that these improvements in support of the Y-12 enriched uranium mission are critical for the safety of workers and members of the public.

Notwithstanding the potential improvements from the transition to UPF, the Board is concerned that NNSA has not yet adequately integrated safety into the design of the Uranium Processing Facility. As documented in our first project letter on UPF in 2007, the Board believed that NNSA's safety strategy at the completion of the conceptual design phase of the project was reasonably conservative. Since 2007 NNSA has changed the UPF safety strategy, and the Board has identified a substantial number of safety issues as the project team developed the UPF safety basis.

The safety basis identifies potential accidents and hazards associated with facility operations and the controls to mitigate or prevent their impact on workers and the public. Of note, safety basis problems were also independently identified by NNSA. In particular, both the Board and NNSA found that the draft Preliminary Safety Design Report, or PSDR, which detailed the project's safety strategy, did not include all of the hazard and accident analyses required to identify a robust and complete set of safety-related controls sufficient to meet existing Department of Energy expectations for a project at this stage of design.

However, NNSA allowed B&W Y-12 to continue advancing the UPF design. Given the deficiencies with the PSDR and the existing gap between the maturity of the design and safety basis, the Board is concerned that the UPF project will likely continue to experience difficulty in meeting DOE's and NNSA's expectations for the early integration of safety into the design.

Adding to the Board's concerns are the potential impacts from several recent management decisions including: (1) the reorganization of the federal office overseeing the project, (2) a major change in the project's scope and execution strategy that defers the integration of key assembly, disassembly, surveillance and machining operations, (3) the redesign of the UPF structure and some process systems in response to equipment spacing and fit issues, and (4) the development and use of new technology in the facility that is not fully mature at this time. During this hearing, the Board will ask NNSA and B&W Y-12 managers to provide their perspective on these challenges.

The Board has also learned from experience during its review of the design of the Waste Treatment and Immobilization Plant at the Hanford site that

significant impacts to cost and schedule can result from delayed or inadequate resolution of safety issues on a large, complex nuclear project. The Board and its staff have actively monitored NNSA's integration of safety in the design of UPF with the goal of preventing these types of impacts, and consistent with its legislative mandate, the Board will continue to ensure that protection of the public and worker health and safety is adequately addressed.

As a reminder, the Board had originally planned to conduct a two-session public meeting, and has postponed the hearing session concerning nuclear operations at existing Y-12 defense nuclear facilities, the effectiveness of the National Nuclear Security Administration's oversight for these activities, and the status of site-wide emergency preparedness. That session will be rescheduled as a separate open meeting and hearing at a time and place to be determined at a later date. This concludes my opening remarks. I will now turn to the Board members for their opening remarks. Ms. Roberson?

VICE CHAIRMAN ROBERSON: Nothing.

CHAIRMAN WINOKUR: Dr. Mansfield?

DR. MANSFIELD: Nothing at this time.

CHAIRMAN WINOKUR: Mr. Bader?

MR. BADER: No remarks at this time, Mr. Chairman.

CHAIRMAN WINOKUR: Mr. Sullivan?

MR. SULLIVAN: No remarks. Thank you.

CHAIRMAN WINOKUR: This concludes the Board's opening remarks. At this time I would like to invite Mr. John Eschenberg, the UPF Federal Project Director, to the witness table to provide a statement on behalf of the NNSA. Mr. Eschenberg, welcome.

MR. ESCHENBERG: Mr. Chairman, Madam Vice Chairman, Members of the Board, good afternoon. My name is John Eschenberg. I am the Federal Project Director for the Uranium Processing Facility at the Y-12 National Security complex.

Thank you for this opportunity for the NNSA and ourr contractor, B&W Y-12, to meet with you to discuss these critical issues as we move forward in building the new Uranium Processing Facility for our nation. We believe this project is the critical next step in modernization of the Y-12 National Security Complex and our Uranium Center of Excellence, a critical step that must be conducted in a disciplined and rigorous manner, while being open and transparent.

I particularly want to thank you for convening this public hearing just minutes away from

the nation's original and existing Uranium Processing Facilities at the Y-12 site in Oak Ridge, Tennessee. We strongly regard the Board's mission and share the common goal of ensuring the protection of the public, the worker, health and safety and the environment at defense nuclear facilities.

Ironically enough, it was 70 years ago almost to this very day that General Leslie Groves made the decision to locate the first processing plant of the Manhattan Project here in Eastern Tennessee. This historic decision was made just two days after General Groves was given the assignment to head the Manhattan Project.

Oak Ridge and the facilities that were built there were born with that decision, a decision that aided our nation in ending a terrible war just three years later in 1945, and in many more ways over the following decades.

Today, some 70 years later, as we embark on one of the most important projects for the Department since that time, building our modern Uranium Processing Facility, a facility that's urgently needed to maintain our nation's national security posture.

This modernization effort will accelerate the transition out of original World War II era

facilities, most notably Building 9212. It has served as America's uranium processing hub for nearly 70 years. Our suite of uranium processing capabilities is nearing the end of its useful life and simply we cannot meet the nation's future critical nuclear security needs with these facilities.

The consensus is clear. We must build a Uranium Processing Facility to ensure our nation's nuclear deterrent, to fuel our Navy's submarines and aircraft carriers, and to continue our commitment to dismantle and reprocess nuclear materials from old nuclear weapons for use today in peacetime missions, such as fueling our next generation commercial power reactors or in research reactors for medical isotope production, to aid in the treatment and fight against cancer and other life-threatening illnesses.

The Department has greatly improved its performance in managing and delivering large first-of-a-kind projects. It is fair to acknowledge that we, that is both the Department and our contractors, have learned many tough lessons over the last decade in managing these pioneering projects. The Uranium Processing Facility Project is our opportunity to put these tough lessons into application, and that's just what we're doing. We are fully committed to these

foundational tenants, and I'd like to talk through some of them for you.

Our most basic tenant, we have employed a safety-in-design precept, whereby appropriate and conservative safety structures systems and components are selected early in design. Using this precept we have developed a robust Safety Design Strategy that is used by our designers, safety analysis development teams, and integrated project teams to ensure that safety is integrated into design early in the design process. The goal is to minimize the potential for costly changes in later phases of the project.

Our Safety Design Strategy is updated throughout the design process as necessary. The depth and breadth of the information has improved as the project has advanced from conceptual to preliminary design, and it will continue to advance as needed through to final design.

As the design matures the safety analysis will become more precise in its identification of the necessary controls and programs, to ensure an adequate level of safety to protect the workers, the public and the environment.

We will have upfront and robust funding with an aggressive allowance for project contingency. We

have put into place a comprehensive program to mature the application of process technologies through design, development and deployment, using scaled, and proto-typical fullscale equipment. We will have sufficiently matured and detailed design before establishing the project's cost and schedule baseline.

Now, within these foundational tenants we have experienced challenges. In particular, our early approach to project management and combination of critical decisions points (CD-2/3) led us to stop work on the Preliminary Safety Design Report (PSDR) and begin developing a separate Preliminary Documented Safety Analysis. We later revisited that decision and returned to developing the required Preliminary Safety Design Report, ultimately delaying its initial submission by one year.

We did not do a good job of developing a credible schedule of safety basis deliverables that was well integrated into the project's design and engineering efforts. We did not have sufficient staff with the requisite skill sets in conducting safety analysis, working with individual design teams. Our initial effort to develop a comprehensive Preliminary Safety Design Report created a situation where unnecessary gaps were created between the safety

analysis and the overall maturity of the design. Since we have strengthened the project team's leadership, we have developed an integrated project schedule that integrates both safety and design deliverables, and we are improving not only the federal oversight but also the leadership within the contractor's team.

In keeping with our most basic tenant to be protective of safety and health and the environment, early in the calendar year we elected to prioritize the installation of the Building 9212 operations over the others. This decision was made as Building 9212 represents the greatest risk to our workers and the greatest risk to our program. This shift in focus, although it reduces the detailed design burden, has impacted our ability to advance the overall design.

And, we have identified a space management and fit issue that has necessitated structural modifications and several internal reconfigurations to ensure the areas designated for process equipment and our ability to operate and maintain them are sufficient.

These circumstances have created the need to re-plan the remaining design and engineering effort and that will likely extend the timeline to

sufficiently mature design before establishing a credible project baseline. The contractor is scheduled to deliver the full engineering re-plan to the Department in mid-fall. This extension of engineering efforts will enable the safety basis to further synchronize with the design basis, closing all but the smallest of anticipated gaps. NNSA is planning a comprehensive review of the engineering re-plan and the factors that led to its necessity.

Design challenges like these, although undesirable, are manageable provided we stay true to our foundational tenants, thereby assuring integration of safety into the design.

The NNSA remains fully committed to executing the project soundly and in a deliberate manner. Again, the Uranium Processing Facility Project is our opportunity to put these tough lessons into application, and that is just what we are doing.

We are committed to accelerating the move out of these original World War II facilities and into a new Uranium Processing Facility that is robust, modern, safe, secure, and designed to meet our country's uranium processing needs for the next century.

Thank you for this opportunity and I look

forward to your questions.

CHAIRMAN WINOKUR: Thank you, Mr. Eschenberg. We'll be asking you to join our first panel in a couple of minutes, but right now I'm going to introduce Mr. Stokes. Mr. Stokes is the Board's Group Lead for Nuclear Facilities Design and Infrastructure. He's going to briefly discuss the staff's safety-related concerns regarding the UPF project to set the stage for this hearing's panel discussions. Mr. Stokes, please proceed with your statement.

MR. STOKES: Good afternoon, Mr. Chairman and Members of the Board. For the record, my name is Steven Stokes, and I am the Board's Lead for the Nuclear Facilities Design and Infrastructure Group. I am responsible for those members of the Board's staff who conduct reviews of the Department of Energy's design and construction projects.

In this testimony I will address issues regarding the early integration of safety into the Uranium Processing Facility, or UPF design, the UPF Federal oversight strategy and capability, and safety-related risks associated with the project's execution strategy.

The UPF is the centerpiece of the National

Nuclear Security Administration's (NNSA) plan to consolidate enriched uranium processing and manufacturing operations at the Y-12 National Security Complex into a safe, modern and secure facility that minimizes the risk of operating Y-12's aging infrastructure. Given the importance of the UPF, the Board has actively reviewed the UPF design since 2005.

In December 2005, the Board began a series of public meetings and hearings on the integration of safety into design. In the 2005 hearing the NNSA presented testimony acknowledging the need to maintain vigilant oversight of the UPF project. In early 2006 the Board began to jointly review the UPF project with DOE and NNSA. This effort ultimately resulted in DOE issuing DOE Standard 1189, *Integration of Safety into the Design Process*, which met the Deputy Secretary of Energy's expectation that "safety be fully integrated into the design early in projects."

Following the Board's third public meeting in March 2007 the Board had seen encouraging signs that the UPF project was integrating safety early into the UPF design. On August 9, 2007 the Board issued its initial project letter outlining observations on the UPF project's effort to integrate safety early into design. The project letter highlighted six

issues the Board expected NNSA to resolve within the following six to nine months; one of these issues remains open today (federal staffing). In 2010 the Board provided NNSA with a letter describing safety issues related to the structural design, and in April of 2012 the Board provided NNSA with a second UPF project letter, which describes the Board's current concerns with the UPF project.

It is worth reviewing the history of this project to fully understand the origin of the Board's current concerns. As a part of the UPF project execution strategy, adopted after the Board's 2007 project letter, NNSA tailored the critical decision structure and combined Critical Decisions two and three (CD-2 and 3). This change put the integration of safety early into the UPF design at risk. Also, NNSA canceled the development of the Preliminary Safety Design Report (PSDR). This document is a prerequisite for critical decision two and is needed to demonstrate that safety is integrated into the preliminary design. After discussions with the Board regarding these risks, NNSA reversed its decision and directed the UPF project team to prepare a PSDR.

In late 2011 the UPF project completed a PSDR and submitted it for NNSA review. NNSA's review

identified more than 100 significant comments. NNSA directed the UPF project to resubmit the PSDR after addressing these comments. The Board performed an independent review of the PSDR and found similar issues; these issues were summarized in the Board's April 2012 project letter. The Board's most significant conclusion was that safety had not been adequately integrated into the UPF design. The Board's conclusion was based on the following deficiencies: the need to identify a post-seismic confinement strategy; the need for a thorough evaluation of unmitigated hazard and accident scenarios; the need to identify safety-related controls to protect the public from small fires; and the need to calculate reasonably conservative radiological dose consequences for accident scenarios that may require consideration of safety-class controls.

In addition to the concerns about the integration of safety into the design already discussed, the UPF project has significant safety-related risks associated with its project execution strategy. The Deputy Secretary of Energy approved the latest project execution plan on June 8, 2012. Although this plan no longer combines Critical

Decisions two and three (CD-2 and 3) for the start of UPF building construction, it still combines several other critical decisions. The plan also contains execution strategies that concern the staff, which include deferring portions of the original project scope and project phasing. These new strategies introduce safety-related risks that will challenge the project's ability to integrate safety into design. When other DOE project teams have attempted similar, complex execution strategies, they have had little or no success. The most notable example is DOE's Waste Treatment and Immobilization Plant (WTP) at the Hanford Site. In the WTP project DOE chose a strategy that allowed construction to begin prior to completing design. This magnified the impacts on the project's cost and schedule when safety-related issues were discovered late in the design process. In the UPF project NNSA has decided to defer scope for key manufacturing and machining operations and will add them back to UPF sometime after it is built. This is similar to the WTP decision to begin construction before completion of design.

The staff also believes that one of the most significant risks for the UPF project is NNSA's complex federal oversight model, which involves the

integration of multiple NNSA organizations. The staff has observed for most major projects, particularly projects of similar size and complexity, that a single organization is responsible for design and construction. In contrast, NNSA divided management roles and responsibilities for UPF among three NNSA organizational elements.

The Deputy Administrator for Defense Programs is responsible from project initiation up to and including reaching Critical Decision two (CD-2). The NNSA Associate Administrator for Acquisition and Project Management is responsible thereafter. The project execution plan does not describe how the handoff between these two organizations will occur for combined critical decisions like the combined Critical Decision two and three (CD-2 and 3) for deferred scope.

Additionally, the NNSA Production Office Manager will approve the UPF project's Authorization Basis. The Production Office Manager reports to the NNSA Associate Administrator for Infrastructure and Operations.

This complex arrangement will need to function effectively many years into the future and will be responsible for implementing the UPF project's

phased critical decision approach.

Complicating this picture further, staffing shortfalls in federal oversight are longstanding; they were first identified by the Board in its August 2007 project letter. This is a disturbing situation for a project like the UPF. Federal oversight shortfalls can directly impact the depth and breadth of safety-related oversight. The Board's staff believes federal staffing shortfalls contributed to the current problems with the integration of safety early into the UPF design. This concern is not a criticism of the dedication or capability of the federal staff currently assigned; it is the recognition that the number of staff dedicated to oversight is considerably less than typically observed for a large, complex project like the UPF.

The staff is also concerned with the apparent gap between the design and the safety basis. The UPF project is well into final design, but does not have a safety basis of equal maturity. Gaps between safety and design late in a project often impact project cost and schedule, particularly for a large, one-of-a-kind nuclear project. An example is the UPF project's so-called space-fit issue. NNSA recently informed the Board that the UPF design did

not provide adequate physical space for all the processing equipment in the project's baseline.

The UPF project team has developed a plan to correct this issue and accommodate the baseline processes, but it requires re-designing the UPF structure. This redesign of UPF as it neared final design is a serious undertaking with the potential for significant impacts on public and worker safety. In at least one instance, the redesign will remove a glovebox originally designed as an engineered control for the protection of facility workers. Clearly, the late discovery of the space-fit issue will impact the project more than if the issue had been discovered earlier. Until the UPF project team resolves all of the safety-related issues and narrows the gap between design and safety, the project will be at risk of future cost, schedule and safety impacts.

The Board's staff is also concerned with the potential for future safety-related issues given NNSA's decision to defer a portion of scope of the UPF project. First, deferring scope extends the operational burden on Y-12's aging infrastructure for assembly and machining operations for an additional ten years to 2030, and even this timeframe is not firm. Second, installing new processes after the UPF

is built will be challenging and will have the potential to impact operation of existing safety systems or to introduce new hazards. Lastly, NNSA decided to suspend development of the design and safety bases for deferred capabilities at the preliminary design stage. This decision will increase the risk that facility-level systems, structures and components installed in the first construction phase will not be adequate to address the full suite of UPF hazards after adding the deferred scope capabilities.

Over the past several months the Board's staff has maintained an ongoing dialog with NNSA and the UPF project team to facilitate resolution of the Board's concerns. NNSA and the UPF project team have proposed plans to resolve many of the Board's current safety issues. However, the staff expects considerable time will be required before these plans are fully implemented. In the interim, there is the potential for additional issues to arise, given the existing gap between safety and design, the upcoming redesign of the UPF to address the space-fit issue, the plan to stop design and safety basis development for the deferred scope prior to reaching final design, insufficient federal oversight, and the complicated project execution strategy. This concludes my

remarks.

CHAIRMAN WINOKUR: Do the Board members have any questions for Mr. Stokes? Hearing none, I'd like to thank you, Mr. Stokes.

At this time I would like to invite the first panel of witnesses from the NNSA to take their seats as I introduce them for the topic of this panel session, which is NNSA Oversight of the UPF Project. The panelists are Dr. Donald Cook, NNSA Deputy Administrator for Defense Programs; Mr. Robert Raines, NNSA Associate Administrator for Acquisition and Project Management; Mr. Steven Erhart, NNSA Production Office Manager; Mr. John Eschenberg, UPF Federal Project Director; and Ms. Teresa Robbins, UPF Deputy Federal Project Director.

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.

Does anyone on the panel wish to submit written testimony at this time? Seeing none, with

that we will continue with questions from the Board members to the full panel.

THE REPORTER: Could you please identify the panel members in the order they appear?

CHAIRMAN WINOKUR: I can help you there. The furthest position from you is Ms. Teresa Robbins. Then comes Mr. John Eschenberg, Dr. Donald Cook, Mr. Robert Raines and Mr. Steven Erhart. The Board will begin the questioning with Mr. Bader.

MR. BADER: Dr. Cook, Mr. Raines, Mr. Stokes' testimony outlined the complex nature of the Uranium Processing Facility Project and management structure. Given this complexity, who is responsible for making and sustaining safety decisions through the various sub-project phases of the project?

DR. COOK: If I can take the first part of the question, Mr. Bader, and I'll be happy to turn to Bob Raines in a minute. I am currently accountable for the project as Deputy Administrator for Defense Programs. Then I'm accountable until we make the transition to Critical Decision two (CD-2). You understand the critical decision process associated with major capital projects, and we are now between CD-1 and CD-2. As you've already been informed, the Deputy Secretary approved the CD-1 reaffirmation a few

months back, and we're moving towards CD-2 now as the design progresses.

I will, after we reach CD-2 and for the duration of the project, still represent the programmatic needs for the project and the outputs of the project, but as we're in the process for transitioning now, I'll turn the next part of the answer to Bob Raines.

MR. RAINES: Thank you, Dr. Cook. So in the new construct that we have put into place in the NNSA, this is not a construct that is new to the delivery of large capital assets projects.

The Department of Defense and many private sector companies use a very similar procedure whereby the owner identifies the requirements, is responsible for funding, and as soon as the project reaches critical decision two, where the scope is completed, a budget is established and a schedule is established for delivery, the delivery of the project would be handed off to a design and construction organization to deliver that project to the client. So Dr. Cook will remain engaged, as will the program throughout the project, to make sure that there are no decisions made by my organization that could adversely affect any of the safety basis decisions that were made

before we reached critical decision two.

MR. BADER: Who is in charge when different parts of the sub-project phases are proceeding on different schedules? For example, when the site preparation scope is in construction and other sub-projects are in design?

MR. RAINES: Well, again, each piece would determine where it is in the critical decision stage, so we would start with the early infrastructure work. That will achieve CD-2 before the nuclear facility, and at that point the responsibility for that sub-project would shift to me.

Now, I just want to make sure everybody understands that the day-to-day operations, both at CD-1 and post-CD-2, remains with the Federal Project Director. So at that point in time I would be responsible for ensuring that John has the necessary resources and technical support to deliver that infrastructure work, while we continue with the design work that Dr. Cook is still going to be responsible for on the nuclear facility.

MR. BADER: Is Mr. Eschenberg responsible for integrating the input from you and Dr. Cook at that point?

MR. RAINES: Can you repeat the question? I

didn't hear you, sir.

MR. BADER: Is Mr. Eschenberg responsible at that point for integrating the input from you and from Dr. Cook?

MR. RAINES: Yes, Mr. Eschenberg is responsible for integration to Dr. Cook and I, as the project proceeds.

MR. BADER: Mr. Erhart, are you comfortable with this arrangement?

MR. ERHART: Yes, sir. My role in this as the NNSA Production Office Manager is -- my job and my staff is there to oversee the safe and secure, environmentally sound operations at Y-12 National Security Complex. The safety basis, as was already mentioned, would be under my purview for approval, since it does -- it is a new facility, and we will be linked together throughout the scope of the project, including the approval of the preliminary design safety analysis reports, as well as the final.

So I see this as a business as usual, as far as having a program office that is responsible for execution of the mission, deliverables at the site, and in this case a project office that's responsible for delivery of the project, but we will be involved in all aspects of the design, all the way through

construction and including the startup of the facility when it's ready for mission work.

MR. BADER: Mr. Eschenberg, are you comfortable with this role as the integrator?

MR. ESCHENBERG: Yes, sir, I am, and I might just elaborate for a moment. I think what's important to point out is that much of this relationship -- in fact, all of the relationship and how we're integrated, is codified within the project's execution plan, and we also have the integrated project team charter, so that the roles, the individual roles and responsibilities, and the authorities are well defined.

And what's key to our success and what will be key to our success is communication. And we have a number of venues whereby we communicate, we at the site project team level, we communicate with the senior leadership across all elements of the administrator's organization, including Dr. Cook, Mr. Raines and many, many others, on an every two-to-three week interval, so we are highly communicative, and we do have these roles and responsibilities articulated.

MR. BADER: Thank you.

CHAIRMAN WINOKUR: Let me just make one quick follow-up to make sure I understand. If

something has proceeded to CD-2 it's turned over to Mr. Raines, but if subsequent to that as Federal Project Director you would believe that perhaps safety wasn't adequately integrated into that phase of the project, you would then return with your discussion to Dr. Cook. Is that what's going to happen?

MR. ESCHENBERG: If we were in a situation of impasse, irrespective of whether it related to safety or some other issue, we would -- I would present the issue to either Dr. Cook, Mr. Raines or other senior leaders within the Administrator's organization, on that would then be adjudicated at that level.

CHAIRMAN WINOKUR: Who is primarily interested in the integration of safety and design?

MR. ESCHENBERG: Today it's both Dr. Cook and Mr. Raines.

CHAIRMAN WINOKUR: I didn't think I heard that. Maybe I misunderstood. I didn't think that Mr. Raines had any responsibility for integrated safety and design, but when the project proceeds to CD-2 he's simply executing the design and construction of the project at that point. Did I misunderstand?

MR. ESCHENBERG: No, sir. Between CD-1 and CD-2 there's a shared responsibility between both the

program and the project execution group, so it's a shared responsibility at the phase of the project that we are in today.

DR. COOK: If I could elaborate just a bit on this point, the group that you see before you right now is a team, and so the articulation, both within the project documentation and program documentation and how we're proceeding is who has the lead for what, among this team, as issues come up and as we go on.

So in terms of the formulation of the need for the project, that has been my role as Deputy Administrator for Defense Programs. As a Presidential appointee in that role, I have the obligation to make the case for the budget, to work with those within DOE, within NNSA, Office of Management and Budget, and other partner agencies.

And I'll retain that role to make the case for the output of the project. Once we're into implementation and given the incorporation of safety from the very beginning into the project, then we move to a position where the change for the lead of the team, as we are between critical decision one and critical decision two, moves from basically the mission organization to the implementation organization, which is Bob Raines, as the Associate

Administrator for Acquisition and Project Management, in that role, Mr. John Eschenberg reports to Bob Raines as the Federal Project Director.

On the team the accountability that Mr. Steve Erhart has as the site manager never changes. So if an issue comes back, let's say right to the point, that something -- there was an oversight in the incorporation of safety into a particular design element, rather than pass the ball back around, we meet as a team and determine what the appropriate solution --

CHAIRMAN WINOKUR: Thank you.

DR. COOK: -- for that specific issue is.

CHAIRMAN WINOKUR: Thank you. Mr. Sullivan?

MR. SULLIVAN: Thank you, Mr. Chairman. Mr. Eschenberg, I'd like to direct my initial question to you, and I'd like to ask you to expound a bit on your opening statement with respect to the issue of the federal staffing level, and specifically you said in your opening statement that some of the problems that you have encountered to date on this project are attributed to the fact that you didn't have the right level of staffing with the right skill sets, and now that's being improved, so could you just please expound some on what critical skills were you missing

and what is being done now to improve that?

MR. ESCHENBERG: Thank you for the question. Indeed, at the onset we were not fully staffed. We have taken several actions to improve the numbers of our federal staffing.

Today I will tell you that we have 22 full-time equivalent folks working on this project. We are focused over the next three months on hiring ten critical skill sets, and those would include criticality safety, chemical safety, fire protection, structural engineering, and then into the normal suite of project management expertise that you'd expect brought. Project management experts, scheduling experts and the like, all of these are scheduled to be brought on board before the close of the calendar year.

We have developed a very comprehensive staffing plan that presents where we are today going forward, through the close of the project. And so in a very detailed manner by project phase, by subject matter expert and specialty skill set, we have laid out our comprehensive staffing plan, and that's what we will execute to.

Now, there will always be some puts and takes, because there's some situational management

that's required, but our plan is very solid. It is in place today and we're working towards executing the plan, with a pickup of about ten critical skill sets, skill sets by the close of the fiscal year -- or calendar year, I'm sorry.

MR. SULLIVAN: Okay. So by the close of the calendar year you will be fully staffed, is that correct?

MR. ESCHENBERG: We will be staffed for this -- for where we are in the project phase today. Let me just expand a little bit more, so you'll have an appreciation of the resources that we have at our disposal.

We do have -- in fact, Mr. Erhart and I have agreed -- we've entered into a formal agreement through the management or a memorandum of agreement, where we have shared resources. We have awarded a contract to an engineering and construction management services company. In fact, they're the 15th largest international design firm. We have a contract with them. We also have a local contract that gives us a wide range of opportunity to hire these specialty skill sets.

We talked earlier about our first scope of work dealing with site readiness, as we prepare the

site. That scope of work is going to be executed and managed for us by the United States Army Corps of Engineers. They are federal employees. That does supplement our staff, so all said, I think that one would recognize that we have had a staffing shortcoming. I think we put appropriate tools in place for us to acquire these necessary skill sets. And three, I believe we have a well thought out and deliberate plan on when to bring these skill sets on board.

MR. SULLIVAN: In terms of being able to adequately conduct safety analysis, that skill set will be resident on your staff fully by the end of the calendar year, is that correct?

MR. ESCHENBERG: Yes, sir. Today we've targeted five -- five specialty skill sets that will help us in the review of the Preliminary Safety Design Report that we've just taken receipt of, and as we move to the next phase of the project, as the design develops and as the Preliminary Document Safety Analysis is prepared.

MR. SULLIVAN: Okay, thank you.

CHAIRMAN WINOKUR: Ms. Roberson.

VICE CHAIRMAN ROBERSON: Mr. Erhart, one goal of the new Y-12 Pantex combined contract, is to

make things better, -- is going to involve contract management transition of some kind during the final design of the UPF, is that correct?

MR. ERHART: Yes.

VICE CHAIRMAN ROBERSON: Mr. Raines, what are the primary risks? What do you consider to be the primary risks associated with transitioning the prime contract during detailed design of a major project like UPF?

MR. RAINES: Thank you for your question. So always when there's a turnover of contractors, what we need to do is ensure that the new contractor coming in understands the exact status and agrees with the exact status of the design and the safety basis that's being turned over to them.

And so to help facilitate that, we have required that within the first 90 days that a Project Management Plan would be put together to get us through all of the details of agreeing with the exact status of where we are.

Of course, there will sometimes be a difference of opinion between an incumbent contractor and a new contractor, and we believe that, in fact, the CD-2 strategy, where we have pushed CD-2 to the right of this turnover, is another item that will help

mitigate that as a danger, so we will have an ample opportunity after the new contract is put into place to review where we are. John Eschenberg and Steve (Erhart), as well as our contracting officers, will ensure that they adjudicate any differences between the two contracting parties. We will have an agreement from which to put that new PMP forward, to establish the CD-2, as we go ahead and baseline the project.

VICE CHAIRMAN ROBERSON: So let me ask you, I can understand that relative to cost and schedule, but will the basic design for the new contractor be constrained to the design you have spent so much time on already?

MR. RAINES: We believe that the design that we have today, the majority of the designers will rotate over. The design basis has been established by the Department, and the contractors will have had an understanding of that as we went through the procurement process. We have identified where the design is today, so they understand that they are taking over a project that the design is in process of, and they will be geared up to ensure that they get a full understanding of the status of the safety basis of that design. Does that answer your question?

VICE CHAIRMAN ROBERSON: I think so. Let me just follow on. Mr. Eschenberg in his opening statement referred to the development of an integrated schedule of safety-in-design deliverables, which is an improvement to help remedy some of the issues the project is seeing. What is the new -- I mean, is the new contractor going to be constrained to that integrated schedule for safety and engineering?

MR. RAINES: So we are going through the re-plan of that as we speak, as you all had indicated, that there is a space-fit issue, and so that is a plan that will be provided to us at the end of this month, which we will review and approve.

Once that is completed, that is the plan that we expect that we will be able to move forward on, but as I had indicated, when the new contract work comes in, if they believe that there are deficiencies in that plan, that would be something that we would talk about.

I think that, you know, one of the benefits is that we are going to be approving this plan relatively closely to the time of when the successful offer will be selected, so I don't see that it would be something that, as we had matured the design and the safety basis for six or 12 months, where there

might be a lot of opportunity for a change, so being contemporaneous right now, although it's not the desired state, we think it works to our advantage.

VICE CHAIRMAN ROBERSON: Mr. Erhart, how are you going to be prepared to review and assess potential changes that the new contractor will propose, since the focus of this contract really is to cut costs? How are you going to ensure that the decisions related to safety are properly assessed and protected?

MR. ERHART: That's a great question. As I said in my previous answer, as far as the safe, secure environmentally sound operation at the site goes, business as usual. Although we have a new office, new logo, we're still focused on getting the work done safely. We still have the same expectations for the quality of the documentation of the thoroughness of the evaluation of hazards, of the selection of controls that we have, so that's going to stay the same throughout the transition.

And so we will provide that stability through the federal staff that we've already put in place in anticipation of the consolidated contract, so the NNSA's production office on the federal side has been up and running for a few months now, and by the

time the contract is awarded, we will be in a position to deal with the new contractor and be ready for whenever they submit to us for approval.

VICE CHAIRMAN ROBERSON: Thank you, sir. So Mr. Eschenberg, my last question at this point, to you, we already know you don't have the oversight resources you need. We just went through that. So how are you going to be prepared to ensure that you have adequate resources to keep up with this project as it goes through that transition?

MR. ESCHENBERG: I will tell you that, as we all appreciate transitions are tough, particularly one of this magnitude. I had the fortune of transitioning a very large contract here locally within the last 18 months, and it was very successful, and it was successful because we developed as a team a comprehensive transition plan, and there was a high level of federal engagement every step of the way.

I will tell you what gives me a level of comfort and I'm going to tell you what we're going to do. As Mr. Raines mentioned earlier, much of our design engine is going to remain static, from a people perspective, it's going to remain static.

The design processes and procedures, the design tools, the three-dimensional model, those

things all remain static. Now, it's true that when a new contractor would come in, there's always a period of due diligence, and so that contractor may very well say, I don't like the way these things are structured.

What's important is along the way that we have a very robust transition plan that's comprehensive and it allows us to engage along the way. As individual procedures and processes are blue-sheeted, that's our local jargon for how we transition procedures. But I think the key is for us all is we must stay focused on configuration control, and its configuration control for things like the safety design strategy and the safety control set.

You mentioned the schedule. We have to maintain visibility and configuration control of that. By the same token, we need to afford the new contractor an opportunity to evaluate the body of knowledge that he will assume, but then again, it's incumbent upon we as a team -- there are many, many team members involved in the transition. We need to be sure that there's no erosion in rigor or how safety is integrated into our design.

VICE CHAIRMAN ROBERSON: Thank you.

CHAIRMAN WINOKUR: Mr. Bader has a follow-up and then I have a brief one. Mr. Bader?

MR. BADER: Mr. Eschenberg, you used the words "the design engine remains static." Do you expect the new contractor to retain the complex BOA [Basic Ordering Agreements] arrangement to staffing the project?

MR. ESCHENBERG: At the onset the BOA arrangement will remain the same. At some point in the future might the contractor elect to do something different, I can't speculate on that. I think what's important for we today and as we transition through the new contract, is to make sure that this BOA arrangement that you cite, Mr. Bader is, in fact, one that has no holes, one that is, in fact, well integrated and well orchestrated, leading to someone -- a single point person who is the integration, that there is no uncertainty between the designers, and typically that's done with an architect in charge.

That's the kind of rigor that we expect, and whether the new contractor may or may not change that, I just can't speculate.

MR. BADER: Does that give you concern about the possibility of project turmoil?

MR. ESCHENBERG: I think what, it's fair for me to say that we have identified some challenges with this arrangement. As you can imagine, when you have

four separate entities who are designing individual components, whether it be mechanical or structural, it's these points of integration that's where the vulnerabilities are, and certainly we recognize that and I know our contractor recognizes that. We have taken action to improve these integration points, but that's how we're going to measure our success.

It's always the same, no matter what phase of the project you're in. It's these points of integration by which you succeed or fail, and with more federal staff, as I pointed out earlier, that we're going to bring on board, this would give us much more insight into the pulse of this level of integration and how it's working.

MR. BADER: Thank you, Mr. Eschenberg.

CHAIRMAN WINOKUR: If you can give me a brief answer, it's fine. If not, perhaps you can take this for the record. Can you name any other DOE projects in which, multi-billion dollar projects in which you've changed contractors at this stage of the project? If you could give me a brief answer to that now? If not, we'll just take it for the record? Waste Treatment Plant was one that didn't work out extremely well. Do you have any other examples that pop into mind?

MR. ESCHENBERG: I don't, but we would be happy to take that question for the record and close with you.

CHAIRMAN WINOKUR: It is extremely challenging, what you're doing. Dr. Mansfield?

DR. MANSFIELD: Thank you, Mr. Chairman. As I've always understood the classic procedure, the Hazard Evaluation Studies take place out of which a Preliminary Safety Design Report is put together, and then later when the project is about to go into final design, a Preliminary Document Safety Analysis. This project has had to make exceptions to that, I understand.

Okay. You're proceeding without some Hazard Evaluation Studies completed, and my questions will be about that, why couldn't the established procedure of completing Hazard Evaluation Studies, using them as a basis for Preliminary Safety Design Report, why couldn't that have been done completely at this stage or why couldn't -- perhaps not now, but why couldn't it be done without having to -- why couldn't it be done without having to revoke the approval of the Preliminary Safety Design Report and rebaseling that --

MR. ESCHENBERG: I think it's fair to say if

we could reset the clock, we would not have suspended our work on the Preliminary Safety Design Report as we came out of the conceptual design phase, and when we made that decision, as you pointed out earlier, the decision to couple the Critical Decision 2-3 junctures, that drove us to a certain end state.

And in hindsight that was not the best of decisions and certainly over the last 18 months, we've gone back to the more traditional approach -- the approach Dr. Mansfield, that you cited, and that is we do develop comprehensive Hazard Evaluation Studies. Those then build upon themselves and they then feed into the project's design.

DR. MANSFIELD: But you weren't able to do that completely from the start? You had to do this piecemeal. Is that because you didn't have enough people?

MR. ESCHENBERG: No, it was not a resource limitation.

DR. MANSFIELD: So with the number of staff that you -- number 22 that you put together, you should be able to execute the classic procedure of putting together -- incorporating all the Hazard Evaluation Studies into a Preliminary Safety Analysis Report?

MR. ESCHENBERG: And, sir, just to be clear, our twenty -- today our staff of 22 are on the rise. We don't actually generate the Hazard Evaluation Studies. The contractor's team does --

DR. MANSFIELD: I realize that. I realize that, but you had to -- faced with studies that were difficult to -- you figured were not complete, had to send them back. There's a lot of your time involved in analyzing an incomplete product, and a lot of delay because of that, and I was just asking whether or not the level of your staffing has interfered with your ability to control that process?

MR. ESCHENBERG: I think what it has done is it allowed us to -- it didn't allow us to become aware of the shortcomings and the gaps that were created between the design and the Preliminary Safety Design Report, when we should have known that now today, with a much more robust staffing level, as we get to the next level of maturity of the safety basis, that will not be the case.

DR. MANSFIELD: Okay. So you will be able to finish all the Hazard Evaluation Studies and incorporate them in the next submitted Preliminary Safety Design Report?

MR. ESCHENBERG: Yes, sir, and what's

important to note is that with more people, with more federal staff, and the greater ability to oversee these processes, we have started to review in-process deliverables, and I think that will pay good and high dividends because early on in the process we're going to know that there's a shortcoming or not, whereas before, with the limited staffing, federal staffing, we weren't able to engage early on in the process as these design deliverables were being formulated. In fact, we only knew it at the end when we had deliverables --

DR. MANSFIELD: When you --

MR. ESCHENBERG: Once we took receipt of them.

DR. MANSFIELD: So does that tell you you need to be in close contact with the contractor as he develops those, so you won't be surprised with an incomplete product at the end?

MR. ESCHENBERG: It does, sir, and I will point out that we are -- this project team is completely co-located with the design team. We're not separated by time or distance. The only shortcoming there was people, and I think that we are -- we have a pretty solid plan to fix that shortage.

DR. MANSFIELD: It does take more people to

get that finished. Do you consider that you have to have an approved Preliminary Safety Design Report before you can begin final design activities for safety controls?

MR. ESCHENBERG: Yes, sir, I do, and that's consistent with our governing documentation.

DR. MANSFIELD: Yes, it is, I agree. It's going to be difficult to deliver on that unless you can deliver a Safety Design Report that has all of the Hazard Evaluation Studies completed. Have you had difficulties with getting the contractor to deliver safety basis products on time? Has that been a stretch for the contractor at this point?

MR. ESCHENBERG: Well, I will tell you that we have had difficulty with deliverables and the timeliness of safety basis deliverables. I will tell you that I believe the contractor has made great strides to improve that, principally by developing a credible schedule that's integrated with the design schedule, and that was the first step in beginning to meet these critical project deliverables.

Secondly, their internal processes and procedures have been modified and improved, and that has allowed more consistent and on-time deliverables, so I would characterize it -- and I might ask Ms.

Robbins to expand upon this detail point, but I would say that we in more recent times have had much greater success of on-time deliverables of a higher quality level, since we've developed the integrated schedule, since we've modified our procedures and since the contractor has brought on more technical expertise in this area.

DR. MANSFIELD: You had a comment?

MS. ROBBINS: Yes, I'd just echo what John has said. One of the things that has plagued us is leadership on the contractor's staff as far as nuclear safety. Recently in the past year they have brought in some senior expert leadership that's recognized in the industry. That has created a schedule that is integrated, detailed, so design deliverables that the safety basis needs are identified on the schedule, and the safety basis output at the design team needs is identified on the schedule, so it's integrated, so we know that we can meet those commitments and it's a resource-loaded schedule, so we know that we have the resources available when we need them.

CHAIRMAN WINOKUR: One of the things -- let me just ask a question here, hopefully -- one thing I'm trying to understand here is why did this happen? DOE has a well-defined set of directives of how these

capital projects are supposed to proceed.

In your opening testimony, John, you referred to this documentation, this PSDR, as required documentation. Why did the project get out to the CD-2, CD-3 phases without this report being developed, a report that subsequently the Board wrote a letter about and NNSA identified hundreds of concerns, significant concerns about? Why did this happen on this project? John, I think it's probably the best question for you. Any sense of that?

DR. COOK: Let's see. I think I'll try to come directly to the point, so across the nuclear weapons complex, which we now call the Nuclear Security Enterprise, there was a historic problem with funding, if I look at 2005 to 2010, you've heard me say before, we took a very real cut of 20 percent in the funding for the program effort.

If you look at what happened during some of those years, the lack of funding, the lack of priority, the lack of staff were all tied together, just to cut to the chase.

The reason there is hope today is that we have a very strong budget and as you well know, the Administration and I'm a part of that, the President has requested additional money for UPF. We've had to

defer other things again, as you're quite well aware of, and we put a great deal of attention toward the project, toward the federal structure, toward the staffing, and toward the funding profile to optimally do our core objective.

In your other questioning I'm sure you'll come to the point of some of the deferrals. What is often not stated is how much money is being put forward and what the focus is, but I've tried to answer your question directly Mr. Chairman.

CHAIRMAN WINOKUR: Do you have a burning question now or can I go on? Okay. I feel very good. These project management experts have asked that question, and I feel good. I have a question about the letter, and I guess this question will go to you initially, Mr. Eschenberg. No, I'm sorry, it will go to you, Mr. Erhart.

There was a letter on September 25th. It was from Mark Seely, who we will speak to later, who is the Project Director of the Uranium Processing Facility, and it basically says that the project is recommending that the Department or the project consider the use of safety class controls, and this is in association with accidents some that might be seismically initiated, perhaps a seismically initiated

fire, or something, you know, dealing with criticality, and basically what they did, they did an analysis.

They found out that the dose to the public was about five rem, total equivalent dose, and based upon that they were asked to at least consider safety class controls, but they did make a formal recommendation to the Department to include safety class controls in this project. Can you tell me, Mr. Erhart, what the Department's decision on that recommendation is going to be?

MR. ERHART: I can't right now, but I think -- I think that was a wise move on the part of the project, but the -- as we've already noted, the PSDR is in the process of being reviewed and we'll take a look at that, but I think that indicates a margin, a conservative decision on the part of the project that I think is warranted, so I think we're taking that under consideration.

CHAIRMAN WINOKUR: How do you think you're going to evaluate that recommendation? Do you have any sense of what the main thoughts, main criteria you are going to be used to determine whether or not the recommendation is a good one, to include safety class controls in the project?

MR. ERHART: Well, again, the -- our guiding principles are the safety of the worker, the public. We have a lot of standards that we go by in the Department, but we also look for, like I said, conservative decisions that are in the best interest of the site and the best interest of the public, so we'll factor that in. And if there's a recommendation to do more and the project has the resources to do that, we'll take all of that into consideration.

But, of course, from my standpoint we want the safest, most -- safest facility that we can get that delivers the mission for the NNSA.

CHAIRMAN WINOKUR: What impacts -- do you have any sense, maybe I'll turn to John for this -- what impacts would it have on the project if at this stage you were asked to incorporate safety class controls?

MR. ESCHENBERG: At this phase in the project it's likely to have very little impact.

CHAIRMAN WINOKUR: Limited?

MR. ESCHENBERG: Limited, very little, very little impact. And I will tell you at the onset, because we do recognize we have uncertainties, we've taken a very conservative approach in the safety design strategy, and this preserved our ability to

upgrade things like the structure, if we needed to, to upgrade the fire barriers, if we needed to, and this particular letter does make a recommendation.

I will tell you that just to add to what Mr. Erhart said, I think it's fair for me to assess it relative to its proximity of consequence to the evaluation guide. As you know, 3009 our standard, says 25 rem is the standard, is the gold standard, but we do have more contemporary documents now that drive us to make a different judgment now. If you have a consequence greater than five rem to the public.

And although we're very close to that, I think that in our view it makes a lot of sense to look very closely at what's been recommended, to make sure we understand that we have greater preventative, as opposed to mitigative, features. We have greater passive controls versus active controls, and we want to understand their robustness and their individual reliabilities, and we do want to understand the cost impacts.

But I will tell you, our initial assessment today is to make this transition, or to upgrade the functional classification of the structure or the fire barriers at this point is of very little impact.

CHAIRMAN WINOKUR: Now, one of the things

that led to this in the first place was that you were performing some Hazardous Analysis Studies, Hazard Evaluation Studies, I think you may call them, and you looked at what the potential dose was in these accidents. Is it troubling to you that this late in the project that you're having these discussions? Should these things have happened a fairly long period of time ago? What is it about that analysis that finally got to the point that there was a need to consider the use of the safety class control? Is there something you could have done better there, you could correct there?

MR. ESCHENBERG: You know, I think as you always look back over your shoulder to what happened yesterday, I think there are avenues by which -- or there were opportunities for us to do things different. I will tell you that I think what's important and what gives me a level of comfort is this, that we cannot forget that we are simply in the throes of detail design now. This is a very iterative approach. We're supposed to have very energetic and robust discussions back and forth that come to -- to come to an agreement on what best suits the needs relative to safety and health and environment, but we have to stay true to the principles and the safety

design strategy and the safety control set.

Might one criticize that we come to this decision late? You may. I think that we've come to the decision just in time, and we are well before the point where we are going to baseline the project, and we are well before we start any sort of construction activity, at least on the nuclear structure. So the identification and the potential upgrade of the structure and the fire barriers today is not necessarily overly troublesome to me.

And I do want to just make one final point, and that is at the onset that is why it's important for us to have very conservative decision making, such that we do have margin that we can use that will not create an unnecessary cost or schedule impact at the tail end of the project. It's good for us to make these decisions today while we are in the design.

CHAIRMAN WINOKUR: Let me just make a statement and I'll go on. I'm not trying to live in the past and relive history here. The Board is repeatedly discussing these same issues on major projects with the Department of Energy, why these Hazard Analysis Studies aren't being performed, why the control set isn't initially being identified, and it takes a lot of time and a lot of effort and a lot

of work to redo these things and to have these discussions, and we would like to encourage you to get to the point that you do it right the first time, and that the project clearly defines what its control set is, clearly determines its safety documentation for projects of this kind. That's my point.

MR. ESCHENBERG: Understood, sir. Thank you.

CHAIRMAN WINOKUR: Yeah, we have a follow-up and then we'll move on. Mr. Bader.

MR. BADER: You said I think two things I think of great value. First of all, that you came to the decision just in time. And secondly, that there was a small, if any, impact in making these decisions. Now, am I correct in assessing that if you make them later when it comes to the beginning of construction, or in construction, it could have a major impact?

MR. ESCHENBERG: That is a fair assessment. Certainly it's the least desirable point to make design changes, when you're placing concrete. And today we are in a position where we're simply upgrading a few design deliverables. It is the least desirable to recognize that while you're in construction.

MR. BADER: Mr. Raines, when you take over

authority and construction begins, how do you assure yourself that you have the truly integrated, well-balanced solid safety plan in the design?

MR. RAINES: The safety basis PDSA would be completed by CD-3 when we go to construction. And so by following our principles, we should have the PDSA completed. As we continue now, we're going to continue to have these discussions that John had talked to you about.

I think that, you know, the way that we have in the past fast-tracked construction more has led us to, you know, not just project management issues, but really it becomes a cash flow issue on the project, and so as you heard us say in the beginning, we're going to make sure that we robustly finance contingency on the front end, which is another issue that the Department has had in the past.

So we believe that we will have the PSDR done, we are going to complete the design before we -- to a much, much greater level of detail than we have done on any of our other nuclear projects. That has been a commitment of the Department and the Administrator, and then we will proceed with that construction with a stable and predictable funding profile, where we understand that we will hold

contingency back for the general perturbations that we have experienced in the past.

And I think when we have all of those items in place holistically, it will help us make sure that we are not trying to recover through the project, as we have in the past. We are looking forward on this project.

MR. BADER: Mr. Raines, let me just focus a little more. My question really is focused on will you be shadowing the decisions that are made on safety, so that when you take over, you are already comfortable or are you just going to pick up the book and decide whether you're comfortable when it starts?

MR. RAINES: Okay. Well, to that specific question, sir, I am fully engaged today with that, so my organization has led the latest TIPR team, for example, and Don (Cook), John (Eschenberg) and the entire IPT (Integrated Project Team), we meet to make sure that we are integrated from inception through turnover.

MR. BADER: Thank you.

CHAIRMAN WINOKUR: All right. I have the good fortune to have another question. John, I'll look at you to start. You're a lucky guy today.

You talked in your testimony, and the Board,

of course, has always been concerned about what we call this gap between design and safety basis. Can you say a little bit about what that gap means and if you think it's too large today?

MR. ESCHENBERG: What it means is that as the safety analysis, the Hazards Analysis, the Consequence Analysis, the identification of controls, that lags from a design perspective, the thinking in the safety space or the safety evaluation, so there's this chasm between the maturity of the design and the maturity of the thinking relative to the safety analysis.

I will tell you that the chasm or the gap between the Preliminary Safety Design Report that we received in the fall of 2011 was probably quite large, and over time that gap has been reduced. It's been identified in the PSDR that we've taken receipt of last week. We've only had a couple of days to look at it closely, but I will tell you that we believe at this point it's come a long ways to closing these identified gaps.

I think it's fair to acknowledge that we do anticipate that there will always be some level of gap between the design and the safety analysis, because the safety analysis as represented by the Preliminary

Safety Design Report, just simply a snapshot in time, so there's always going to be a gap in design because the design engine doesn't stop. It keeps going.

What's important for us to acknowledge, though, is that as you come to these individual points, these peg points, or snapshots, you don't identify a significant shortcoming in your safety design strategy or your safety control set.

And what I believe is the case and we'll prove this out over the next month as we review the revision 1 to the Preliminary Safety Design Report, we've not identified a huge disconnect between the safety design strategy and the safety control set. Teresa, would you like to add anything to that?

MS. ROBBINS: I would add that change control, as the safety basis matures, as the design matures, is a key aspect, and one of the things that has been done with the PSDR, Preliminary Safety Design Report, Revision 1, is the contractor has gone back and evaluated all of the design changes that have occurred since the Revision 0 of the Preliminary Safety Design Report was issued, and incorporated many of those design changes into the Preliminary Safety Design Report Rev. 1.

In addition they have gone back as they have

evaluated the Hazard Evaluation Studies, and they have looked at the more current design effort and evaluated the design against what was in the Hazard Evaluation Study and added controls, where necessary, to address any new hazards that were identified.

CHAIRMAN WINOKUR: Mr. Eschenberg, you talked about lessons learned. What are the lessons learned from what happened on this project about why this gap between the safety basis of the design, you would describe it as chasm, became so wide? What did you -- what were the missteps that led to that?

MR. ESCHENBERG: Right out of the box, we should not have deviated from our process, our practice. We should not have abandoned at the conceptual design phase. We should not have abandoned the notion of establishing a Preliminary Safety Design Report. We should not have done that. And I will say that, you know, as I read project history and try to understand it, we were -- the Department was in the throes of adopting the DOE Standard 1189. Those aren't excuses. That's just what happened.

If we could revisit it, if we could start today with a clean sheet of paper, I can assure you that we would not deviate from our practice, and we would go from conceptual design through a Preliminary

Conceptual Design Report, into preliminary design, with a Preliminary Design Report, and then into final design. We would stick with the traditional method.

CHAIRMAN WINOKUR: So you're hopeful that the new PSDR Rev. 1, which Teresa referred to, Ms. Robbins referred to, excuse me, will improve matters?

MR. ESCHENBERG: We believe that the gap has been dramatically reduced and, again, we will better understand that and be much better informed over the next six weeks as we finalize our review.

CHAIRMAN WINOKUR: So what I don't quite understand yet is that this project will undergo a redesign, it's getting upgrades to its hazard analysis, it's undergoing federal staffing changes and contract changes, is the PSDR you're looking at right now reflective of the real temperature of the project? Do you think it really will give you a very good snapshot right now when you review it and approve it that the gap between the safety basis and design has been closed?

MR. ESCHENBERG: I believe that it will. As you point out, we are on the verge of some design changes, where both the structure and the internal layout and configuration of much of the process equipment that's going to need to be carefully managed

and we can do so in real time as the design advances.

Today, as the Preliminary Safety Design Report exists, it should very closely reflect the design and, again, we've not identified, at least our early assessment, we've not identified any significant gaps as identified, or shortcomings in the Hazard Evaluation Studies.

CHAIRMAN WINOKUR: You mean the design or the redesign?

MR. ESCHENBERG: The design as it exists today. The redesign, we don't know yet, because we don't fully understand what the impacts of the redesign will be. Today, as the design exists, we have a level of confidence that the design maturity and the Preliminary Safety Design Report are closely covered.

CHAIRMAN WINOKUR: But it may not be the design in a very short period of time, right, when the redesign takes place? I mean, how significant is that?

MR. ESCHENBERG: That is correct. We -- I think what's important is what we're talking about relative to the structural design changes, it won't change the functional classification of the structure. We just had that discussion. It won't change the

impact of fire barriers.

What we're talking about here is widening or thickening the members of the walls, thickening the slab. That does result in a significant amount of added design effort, but the principal features and its protective function and its mitigated function remains unchanged.

CHAIRMAN WINOKUR: I have some other questions for the record, but I think we should move on. Mr. Bader?

MR. BADER: Let me follow up from there. Looking at the redesign to look at and adopt the project to the space-fit issue, as discussed during the Chairman's opening remarks, we're aware obviously that the project has identified significant issues with fitting the necessary processing systems and components into the UPF structure, so-called space-fit issue.

And that resolution of the space-fit issue, will require the structure be redesigned and some process systems removed from the scope. Could you discuss what the underlying causes for this issue occurring are? What was the root cause?

MR. ESCHENBERG: Let me first point out that we have not yet -- the Department has not yet

conducted its evaluation into the root causes. I will tell you what our sense of the factors that led to this.

First, the project prematurely established a hard footprint. We locked in; we froze the project's footprint prematurely.

I think that there were some integration issues between the various design disciplines. I think that that may have been exacerbated by having three different geographical locations for the design entities.

I think that the project could have been much more aggressive in managing space and fit margin. Design margin is always a very difficult thing to manage, whether it be heat load or whether it be space or whether it be power burden. We could have been much more aggressive in managing that design margin.

This risk has been known since 2009. So our risk management program, an objective view might criticize our risk management program and how aggressive was it. Once we identified this as a potential risk and the consequences of a risk like this, we could have been much more aggressive at managing it to closure.

So those are my kind of initial thoughts on

what drove us to this situation. Our intention as NNSA, is to do a stand-alone, independently chartered, after-action, fact-finding review on what led to this design short coming.

MR. BADER: And you will issue a report on that?

MR. ESCHENBERG: We will issue a report, yes.

MR. BADER: Well, to me this is a major step, and I'll go back and quote you one more time, that you came to the decision just in time. This is another just in time, and hopefully this report will specify what the reasons were and instruct your efforts going forward because this is the last time it can be done before construction starts basically, in my estimation. Is that correct?

MR. ESCHENBERG: That's a fair assessment, sir.

MR. BADER: Could you discuss the contractor's proposed solution to the space-fit issue as you know it at this time? What's the time line for implementing the solution?

MR. ESCHENBERG: In reverse order, the time line for implementing the solution is immediate. Today I do not have all of the detailed implementation

and schedule for when it will be completed. We will have that by mid-fall. It's actually the third full week in October, three weeks from today.

The impacts to the structure, are this. The slab, is going to be thickened by one foot. The overall height of the building, external, will increase by 13 feet. The interior and exterior walls will be thickened from 18 inches to approximately 30 inches. Then there's some minor structural detail that will change. Those are the impacts to the building structure.

MR. BADER: And could you summarize what processes are taken out?

MR. ESCHENBERG: To help us accommodate our individual unit operations for uranium processing, we look very carefully at the need, the necessity for all of the individual processes. There is one process is called rolling-forming that we worked very closely with Dr. Cook and the design agencies and have elected not to install the rolling-forming capability, and Dr. Cook might wish to can expand on this.

The other is that we had a dedicated technology development space in the uranium processing facility. Today, instead of having a dedicated space for technology development, we have interspersed

technology development in free space within the building, and then have a desire to have much of the technology developments based outside of the radiological portion of the facility, in a clean lab, in clean developmental space. Those were the two principal programmatic impacts.

MR. BADER: This goes to my other question. Are you comfortable that you know the cause adequately that you can control the risk going forward of having to remove even further processes, as the design continues?

MR. ESCHENBERG: At this point we are. I will tell you that over the course of the next quarter we will be much better informed by, one, the results of our independent assessment and evaluation of the factors that led to this. Two, the detailed engineering completion schedule or the to-go engineering completion schedule. And thirdly, although I gave you kind of a higher order thumbnail sketch of what the structural impacts were and how the individual unit operations were going to be reconfigured to help accommodate our space-fit challenge, as those details become more clear to me and our design review team, I'll be much more informed and can give you a much more informed answer in

approximately 90 days.

MR. BADER: Is it fair to say that you are going to have to re-evaluate things like the safety class controls as a result of the changes in processes that are included initially and the changes in structure?

MR. ESCHENBERG: Yes, sir, that's a part of it.

MR. BADER: These issues reinforce our concern that there's a large gap between the safety analysis maturity and the design maturity, and the next version of the safety analysis is going to have to be spot on.

MR. ESCHENBERG: We agree.

MR. BADER: Is it your opinion that dealing with these issues this late in the design does in itself pose a risk?

MR. ESCHENBERG: It does pose a risk. I would say that the risk is probably at this point it's more of a cost risk than it is a risk to coming to an appropriate design that's protective of safety.

MR. BADER: Thank you.

CHAIRMAN WINOKUR: Dr. Mansfield.

DR. MANSFIELD: Thank you, Mr. Chairman. Dr. Cook, the execution plan approved in June, project

execution plan in June, to me it's unclear how the deferred capabilities presently in 9204-2E and 9215, will eventually -- where they will be hosted in the meanwhile, presumably where they are now, and how they will be -- how those capabilities will be introduced into the UPF, if they ever are? So for clarification, are Building 9204-2E and 9215 capabilities within the scope of the UPF project?

DR. COOK: I'm going to give you a fairly thorough answer.

DR. MANSFIELD: Yes.

DR. COOK: So I'll talk quickly. You're certainly free to interrupt me as you wish. Right straight out, there are three potential risks to consider, and we have considered them within the program, the project, the site ops.

The very first risk is the inability to get out of Building 9212, and so we put that one at the highest priority. Managing that risk means focusing our resources, ensuring that we build the entire UPF building to accommodate at a later stage the capabilities that are presently in 9215 and 9204-2E or Beta 2E, as well as 9998 and some of the metrology space.

Mr. Eschenberg has already talked about the

decisions that we made on the program side in working promptly, interactively. We looked at those things that we could and would be willing to give up now, and they fell into two areas. Rolling and forming space, we evaluated not only the present stockpile we have, but the future deterrent going out to all Life Extension Programs that are planned. And we concluded we could give up the rolling and forming space. We had a formal decision that did that.

When it came to the development space, if I call the HEU area the red area and the DU area the white area, flexibility in the white area is always much higher and the cost is lower, and so the space for development in the red area was distributed throughout the other elements, so as to maintain our ability to manage two risks that I've talked to you about now.

The first is to get the 9212 capabilities into UPF, and we have accelerated our target. To do that, beginning that transition, is now in 2019 in our planning, and the President has requested a budget that went from $190 million in the present year. We're two days into the fiscal year '13 now, that was increased to $340 million. We've also placed great priority on ability to execute that budget.

I placed great priority on our ability to retain the space for the machining as to 9215, and the assembly, disassembly, Beta 2E and the metrology 9998. So those are retained in the current plan that we have.

Those are two risks. Then we come to the third risk that you identified, and that is what do we do with these facilities that we have in the meantime? Short answer is we'll take an approach. Steve Erhart can talk about his process within the site to look at the nuclear facilities that we have, how we do evaluations, how we can assure first to ourselves that we can have adequate protection, and then do so to our workers and public.

And that generally requires additional budget to keep such facilities alive longer, 9215, Beta 2E, are newer than 9212 and so we've set the priorities clearly in mind in order to manage all three risks.

DR. MANSFIELD: Does the scope of the current UPF line item include those metal working programs, as well?

DR. COOK: It does not include the tooling to go into those areas. It does include the construction of the main building, and it will, as we

go forward, certainly include the risk management step of ensuring that we don't give up that space for those capabilities.

DR. MANSFIELD: Okay, fine, it's good to get that out. When they have to be put back in, that will then be a separate project, won't it?

DR. COOK: The short answer is it will be separate funding. It will come in another phase.

DR. MANSFIELD: Right.

DR. COOK: Whether we call that a Part 2 or whether we give it another name is yet to be determined. We have our eyes on achieving through good design, appropriate design, and as we can, creating more margin in space, the early incorporation of some of the capabilities, where it makes sense from a practical safety point of view and programmatic point of view, so we're not saying that we won't include any of those, but we're saying that they fall at a priority that's less than getting out of 9212.

DR. MANSFIELD: Will the steps going forward include those -- include the line items to cover the metal program? Will that be easy to incorporate into the contract or will there be -- will it be necessary to negotiate with Congress about those things?

DR. COOK: Sure, we do that every year. So,

I mean, will we have to request additional funds? I'm fairly sure that we will. Will we want to request a new building? The short answer on that is no, we want to preserve the space and the capability and at a later stage then move out of 9215 and Beta 2E.

DR. MANSFIELD: Thank you. A question on the buildings themselves. Do you foresee any problem in keeping those buildings operational until you have -- you don't really have a date, do you, for when they will be incorporated, installed in the UPF, is that correct?

DR. COOK: We're going to answer this in two parts. You say that from a program perspective we'll have a continuing need for machining and for assembly, disassembly and I'll ask Mr. Erhart to answer the question of how we're going to retain those capabilities in the interim.

MR. ERHART: So the facility risk reduction effort that was -- excuse me -- that was done to continue to extend the life of 9212 has been incorporated onto the two buildings that you mentioned, as Dr. Cook mentioned. Those buildings are newer than 9212, but still we do want to do a thorough study on how they're aging and what systems would need to be updated through -- to keep them going at least

ten more years.

Two studies have been completed that -- the good news on that is there's no significant safety issues that came out of the studies that need immediate remediation. The study was also successful in getting some recommendations out there for some smallish projects that can be done to extend the life of some of the systems within those buildings, and that that request for funding for those projects has been made, and is being looked at by headquarters, and I think has been incorporated at least in the planning phases of budget formulation at headquarters.

So our job is to ensure that those facilities remain safe for operations and extend their lives as necessary until such time as the -- as funding allows those processes to be moved.

DR. MANSFIELD: Indefinitely?

MR. ERHART: Sir?

DR. MANSFIELD: Indefinitely? It could be ten years, it could be 20 years?

MR. ERHART: Right now the anticipated time horizon is through 2030, but the process is such that we do a fresh look each five years as a minimum, and we will do that. We just completed one study in May and so we'll continue to look at that, because the

safety of the operations is what we will keep our eye on.

DR. MANSFIELD: Mr. Chairman.

CHAIRMAN WINOKUR: Do you have a followup, Mr. Bader?

MR. BADER: Just a quick comment. Everybody seems to want to say that these are newer facilities, and I would observe before 2030 they'll be older than 9212 is today. I don't consider that to be a significant comment, that they're newer. That's all.

CHAIRMAN WINOKUR: Yeah. Mr. Sullivan.

MR. SULLIVAN: Thank you, Mr. Chairman. I just wanted to follow up along the very same lines with respect to Beta 2E and 9215, but Mr. Erhart, I notice that the facility risk review does say 2030, the language isn't -- doesn't make that a hard date. But what else we just heard you say was we take a look at it every five years. The facility risk review was done this year in May, so if we wait five years it would be 2017 when we do another facility risk review. And I look at what we're doing now on the design until the time when we expect to be operational in UPF and out of 9212, and so from the time we go get in the final design until the time we transfer all of the -- all of the operations, is going to be a decade, most

likely, if not longer.

So is waiting five years, is that prudent with respect to these facilities?

MR. ERHART: That's a good question. One thing I failed to mention in my last -- my last answer was they recently decided to conduct the same review essentially that was done on 9212 with the same visibility for these other two buildings, so I believe in that process that they'll be rolled up with the 9212 status, and presented to headquarters and I believe that might be yearly, as a result of that decision.

Now, I will say that if five years is not the right periodicity, then we'd have the option to go in, especially if something changes, so we have to look at significant changes, but there's -- if the need is there to do another study and to take a look at where we are with those facilities, we'll certainly do that.

MR. SULLIVAN: You can take it for the record, if you like, but I would like to have submitted for the record a response to the Department as to what is the marker for -- what are we laying down now for a marker for when we need to look at those two facilities again.

MR. ERHART: Yes, sir.

MR. SULLIVAN: And still along the same lines of questioning, I know from my background, which has to do with Navy ships and Navy facilities, once you've slated something for decommissioning, the safety threat had to be imminent before you could get another dime, and so I'm hopeful that that, from what I understood from your earlier testimony, that's not going to be the case here, and I'm just looking to have that commitment be reiterated, that despite the fact that replacement is still within the scope of UPF we're going to continue to fund upgrades to the existing facilities without any detriment. Is that a true statement?

MR. ERHART: Well, we'll certainly evaluate the risk, as we said. We will also submit those projects that the group comes up with as recommendations, directly to headquarters for consideration for funding, and I think we -- from my observation, the funding that's been granted for extending the life of 9212, has been pretty good, so I would have that same expectation that if we decide through that risk reduction effort that more work is required, that the funding would follow. And that would be one of the things that we would work on as we

go forward. I don't have any reason to not be optimistic about that right now.

MR. SULLIVAN: Thank you. I appreciate your frankness.

CHAIRMAN WINOKUR: Ms. Roberson.

VICE CHAIRMAN ROBERSON: Continuing with Mr. Erhart. So at some point you're going to have an operating UPF, with 9212 plus or minus capabilities, and then you're going to be faced with how additional capabilities get incorporated into an operating facility. What kind of risk do you think you're going to be facing? How are you evaluating those risks so that they get fed back into the project today?

MR. ERHART: I think a lot of that on the front end needs to be answered by the project on how to factor in new technology -- well, it won't be new technologies, but putting back into the facility things that were not originally placed in the facility. There's a lot of -- a lot of work on the front end to get that right, because as you know there may be air balance issues within the facility to take into account. You might be having to connect to some existing systems, vacuum systems, air systems and the like. So that all has to be factored in as part of the effort to bring those operations into the UPF.

And then what we would do from the site aspect, we'd conduct a very thorough, just like we'll do on the start-up of a building initially, a very thorough readiness review that will ensure that all of the -- before we operate those new processes in that building, that everything is ready to support that. That's a top to bottom look from operability, implementation and controls, training of the workforce, adequacy of procedures, et cetera. So all of that will be worked in order to bring those new processes back within the UPF.

VICE CHAIRMAN ROBERSON: Thank you. So, Mr. Eschenberg, how are you going to ensure that the UPF project identifies all the safety-related risks associated with modifying the facility to incorporate the deferred scope after operations begin?

MR. ESCHENBERG: That's a very tough question. I will tell you today that as we consider and evaluate the deferred scope, as we consider and evaluate the advancement of design, there are a series of engineering studies that do just that, and there's a whole list of these engineering studies, but principally they're broken into two areas. One is related to design, and what can we do today in design that would better able our ability to accommodate

operating a nuclear facility, hazard category two nuclear facility, concurrent with a significant construction activity, and you're only limited by your imagination.

You can have challenges in ventilation, fire protection, criticality, and alarm safety, but I think there are some things that we can do in design space today that would better accommodate our ability to upgrade and reconfigure the facility in the future.

For example, if we could put more T's in the fire suppression line. That way we could add branch lines in the future, because we don't fully understand what their configurations may be today. So in design space I think we could do some things.

And then secondly in operations space, I think that we're going to have to -- we're only starting to think about this, but as you're bringing in potentially uncleared, unqualified workers into a facility, to operate in a hazardous environment Steve mentioned, training and qualification, that's one of the hurdles that we'll have.

There's a whole host of detailed technical issues. How do you operate the facilities? How do you maintain the facilities operating envelope? How do you maintain your technical safety requirements?

So it's fair to say that today we're just in the formative state of thinking our way through what is it we can take advantage of in design space, and then secondly, how is it that we can smartly think our way through the operations concurrent with a significant facility modification, and to make sure that we can fully understand the hazards associated with doing that?

VICE CHAIRMAN ROBERSON: This is an area I think the Board is very concerned about, because it seems like a lot of time and space, but it's not. You know, ten years, 15 years. You talk about engineering studies. Are there going to be constructability studies done that takes that into account?

MR. ESCHENBERG: The constructability of things like how do you modify the fire suppression system or how might you modify an active ventilation system, one that you're relying on to maintain negative pressure on your glovebox line? How is it mechanically that you do that?

And so these studies will begin addressing questions like that. These studies -- let me assure you, these studies aren't the be all to end all. The studies are to really to explore the boundaries of where we would go as the design matures and as we

further think our way through the adoption of the deferred scope in the future.

VICE CHAIRMAN ROBERSON: Do you have a question?

CHAIRMAN WINOKUR: Just to get a sense, how long would a potential constructability phase with the deferred scope last in the facility? Let's say you began in 2030 to begin modifications to accommodate Beta 2E and 9215, how long would that phase last potentially?

MR. ESCHENBERG: Mr. Chairman, at this point we don't know the durations of construction, nor modification. I would offer that I think a reasonable approach is to do it in a phased manner over time, such that your impacts to operating facility are much smaller than from doing a wholesale change to upgrade the project all at once, but at this point we don't have the details of durations of facility outage.

CHAIRMAN WINOKUR: I know you don't have, but a sense, would it last a decade?

MR. ESCHENBERG: My sense as a constructor is no. If you -- let's just take machining, for example. We will have essential services -- I'm going to use the jargon, stubbed out into that operating space, and so -- and it's not as simple as plug and

play either, because this is a very complicated evolution, but I do think that the impacts to the facility would be isolated for the most part to the machining space where construction could take place.

The balance of the facility can be protected, but there are many, many nuances to think through, particularly as related to ventilation, fire suppression and criticality safety, because you have movements of people, you have movements of materials and machine and commodity coming through the very corridors that you're passing the material that we work with every day. So there are a number of very difficult questions and scenarios to work with. My sense, sir, is that we're talking something on the order for machining, something on the order of 18 months to 24 months.

CHAIRMAN WINOKUR: And these are things you're carefully considering right now, how to basically posture this facility for these potential upgrades?

MR. ESCHENBERG: The engineering studies that we're conducting now are a first step in this process.

CHAIRMAN WINOKUR: What if you can't fit Beta 2E and 9215 into that facility? What would you

do if you did the studies and you found, look, we just can't do -- we just cannot fit these capabilities into this facility? What would the contingency be for you at that point?

MR. ESCHENBERG: I guess in an absolute sense to your question, if there were no way that we could engineer our way through a solution within the existing footprint, there are alternatives. One, we could build an annex to the Uranium Processing Facility. Two, we might look at other newer facilities within our existing fleet of facilities, although not very desirable, but that is a potential. We might look at different technologies that would get us to an end state that might allow us to accommodate in our limitation from a square footage perspective -- those are three things off the cuff that I would say that we would consider.

CHAIRMAN WINOKUR: But the message you're providing to your stakeholders is that you are definitely committed to getting this deferred scope into that building or in some other way accomplish that. You certainly understand that you cannot continue to stay in the Beta 2E facility and the other machine areas indefinitely, right?

MR. ESCHENBERG: Yes, sir, that's -- yes,

sir. We are committed to putting all of the scope and capability within our single footprint of the new Uranium Processing Facility.

CHAIRMAN WINOKUR: Let me ask you a question. I think our time is getting short here -- about technology development, which is obviously extremely important and challenging. DOE guidance expects the new technologies will be at the level of Technology Level Readiness (TRL) 6 before construction begins, so to begin with which technologies in the UPF baseline have not achieved TLR-6 as you move toward the potential date to begin construction?

MR. ESCHENBERG: We have identified ten process technologies that are in our technology maturity plan. Today there are three process technologies that have not achieved the Technology Level Readiness of six.

They are calcination, the advanced integrated machining system, and then thirdly special casting -- special casting and calcination are linked to the 9212 scope. I will tell you that those technologies today are graded at TRL-5. We believe and have a reasonable level of confidence that those will achieve TRL-6 well before we have approval at CD-2.

The third technology, Advanced Integrated Machining System, AIMS, is also at TRL-5. If you break that technology into sub-pieces, there are pieces of that Advanced Integrated Machining System that are, in fact, at TRL-6 or better.

For example, the Advanced Integrated Machining System as its foundation consists of a lathe, and certainly it's a high-tech lathe, but within that we also have a system for managing chips. We have a system for advancing the cutting tool. We have a system for enclosing the lathe.

That's our technology development focus now is driving and understanding the integration of these ancillary systems on a primary platform of a simple machine.

But let us focus on the 9212 scope, and that is the calcination process and the special casting. Again, we do have a high degree of confidence that we will, in fact, achieve TRL-6 or better before we have CD-2.

CHAIRMAN WINOKUR: But the AIMS system, the Advanced Integrated Machine System, is critically important to you, even though it's not in the initial 9212 baseline, because it's critical for you to actually be able to fit the footprint of the deferred

scope into the facility. Is that true?

MR. ESCHENBERG: Yes, sir, it is.

CHAIRMAN WINOKUR: And would you feel comfortable beginning construction if that technology was not at TRL Level 6?

MR. ESCHENBERG: Well, I think the answer is, yes, I would feel comfortable initiating construction, but -- and let me tell you why. We as an enterprise have a great deal of experience with machining and operating machine tools. Again, our base, our foundational technology, of a new machine is something that we do have a high degree of confidence in. It's the ancillary systems that we're trying to advance the technology on.

We have bought or rather are in the process of buying a prototypic lathe today. In fact, we anticipate doing that this year. All of the ancillary systems are going to be added on, so this will give us a sense, as we drive towards the completion of CD-2 and beyond, on what our technology risks are, so we are going to be much better informed over the course of the next 12 to 18 months, well before we start construction, on our ability to either deliver this process technology or not.

CHAIRMAN WINOKUR: As the Federal Project

Director, how concerned are you about technology development? Is this really potentially an Achilles heel of almost any project? You're depending upon something. You've just -- you don't have the technology in hand. You have never demonstrated it. There are a lot of gotchas out there, a lot of potential problems. Is this something you really worry about a lot --

MR. ESCHENBERG: Sir, I wholesale believe in that. We've all learned a lot of very tough lessons over the last decade with this very question. I will tell you that with machining and these ancillary technologies that we may add to the machine, I think that those for the most part are -- and I don't want to minimize the importance of these technologies, but they are common industrial practices, common industrial process.

And what you want to do and then the risk is how we integrate that into a singular platform that has high reliability and high functionability, so I agree, Dr. Winokur, with your premise, and that is technology maturity is something that represents a high level of risk to any large, first-of-a-kind project. I will tell you that it's imperative that we maintain true to the funding and the development of

these technologies as we proceed toward CD-2.

With that, with those elements we'll be much better informed as we proceed on what, in fact, our risks are.

CHAIRMAN WINOKUR: Mr. Sullivan has a followup.

MR. SULLIVAN: Thank you, Mr. Chairman. Yes, Mr. Eschenberg, you -- I just heard you say that you would be comfortable moving forward with construction with machining not at TRL-6, even though DOE guidance says you should be at TRL-6 before proceeding with construction. So I don't want to nitpick, but I think it goes to the basic question of moving forward with deferred scope. Are we applying the guidance to the entire scope or only to the limited scope of 9212 capability?

MR. ESCHENBERG: We want to be well informed of the risk we're incurring on the project. Today for the AIMS, for the Advanced Integrated Machine System, we are today at TRL-5, and so we do have a level of confidence. That level of confidence will be improved as we develop and understand how this integrated system works, once we buy the full platform.

I think what's important that we shouldn't lose sight of is that our principal risk resides in

9212 today. That's what presents our greatest risk to the program and to worker safety and health, and if the machine tool technology were not able to be matured to a TRL-6 or better, if that should be a considered risk, as we advance into construction, but as I said today, and I think about the risk that resides in 9212, on the discussion that we had previously, in what other alternatives might we have to accommodate a machining system, should we revert back to existing technologies, and I think that the risk for us not proceeding with the construction to accommodate 9212 and start that process soonest, well overrides the risk to construction for proceeding with construction without having it TRL-6 for machining.

MR. SULLIVAN: Okay, but my question said are we applying the guidance to the entire scope or only to the limited scope of 9212. I would interpret your answer as saying well, there's no one way or the other answer -- it will be on a case-by-case basis. Would that be -- when issues crop up? Would that be a fair characterization of your answer?

MR. ESCHENBERG: I think we hold true to the principles and we hold true to our requirements set in the Department. I will tell you that in this particular case I think there is a value judgment to

be made, weighed against risk.

MR. SULLIVAN: Again, then I'll ask Dr. Cook, because my question is not to the particular case. I used the particular case as an example to the broader question, so I'm trying to find out whether guidance going forward is going to be applied to the limited scope of 9212 or to the entire scope. Dr. Cook, do you want to answer that question?

DR. COOK: For clarification, I'll just give you some additional background. I think the concern is that you have -- we have already worked through a number of them -- I didn't in earlier comments, get to the conclusions of our priorities for the deferred scope. So just as Mr. Eschenberg has said, our first priority for UPF is to build the entire building and to move the 9212 scope in. We applied in the request, to the Congress, a great deal of money at this time, and it's in '13, and we're driving forward.

Part of that money is also for management of risk and risk reduction, so we're not just letting tech maturity develop by its own. It's a very focused effort, as John Eschenberg has said.

The only current view that we have that poses a risk for not being met TRL-6 at CD-2 times AIMS capability. As far as the priority for move in

of the deferred scope, as we achieve efficiencies and as we secure additional budget and we're sure that we can proceed final design equipment, then the priority beyond the 9212 activities is, in fact, machining, so it is the 9215.

A priority that follows that is the assembly, disassembly the Beta 2E. A priority that follows that is the 15 megavolt radiography. Y-12 already uses nine megavolt radiography and so we have step by step taken very practical means, not only to understand the risk but to manage the risk, and now what you're hearing us say is we're going to drive down the risk by investment in ensuring that we get the AIMS equipment up to TRL-6 at the earliest possible time.

But I'll also say from a programmatic standpoint, given that, you know, if there were a failure in 9212 that had -- that represents today one of our highest programmatic risks. I didn't say safety risks. Programmatic risks, and therefore we're putting that at the first priority to move in.

So we would not elect at this point to say well, let's wait on everything until we can get AIMS at TRL-6. We have elected to say we'll build the entire building, we'll accelerate getting out of 9212.

Across the nuclear security enterprise, we make very hard decisions and put this project on a different and higher priority level, and will drive down the risk for the next thing that goes in, which is machine, after the 9212.

MR. SULLIVAN: Okay, thank you very much.

CHAIRMAN WINOKUR: A couple of quick questions and then I think we're going to have to end this panel. Mr. Bader.

MR. BADER: Mr. Eschenberg, let me go back to technical maturity for one minute. My understanding is that there is a part of the SDOR (Saltless Direct Oxide Reduction) system, namely the safe shutdown system, that has not been demonstrated. And as best I could figure, was probably at a TRL of about three, and that the safe operation of that system is necessary to the use of the SDOR System. Would you care to comment on that?

MR. ESCHENBERG: I think I'll ask Ms. Robbins to comment on the details, sir.

MS. ROBBINS: Yes. The SDOR technology, which is Saltless Direct Oxide Reduction, has been demonstrated to a TRL of 6, and in that we do have as part of the technology readiness assessment process, questions with regard to nuclear safety. We do have

nuclear safety participants on our technology readiness assessment team, and those considerations have been made.

We do plan on testing the safe shutdown mechanisms associated with the Saltless Direct Oxide Reduction System as part of startup testing for the facility, and we consider those to be ancillary to the actual process equipment, the actual shutdown mechanisms that will be used, and that they are common industry technology as far as relays and switches and gas supplies.

MR. BADER: Concerns have been expressed to me about that and I think that is something we -- I would like for the record, if you would submit further information on that, please.

MS. ROBBINS: We can do that.

MR. BADER: My understanding is that's necessary to the successful operation of the SDOR system, and that it challenges it.

MS. ROBBINS: Okay. Yes, sir, we can supply you with a written response.

MR. BADER: Thank you.

CHAIRMAN WINOKUR: Mr. Dwyer, do you have a question?

MR. DWYER: Yes, sir. Mr. Eschenberg, I'm

trying to understand if we circle back to the Federal Project Team and oversight. I thought that you indicated you had 22 folks on the project team now.

The last written response we had from NNSA showed that you have nine federal employees and five support contractors. Can you help me understand the breakdown? What do you have now?

MR. ESCHENBERG: Today we have 15 -- today we have 15 federal employees, FTEs who are federal employees on this project. And we have seven technical support services contractors. Of the 15 federal employees, ten are what I call core employees to the project. That means they were 100 percent billable to the project. The other five FTEs are accounted for through things like general counsel, a contracting officer, a fire protection engineer, some safety basis reviewing officials. There's a whole series of skill sets that constitute that five FTE's but that's the accounting for the number.

MR. DWYER: Okay, and just to make sure I understand, so, ten people full time with you, a series of people adding up to five more equivalents...

MR. ESCHENBERG: That's correct.

MR. DWYER: ...to support you, and seven technical support, and then it's your intent to add

ten more technical support by December 31st?

MR. ESCHENBERG: By the close of this year, and then we are on an upward trajectory thereafter.

MR. DWYER: Thank you.

CHAIRMAN WINOKUR: Let me just ask the final question. Where are you right now? I know we have to keep this brief. In the critical design process, you were approaching this fall 90 percent design completion. I know we've discussed what that even means. Now we're talking about a potential -- not a potential -- a re-design of the facility, perhaps raising the roof 13 feet. Where are you right now in terms of the critical decision process? Where are you in terms of getting to that 90 percent design? Are you at 80, 70, 60? Where are you at now?

MR. ESCHENBERG: I would like to take that question for the record, and the reason is that we will be much better informed in 20 days on the impacts of the engineering re-plan, and then what impacts that may have to our ability to achieve Critical Decision 2 by September, 2013. So within approximately three weeks we will be much better informed to answer that question.

CHAIRMAN WINOKUR: Thank you. With that, I'd like to thank this panel very much. Dr. Cook, Mr.

Raines, Mr. Erhart, Mr. Eschenberg -- and Ms. Robbins. Thank you very much.

We're going to move on to the next panel.

At this time I would like to invite the second panel of witnesses from NNSA's contractor for the UPF project, Babcock & Wilcox Technical Services Y-12, or B&W Y-12, to take their seats for the topic of this panel session, Safety and Design of the UPF Project.

And this panel consists of Mr. James Haynes, B&W Y-12 Deputy General Manager for Projects; Mr. Mark Seely, B&W Y-12 UPF Project Director; Mr. John Gertsen, B&W Y-12 Vice President for UPF Programs; Mr. Brant Morowski, B&W Y-12 UPF Engineering Manager; and Mr. Kevin Kimball, B&W Y-12 UPF Safety Analysis Engineering Manager.

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. Does anybody on the panel wish to submit

written testimony for the record at this time? Seeing no such requests, we'll continue with questions from the Board members.

Dr. Mansfield -- I'm going to move to Question Number 2. Dr. Mansfield will be back in a second for his question.

So let me begin with this April 2nd letter that the Board wrote on the integration of safety into the design of the Uranium Processing Facility. And the Board did express concerns -- I guess I'm going to initially begin with you, Mr. Kimball, because you are, I understand, very much the safety basis expert on the project. We did express concerns about some of the Hazard Evaluation Studies and the failure to analyze some hazards properly, and what actions have you taken to address these issues? Where are you right now in this process?

MR. KIMBALL: Mr. Chairman, thank you for the opportunity to update you on the actions we've taken with respect to the letter. We received the Board's concerns, which we took very seriously. We are extremely committed to making sure that we have the best design, that we in fact have safe operations for the public, the worker, and we protect the environment.

And when we received that letter, one of the main actions that we took was to conduct an internal assessment, primarily aimed at looking to see if we had any systemic problems through our process.

With that assessment, it included actions such as looking at our procedures and processes as they conform to DOE Standard 1189, integration of safety.

We took a look at our existing documents. In fact, we looked at all 14 of our Hazard Evaluation Studies, which covered all the processes, and we looked at our criticality safety process studies, as well, through similar type issues.

And then from that we took a look to see what would be potential causes and what would we need to do in the future.

From the review we specifically looked for issues such as did we use initial assumptions properly? Did we, in fact, consider all possible events as we were doing the hazard evaluations, all possible hazards? And we, in fact, prescribe a set of controls that the engineer designers could easily understand and implement into the design.

So we've conducted those reviews. We have since completed revisions to our safety documents,

which culminated in the recent issuance of our Preliminary Safety Design Report that we issued last week.

With that we found a couple things. One, we did have, in fact, a full set of hazard evaluations, but they did have weaknesses. Some of the weaknesses did not result in any impact on our control set, but there were some things that we identified, particularly with some energetic events that required us to add additional controls in the system level, within our PSDR.

The primary weakness that we established, primary causes, if you will, established in looking at our documents, kind of stem from two areas.

One was the fact that we had a late initiation of our fire analysis, and that analysis was not as robust as it needed to be; and, therefore, the scenarios associated with some of our fire analysis did not get carried forward through development into the PSDR.

The other area is really what I would call more of a systemic issue, and it's really -- really related to what I call a decades old series of experience associated with doing hazard analysis on existing facilities, and not doing hazard analyses on

new design.

We are working to the plant procedures, which were oriented around doing hazard analysis at an existing facility. And that constitutes a mind set that something is already there and I'm evaluating the hazard associated with something that's already there.

But when you take a look at doing new design, you really have to be leading the design. You can't be lagging after the the design. You have to be establishing the requirements that the designers know what they need to do, and then in that cycle the designers need to go ahead and incorporate it, and then you go through a confirmation stage, where you take a look to see if your controls were, in fact, met as you intended them to be. And you continue to refine that process until you finish all the way through final design.

And that's what was lacking at UPF was a mentality that the procedures were still on the operational level, rather than the new design. That's kind of a attributed to the factor that we've gone certainly in my career, I think 40 years since we've been doing any true new design of nuclear facilities. And so when you have a lot of very talented, good engineers that have grown up in evaluating existing

operating facilities, you have to kind of change that mind set, and that's what we've worked to do with our processes.

The other thing that we did besides changing the processes is we brought in some senior leadership that have been through the new design now, and so we've done that with both criticality safety and facility safety.

CHAIRMAN WINOKUR: Will the PSDR that was recently submitted, Rev. 1, address these issues?

MR. KIMBALL: Yes, sir. We have -- in particular we went back and we revised the HES's and took a look at those scenarios to make sure that we took proper consideration for the initial conditions, to make sure -- in particular we spent quite a bit of time refining the control set to make them extremely specific, associated with the maturity of the design.

We spent time taking a look at design modifications that occurred since we did the last PSDR to see if they had any impact on the control set or introduced any new hazards. We -- so we fully got into the PSDR.

We also revised our change control process, specifically so as design changes occur, we have established a set of questions which will flag to

facility safety and criticality safety, anything that could impact hazardous materials, whether it be the change of inventory or whether it be the change the type of materials. Or whether it changes any fundamental control set, or in particular changes in safety design strategy, and that's been the good part, is that we have had a robust safety design strategy, and we have stuck with it.

CHAIRMAN WINOKUR: So you're confident that even though you're going to potentially -- not potentially -- you are going to redesign this facility, that this PSDR, that the hazard analysis studies are accurate and up to date and consistent with what I imagine will actually be a new PSDR that really reflects the redesign; is that -- am I looking at that correctly?

MR. KIMBALL: Let me answer that in two methods -- The PSDR that we have has got a very good foundation, all the way down through performance criteria on the process systems. The changes that are about to occur associated with the building optimization and fit largely fall into two areas.

Those two areas we are elevating the structure to make room for what we call commodities, HVAC ducting, electrical, raceways, water supplies and

so forth.

The other area is in relocation of systems, but it's not in the redesign. It's not in the redesign and the processes. The hazards aren't changing and the control schemes are still good. We'll be taking a very close look to make sure that any new issues that pop up we will have to address.

The second area is the fact that we've never stopped doing hazard evaluations, and we've never stopped doing criticality safety evaluations. We proceed in parallel with design, as design changes, and we continually update.

And a great example of that is associated with our chemical processes. The original Hazard Evaluation Studies that were done, were done with a what-if methodology, because it was early in conceptual design.

But from lessons learned, we know that as you get into final design, the devil is in the details. And so we have shifted our hazard evaluations to the more complex HAZOP methodology, which goes component by component looking for failure modes.

That work has been ongoing for over the past year, so we're continually feeding design through this

process, so as we get into the new design efforts, we will continue to follow-up.

CHAIRMAN WINOKUR: Thank you. Dr. Mansfield.

DR. MANSFIELD: My question is going to be on the safety design strategy for UPF. And because you're outlining a number of safety goals that reflect desired safety improvements in over three existing facilities, Mr. Haynes can you please summarize the key goals and discuss how UPF is going to achieve that as far as safety design strategy?

MR. HAYNES: Members of the Board, one of the things that this team is most proud of is the fact that the work that we do, which is the design of the UPF Project, is going to make such a fundamental difference to the safety of the entire site, and the Chairman mentioned that earlier in his comments, as have others.

The improvements are partly a consequence, of course, of replacing a 70-year-old building with a new building. Of course, it's designed to modern safety standards. The building is fragile right now, 9212.

What our intention is to create improvements in the safety profile for the site, through two

things. One is getting the design right, having it very conservative, having it done on time, and then secondly, getting the right people with the right level of nuclear and operating experience, people that have some scars from doing things and learning some lessons on other jobs there on the job.

The panel that you see here has 180 years -- we're getting pretty crusty -- of experience in nuclear operating facilities and design of these sorts of facilities, so that's a big part of it.

But you have to build, first of all, a design that's focused on achieving those improvements, and I think there's some specific ones I can mention. One is we are designing a structure that is very robust, that is designed to the highest seismic design qualifications. It's designed to withstand natural phenomenon, earthquakes, floods, tornadoes, things that seem to be happening more and more these days.

And it's a sound facility and thus, we think, can accommodate without a major amount of change due to things like the space-fit challenge that we have, where we're going to thicken the walls.

We are designing in a nuclear grade fire protection system, with its own water supply, dedicated water supply, to take care of obviously

protect us from fires, including fires from an earthquake situation.

We're designing a nuclear grade confinement ventilation system to make sure that we filter all effluents from the project and that we protect our workers with a tiered approached to confinement ventilation.

We're building in engineered controls, a lot more than currently exist. There's a lot more administrative controls in current 9212 facilities, so we want to go to engineering controls.

We also want to go with the full sort of most up-to-date set of environmental controls to protect the air and water in the area.

And then I think very importantly, not last, but very importantly is the fact that we're designing this facility with full input from operations and maintenance, security and the other major stakeholders at Y-12. And that allows us to get the input early, to build it in, and to find ways to minimize the exposure, radiological exposure and chemical exposure, that our workers at Y-12 face today.

So we make those improvements. They're very substantial, through the design process itself and the focus and the guidelines that we set.

I also just want to take one second to mention that you do it through people, and it's a critical resource today, people who actually have nuclear operating and nuclear design experience, and I just want to tell you a little bit about the people around me, so you know who's accountable, what roles they have.

CHAIRMAN WINOKUR: I think we understand that right now, basically who they are. I appreciate that very much. You can submit that for the record, but we have some questions we'd like to do and I think it might be best right now to just move on. Dr. Mansfield.

MR. HAYNES: Yes, sir.

DR. MANSFIELD: We wouldn't have ask you up here if we didn't know that.

MR. HAYNES: Yeah, but it's not the people but it's the way we are -- the accountability and where it lies is what I wanted to do.

DR. MANSFIELD: The protection of the worker and the public is going to involve -- gloveboxes. Mr. Gertsen, can you tell me what areas of gloveboxes are going to have high advantage and what areas they are going to perhaps not be as useful and may be eliminated?

MR. GERTSEN: Thank you, Dr. Mansfield. Am I on? Okay. UPF has taken an approach since its inception to protect the workers better than we do today, and so we use a variety of containment strategies to accomplish that function. In many cases it's gloveboxes. In other cases it's hoods. In other cases it's areas we've called maintenance access enclosures. In other places it's what we call walk-in enclosures. And we use integrated safety management as our basis for making those decisions, balancing protecting the worker, control of contamination, product quality, fire protection and, of course, operability and maintainability of our processes.

What you'll see relative to the specifics of your question are that in many areas where we have gloveboxes today, we continue to have gloveboxes in the future. Most of those were driven by product quality reasons.

And then in some of our higher exposure operations we have put in gloveboxes in order to protect the worker. And at other places we've used some of those other mechanisms. I gather from the nature of your question and the prior comments and the testimony of Mr. Stokes, you now understand that we're currently revisiting some of those decisions, and

using those same criteria and looking back at those. So far we have made one decision to change an approach to how we provide protection in the assembly area, and we did eliminate that glovebox.

But we didn't abandon engineered controls. We did it by using alternative engineer controls that still protect the worker, and that particular operation is a low-risk operation today. We don't face significant exposures in that operation today.

Most of what we've looked at on UPF we plan on leaving the same. There are two areas we're continuing to evaluate today, which are approaches to part transport and machining itself, and then over in castings, ancillary functions and some of the storage and transport functions, but not the core of casting itself.

And the outcome of those studies will be coming out this following month.

DR. MANSFIELD: I can assure you, we'll keep asking that question.

MR. GERTSEN: I'm sure you will.

DR. MANSFIELD: It's very important. Thank you, Mr. Chairman.

CHAIRMAN WINOKUR: Ms. Roberson?

VICE CHAIRMAN ROBERSON: Thank you, Mr.

Chairman. Mr. Kimball, you just explained what led to the re-evaluation of a seismic accident, including consideration for post-seismic fire scenario. That resulted in the determination of the radiological consequences exceeded 5 rem; and, therefore, you looked at, you considered safety class controls, is that correct?

MR. KIMBALL: Madam Vice Chair, that's correct.

VICE CHAIRMAN ROBERSON: What were the specific safety controls that were elevated to safety class as a result of that review?

MR. KIMBALL: We took a look at first of all what controls would have the most overarching effect in terms of mitigating a seismic event, and we gave preference in accordance with our safety design strategy of passive engineered over active engineered features. And two, two that quickly bubbled to the top was the structure as the safety class structure, that's already designed to the maximum robust design criteria for seismic.

Then the other was the fire barriers. In particular, we already have identified our interior structural walls and safety significant fire barriers and determined that if we upgraded those to safety

class, we provide further segregation and protection of our material to limit anything that might be involved in an event and keep it from spreading --

VICE CHAIRMAN ROBERSON: Okay. Mr. Gertsen, I guess in my view the project has really identified safety class controls a little late in design. What are the potential impacts to the project schedule from incorporating these changes?

MR. GERTSEN: I'll give it a general answer and then ask Mr. Mororwski and Mr. Seely to give a better answer.

In general, consistent with the testimony you heard from our federal counterparts, we viewed the move toward safety class controls for structure and fire barriers as being a relatively low impact, and -- fortunately it was consistent with our safety design strategy, as Mr. Kimball just mentioned. And so we felt it was a win-win, and that's why we recommended it, but relative to the specifics of implementation details, I'll refer to Mr. Morowski.

MR. MOROWSKI: Thank you. In terms of the impact to the building and the analysis, the seismic analysis of the building will need to be redone, and that will be done in conjunction with the solution we have going forward for space-fit.

In terms of fire barriers, the upgrades we see here are relatively minor. We will need to add some redundant fire doors and some redundant hampers and ductwork for supply fan.

Aside from those things, that's the essence of what we have to do to go forward.

VICE CHAIRMAN ROBERSON: Thank you. Do you have something?

MR. GERTSEN: I think what's important to note here is one of the reasons the impact is small for these potential changes is because we were very conservative in the seismic design criteria that we used, even though we were at the safety significant category. We identified as the seismic design criteria three as our design basis, and so when we went to safety class, we did not have to increase that. And that conservatism is one of the reasons the impact now is not as great as it could have been.

VICE CHAIRMAN ROBERSON: And you're making other changes for other reasons, as well, so it's a convenient time?

MR. GERTSEN: Correct.

VICE CHAIRMAN ROBERSON: Mr. Seely, we haven't had the opportunity to review the Preliminary Safety Design Report. We have seen the cover letter

but we haven't reviewed the document. We're assuming these safety class controls are going to be clear. We're going to find those in the Preliminary Safety Design Report laid out very clearly, as you did in your letter, right?

MR. SEELY: Yes, ma'am. That's correct. Let me just recap what they are, and to reinforce the stability, as Mr. Kimball and Mr. Gertsen have described the core of our control set.

So a robust structure that will withstand a seismic event, fire barriers, a sprinkler system that seismically qualified, and a ventilation system that has three levels that was discussed earlier and criticality safety, SSCs, so I clearly pointed out in recently submitted PSDR.

VICE CHAIRMAN ROBERSON: And let me ask you one last question. Mr. Kimball explained how we got here for this specific control set. I imagine you probably don't want to have any other surprises like that. So what are you doing to make sure that the control set is the right control set, and you don't have a recurrence of this scenario?

MR. SEELY: I think that the control set and Mr. Kimball can expand on my answer if he likes -- I think the control set has been stable, the control set

in recently submitted PSDR's is very similar to the previous submittal.

And in terms of -- I think you're referring to the gap between design and safety. In terms of making sure that that gap is narrowed, as Mr. Eschenberg said earlier, the PSDR is a key stone.

And one of the reasons that it's narrowed is, as Mr. Kimball said, design has continued along and development of safety basis documentation has continued along with design in the last year, so we've continued hazard analyses. We've continued to do criticality safety studies. The safety design integration team has reviewed and approved all changes and all of the PCR's that were submitted since Rev. 0, the PSDR were included in the recent PSDR submittal.

VICE CHAIRMAN ROBERSON: Actually I think it's very helpful, and I was actually asking, as you come closer to the end of detail design and into construction, just what is your confidence in the control set such that you don't have discovery of requirements that could impact the facility design?

MR. SEELY: So I would say that our confidence is high and I would ask either Mr. Morowski or Mr. Kimball to give their opinion, as well? And it's high for really three reasons. One, the recently

submitted PSDR, which aligns with the current state of design very well and minimizes the gap, as was described earlier.

Two, as I said, the control set has remained stable, and so that gives us high confidence. And third, as was mentioned on the first panel, we have much stronger leadership and safety basis management now, starting with the person to my left, which was an important acquisition for the project, and continuing to his two direct reports for facility and criticality safety management.

So his leads are new to the project, as well, and are important contributions in terms of capability going forward.

VICE CHAIRMAN ROBERSON: Thank you.

MR. KIMBALL: Madam Vice Chair, if I may -- a little bit. First of all, the major project risks will be on the facility level systems. You were talking about suppression system, ventilation system and so forth. We have kept with our safety have design strategy. We have designed those to be in a very robust manner.

So changing functional classification while it would be an impact, would not be a major impact from that standpoint.

The second is, the hazards that drive those, we chose to recommend safety class, we did so primarily out of making sure that we stay on a conservative manner, to protect those project risks, because we didn't want to go down too far and find ourselves having to escalate some other facility level controls.

So we've taken all that into account.

At this point in time, given our hazards, where we are working is primarily down on the system level, down on component level, which is really where final design of controls comes in. So I'm very confident that we have the control set that we need.

VICE CHAIRMAN ROBERSON: Thank you.

CHAIRMAN WINOKUR: Mr. Sullivan.

MR. SULLIVAN: Thank you, Mr. Chairman. Gentlemen, I'm going to stick right along the same lines in dealing with the safety gap issue of basically how we got here and what we're doing moving forward. And so I'm going to address the question to Mr. Seely.

I appreciate the confidence you just exhibited, but I've heard some things that sound to me like discrepancies, so let me just talk about them, and then you can tell me if they really are

discrepancies.

I heard Mr. Kimball say we -- we continue to do hazard analysis as we go, yet one of the root causes for the problems that he talked about earlier was late initiation of the fire analysis.

You know, I appreciate Mr. Haynes telling the grizzly people up here how grizzly we all are, but as Mr. Kimball pointed out, we haven't done design of new facilities in 40 years, so if I multiply 40 by five, I get 200. I subtract that from 180, I don't get a whole lot left.

And the third thing is that you've talked about you have a new PSDR, PSDR Rev. 1, and a lot of confidence in it, but the first PSDR, of course, had over a hundred significant comments, so I'm hearing these things and I'm comparing it to what I already know, and I'm remaining unconvinced.

Is there anything else you can tell me that will convince me that we really have fixed these problems and we are not going to see them moving forward?

MR. SEELY: So if I could start, Mr. Sullivan, and then have Mr. Kimball expand on the answer. So the first thing I would say is I would reiterate my earlier comment about leadership, and

it's more than just leadership. It's the experience in the safety basis world with this category of facility. We have that on the project, actually for the first time in a while, and it makes a lot of difference. It means that the plan that we have laid out going forward is more robust, more realistic and it's adequately integrated with the other milestones in the project, which a year ago, year and a half ago, wasn't the case.

In terms of the second point about Hazard Evaluation Studies, Mr. Kimball can give the details because he actually led the effort, but we performed an evaluation of our HES's based on earlier comments from the customer and the Board about their inadequacy, did an extent of condition review, and made improvements based on that.

And then thirdly, as I said earlier, the PSDR does incorporate -- it's contemporaneous with the current state of design, so it's been going on in parallel with design.

I think an important aspect to note -- I know the Board probably already realizes this, but we are completely integrated in terms of engineering organization and safety basis organization. Our engineering assistant project managers for process

engineering and the people that report to them, and facilities engineering, and the folks that report to them, report to Mr. Morowski, along with Mr. Kimball and the safety basis organization.

So that, engineering and safety basis are integrated under the same engineering organization reporting up to Mr. Morowski.

MR. KIMBALL: This is a very sensitive mike. If I may, be pointed to the specific questions, that I believe I understand you asked. The late initiation of the fire hazard analysis, its root issue was the fact that we did not have an integrated schedule tying in, what we needed for various parts of the process. And we have spent extensive time developing very detailed integrated schedule, so we know exactly which safety document is needed for which part of the design, and when we need the design to feed back into the safety documents.

So we have fixed that problem, because we've done the proper planning with respect to the first PSDR that document was written actually very early in preliminary design, where it had various phases of design maturity, and part of the issues stem from, as I mentioned earlier, fire scenarios, which drove a lot of the technical immaturity for that document.

But the second piece was, the control set was written as if we were still in conceptual design, so it would be very general and it would say we need you to isolate for all this. It wouldn't say how. It wouldn't say where. It wouldn't say what part of the process.

We're no longer in conceptual design. We're obviously at the final design. And so that's what we have changed and made very specific in this PSDR.

MR. SULLIVAN: Thank you. I don't suppose there's anything you can do to make us all younger, is there?

MR. KIMBALL: No, sir, I'm still working on that.

MR. SULLIVAN: All right. Mr. Morowski, have we already integrated the schedule for redesign efforts going forward? I heard the federal panel said that they'll know more in 20 days. I'm asking you as the contractor, do you have any sense for where we are in trying to continuing to do that hazard evaluations as the redesign moves forward?

MR. MOROWSKI: In terms of the schedule, it was solidly built to integrate design with safety as Mr. Kimball described and Mr. Seely described, we know exactly what the links are between those activities we

have a predictable outcome and we can manage our work.

We are still working the details of the whens, and that would be delivered to the customer here later this month.

MR. SULLIVAN: Okay, thank you.

CHAIRMAN WINOKUR: Let me follow up. I mean, you were heading towards final design this month or last month, right? That's where this project was going, and now you're undergoing your redesign. I mean, it seems to me there's a disconnect here. I think that you provided some insight into it, Mr. Kimball, but what was going on? I mean, you're making it sound as if everything was pretty well understood and you've got a lot of good systems in place, but this project, what we heard six months ago, was going to be in final design right now at CD-3, and now we're having a lot of discussions about other things, and so Mr. Gertsen is shaking is head, saying this project was not going to be in final design, so I -- why don't you just help me understand that?

MR. GERTSEN: What I was shaking my head at, Mr. Chairman, was the concept that we would be at CD-3 at this timeframe. From an overall schedule perspective, yes, our goal earlier in the year was to be at 90 percent design at the end of this month, and

we were headed on a path -- would have been tight, but we might have been there, were it not for the space-fit trouble encountered this spring when we were in the low 70 percent design complete.

And as we've discussed today, that has been a significant perturbation to our plans, and while we're still in final design, we will be taking a step backwards. We don't exactly know how far yet. That's the thing we'll know in three weeks, that we can report back to you, but from a big picture perspective, that is where we are and, yes, we understand that we are taking a step backwards.

Relative to the specifics of addressing the space-fit issue itself, I'll still defer to Mr. Morowski.

CHAIRMAN WINOKUR: I don't know whether, Mr. Morowski or Mr. Seely, can you just discuss the space-fit issue and, once again, what the proposed solution to that is?

MR. SEELY: So I'll start and then Mr. Morowski can add, if he likes.

So I think the physical solution Mr. Eschenberg describes earlier, and so I probably don't need to repeat that, and I also probably don't need to repeat the details that we briefed the Board on the

28th of August in terms of what the basis of the solution was. We essentially rearranged some processes and have raised the height of the building.

And there's a couple of important points to make about how we went through that process.

The first point is that we evaluated the entire scope of the UPF, not just the 9212 scope, but we also evaluated areas that are going to be deferred, assembly, disassembly, QE and machining, to make sure that there's adequate space for the processing equipment, for the commodities, that things fit, but also that there's adequate margin to get through the remainder of design as we go out and later in the project and buy vendor equipment and data, to get through the construction portion of the facility, and to provide adequate space for operations and maintenance.

So in terms of evaluating the fit issues and potential solutions, we looked at the entire scope of the facility.

We also used what I would call a very structured approach, which included outside SME's, subject matter experts, so we brought in people from the parent companies and the LLC, from B&W, from Bechtel, from other locations, including Los Alamos

and shipyards, where they deal with these sorts of issues, to look at our issue, to validate it, which was kind of step one, to help us analyze and identify potential solutions, and the suite of those solutions are the ones that I briefed to the Board on the 28th, and we have since selected one.

And then the other thing that we did is made sure that we engaged the stakeholders or, as we mentioned earlier, in particular operations and maintenance, so that we do have all of their requirements met. We do provide adequate margin for when the facility goes into operation.

The other thing that I want to point out, and I think I'm reinforcing something Mr. Eschenberg said earlier, there were several factors in evaluating potential solutions, but first among them were a couple of ground rules. Two, in particular.

One, we were going to make sure that we complied with the design criteria, the project design criteria. And two, the safety basis requirements of the project. So those were inviolate. Those were ground rules that any potential solution had to pass through.

Then beyond that the other evaluation factors would be what's the least impact to the

overall project cost and schedule? What's the least impact to other operational or maintenance type aspects of the project?

And so as we go forward, now that we've selected a solution, I would say that we're confident that the solution is one that I described at the briefing earlier on the 28th of August, as enduring. In other words, there's adequate space for all of the equipment and commodities, and there's adequate margin to accommodate the remainder of the development of design and the unknowns, and to manage those risks when we get vendor information or submittals that are maybe a little bit outside of the envelope, so we have adequate margin, which is a very important aspect in doing this analysis.

So it's an enduring solution, because we now have advanced the process design far enough, so that we have the details that we didn't have in March of '09 when we froze the building in other words, we know the volume and space that, gloveboxes with equipment, processing equipment inside of them are going to take. We know the volume that the peripherals outside of the gloveboxes and the skids that support those glovebox functions are going to take, with much more specificity than we did three years ago.

We've improved the processes, which frankly needed some improvement in how we manage space-fit and margin. We have added additional leadership on the engineering team, all the way starting with Mr. Morowski and then all the way down to the engineering lead that manages the model, the 3-D model on the project.

And so for those reasons I think the solution will be an enduring one.

CHAIRMAN WINOKUR: How significant a modification is this to the building? How would you describe the modification? Is it significant?

MR. SEELY: Yes, sir, I think it is a significant modification.

CHAIRMAN WINOKUR: And the thing I'm hearing here -- I want to make sure I'm clear about it, is that Rev. 1 of the PSDR that was submitted really basically incorporates what we need to know about the safety basis, even with this re-design?

MR. SEELY: I think that that is correct.

MR. KIMBALL: No, sir, the redesign is not included in this PSDR --

CHAIRMAN WINOKUR: That's not quite what I understood you said before, so let me get clear about this. So you just submitted a Rev. 1 of the PSDR. It

was for -- not the present design, because you're going to do a re-design, right?

MR. KIMBALL: It's the processes are being mainly relocated, but the processes aren't changing, so it is still valid for the process areas. So what we haven't addressed in this PSDR would be anything that's new that would be coming out of the redesign. For example, we're moving some things up to utility floor. That necessitates maintaining a physical separation between processes and ventilation systems to make sure we don't have a cross impact there. That is not incorporated in this PDSR, because we're still working through that process.

What we will be doing is taking the building fit solutions and modifying our safety design strategy to make sure we're still adhering to the tenants of safety design strategy. Maintaining the confinement boundaries, maintaining, all of those aspects, and then anything that's unique associated with this change, we will be modifying our safety design strategy.

CHAIRMAN WINOKUR: So, Mr. Kimball, when will Rev. 2 of the PSDR -- when will you submit Rev. 2 of the PSDR that would fully incorporate these additional changes?

MR. KIMBALL: Well, the next plan is to be submitting what we're calling a limited scope preliminary documented safety analysis that will support construction. And that is in concert with the design process.

CHAIRMAN WINOKUR: So it's worth everyone's time to review Rev. 1 of the PSDR, right?

MR. KIMBALL: Yes, sir.

CHAIRMAN WINOKUR: Because it's thousands of pages, right?

MR. KIMBALL: Yes, sir, it is worth it, because again --

CHAIRMAN WINOKUR: I don't want to do that tonight unless it's necessary.

MR. KIMBALL: Yes, sir, it covers the processes. We're not changing the processes. And that's where the bulk of the hazards are. The main impact of this redesign is on facility level systems, but it's not changing -- the hazards don't change the functional classification. It doesn't change the degree of design needs that we have for the systems and those safety functions, functional requirements of the performance criteria is still valid --

CHAIRMAN WINOKUR: Let me turn to Mr. Bader.

MR. DWYER: Mr. Chairman, if I can interrupt

a second before we get away from this, the HES's were updated, some of them were updated when you discovered the problems with them, is that a correct statement?

MR. KIMBALL: That's correct.

MR. DWYER: But let me -- they were updated using what design? It was my understanding that we were actually talking about several different designs here. There's the redesign, there's the current design, and there's the design several years ago, which was the basis for the HES's. Which one do the current ones reflect?

MR. KIMBALL: Yes, sir, that's a fair question and the simple answer to that an easy implementation. We first looked at the baseline design as Rev. 0 PSDR addressed. We then took a look at changes in the design and we looked to see if there was an impact to the control set and we made changes accordingly for that.

In particular there were a few design changes that actually eliminated hazards and it eliminated the need for controls.

We also took a look at our ongoing Hazard Evaluation Studies to make sure that nothing new had popped up where we needed to incorporate in that control set, so from all of that, while the PSDR is

written to the preliminary design if you will the, control set reflects the design as it is today.

MR. DWYER: But if I pull up the Hazard Evaluation Study right now, it's just as likely I'm looking at a study that was done on a two-year-old design, not the most recent, and certainly not following the current effort?

MR. KIMBALL: The bulk of the changes occurred associated with fire scenarios, and that's a brand new document, and it will reflect what we have.

MR. DWYER: Thank you, Mr. Chairman.

CHAIRMAN WINOKUR: Mr. Bader.

MR. BADER: A comment first. I'm looking at five people and I see Mr. Gertsen, who has been here since essentially the beginning, and I'm hearing measured reassuring words carefully spoken, and we have raised similar issues and had similar measured reassuring, careful words said to us before, so I think you understand, we want to see implementation before we accept those.

Let me go to the deferred building scope 9215 and Beta 2E, and the capabilities that you're going to reintroduce at a later date and what I consider to be significant engineering challenges for the project, including potential future space-fit

issues.

Specifically, what is being done to ensure that the project team develops sufficient design information at the preliminary design stage to eliminate the potential for space-fit becoming an issue again for the deferred scope, again in the future? Mr. Morowski?

MR. MOROWSKI: Mr. Bader, let me describe our approach to the deferred scope, to answer your question. First of all, we have a documented formal strategy for how we're doing this.

It leads us down a path to one design facility to accomplish the 9212 scope, and to allow the deferred scope be implemented later. It's in our minds today.

The means to make the engineering decisions are being accomplished through a series of technical studies, where we look at how to transition for construction reasons, how we isolate equipment, how we indeed accomplish that deferred scope.

Today we have not stopped any design of the deferred scope. We are moving forward with that in parallel with the balance of the scope, with 9212. We're going to take the deferred scope to a level of maturity where we can confirm equipment arrangement,

space fit, that we've met the operability, maintainability requirements, security requirements as they apply, and compliance with the safety basis.

Only then can we back off and not complete that design. It will be solidly done before we walk away.

MR. BADER: Let me interrupt for a second. We've heard a prioritization of the deferred scope, will you take different parts of that scope to different levels of design maturity?

MR. MOROWSKI: We will take all the deferred scope to the point where we can confirm, as I said, fit, space, operability, maintainability. it will all be covered before we suspend our activities in that deferred scope.

MR. BADER: When you have taken it to that level, will you look at the safety issues to verify and validate that no safety issues have changed, or if they have, that you will re-integrate them into the overall safety of the PDSA?

MR. MOROWSKI: The answer to that question is absolutely yes.

MR. BADER: Could you give me an estimate or give us an estimate of what percentage of design completion for the particular deferred scopes, you

think that you will have to get to, to achieve what you've just discussed?

MR. MOROWSKI: Percentage-wise --

MR. BADER: Roughly.

MR. MOROWSKI: I think we're clearly to the point where at least 60 to 70 percent design for the basic design. The kinds of things we will finish, we will finish PNID's. We will finish equipment sizing. We will establish requirements for the equipment. Prepare design for equipment skids and for gloveboxes. All of that will be what we complete.

It's the details, fabrication drawings, interconnecting things that really have little impact on the design in terms of fit and function, so that's the kind of work that we won't finish now, but will finish the rest.

MR. BADER: Mr. Haynes, do you think that adequately and completely will cover the integration of design with regard to the outstanding issues in the deferred scope?

MR. HAYNES: Yes. I think the -- I think our approach is sound. Our approach, as Mr. Morowski said, is to continue the design of the deferred scope at the same time as we're progressing the design of the 9212 scope. That allows us to get a firm baseline

in place and then we define the specific cutoff points that are only done after we assure that the equipment fits and that we have a safety basis for the deferred scope.

Go ahead, I'm sorry.

MR. BADER: When you defer scope, there's also the risk that by the time you get ready to re-insert it, you won't be able to pick exactly what you plan to, and it will have changed. Are you going to increase your margin for space-fit uncertainties due to the deferral?

MR. HAYNES: I'll start that and then I'll turn to people that know more than I do about this, but obviously we recognize that there's an indeterminate time before the deferred scope gets installed. We do have a high level of confidence that the equipment or machining, et cetera, that we will install, even in the future, even at that undefined state, will be very similar to the equipment that we're designing now, or the same.

We're not designing new processes here. This is not state-of-the-art equipment. These are upgrades to existing technology and we know them and we've identified them, and we talked earlier about the ten that obviously have to go through the design

maturity, the technology maturity process.

But we have a high level of confidence that we are very close to the specifications of the final equipment. Now, if it goes ten, 20 years beyond the installation date, anything can change obviously, so your point is right on, that we need to consider some additional margin for equipment that we can't specify right now.

MR. BADER: Are you making an effort to specify that increased margin, given the indeterminate date when you put the deferred scope in?

MR. HAYNES: Let me refer that question to Mr. Morowski.

MR. MOROWSKI: We have margin in the layout of the building today to accommodate what we reasonably expect. In terms of the equipment, we will define the requirements. A good part of the equipment on this job, we are actually engineering. Glovebox design, we are doing that design. We are establishing those envelopes. We have control of that and can work within our space and within out margin.

Same thing with a good portion of the process equipment. The equipment we will buy, as Mr. Haynes has said, it's not necessarily state-of-the-art or newly developed equipment. It's things

that are out there today, switch gear, NCC's, fans. We have a pretty solid grip on what those things will look like, and space allowed for them as they get purchased to be appropriate.

MR. BADER: All right, thank you.

CHAIRMAN WINOKUR: Dr. Mansfield.

DR. MANSFIELD: The Safety Design Strategy has a number of strategy goals that reflect desired safety improvements. They are very admirable and we have heard a number of these, but I don't think the public has heard how much you have progressed in the complete statement of your safety improvements.

Could you sketch those out for us?

MR. GERTSEN: Is that for me?

DR. MANSFIELD: Oh, yes, I'm sorry.

MR. GERTSEN: That's actually a great question and I'm pleased to answer it, because it does remind us of the reasons we're building this facility to begin with, some of which we've already hit today, so I won't belabor it.

But we are replacing facilities that don't meet modern nuclear safety standards, and will be replacing them with a facility that is far more robust and has significant improvements in its safety systems. In particular, seismic response of the

building, we'll be building a facility that -- is there an issue? You want me to go on?

CHAIRMAN WINOKUR: I apologize. We may have covered this territory before. We're just trying to get clear about that. Seriously, my apologies to you.

DR. MANSFIELD: I appreciate that. Just give us a second to get it clear. I'm sorry. The last panel we had a number of potential challenges associated with incorporating the deferred scope back into the UPF building, and there are, of course, safety risks with delaying it and staying in the old infrastructure. Mr. Gertsen, could you describe the potential safety-related risks associated with the B&W y-12's approach for executing the deferred scope during the design or operational phases of the UPF?

MR. GERTSEN: Yes, I'll address that at a high level and then ask Mr. Morowski to add or Mr. Kimball actually to add some additional detail relative to the safety aspects of that.

But we recognize that the deferred scope, presents some interesting challenges and we -- as much as we are thrilled to be dealing with the 9212 situation and we're ready to accept those challenges, we do have to design for a state, and which is partial, and all our safety systems have to work

properly in that condition, and then we also have to design to accommodate a finished end state that has all the processes in there, and those same safety systems still work appropriately.

And along the way we will have construction activities inside an operating facility that we have to deal with, and all of that safety risk needs to be defined appropriately and controls implemented and risk accepted through our safety basis processes, and we intend to do all of that, and relative to the design aspects of that, I think Mr. Morowski can provide better detail and relative to the safety basis aspects of that, Mr. Kimball can provide better detail.

MR. MOROWSKI: Let me add, relative to the design, we talked about engineering studies here today. Many of these studies are aimed at the specific question of how do you get from 9212 placed into operation, with that scope in UPF, and get to add additional capability through the deferred scope while you're operating. Engineering studies address those questions. They're not just engineering studies. They're studies really looking much more broadly at the engineering piece but at operations, maintenance, and very important to us construction, as well as a

safety basis.

So we're looking ahead to how we will do that, and that look-ahead, when the studies are done, that gives us the basis or the platform to go build those features into the design itself.

The ultimate documentation of what's in place to accomplish that from the design viewpoint, that takes in constructability and all the other things, will be the design output documents.

DR. MANSFIELD: So you'll have to try to figure out how to mitigate safety risks for solutions you have not developed yet? That's what I think is a difficult problem.

MR. GERTSEN: If I can, I don't think it's as bad as that sounds. I think we know where we're headed and what our design team is doing is defining those two states, as best we know them today, and to tie that in to safety -- and I'm kind of crossing several boundaries here, but we're here talking about integration of safety and design, so we're going to do these studies that Mr. Morowski talked about. We're going to define this partial operation state and this other end state, and then over in safety basis when we do our PDSA to support CD-3 before we go into construction, we will identify very formally the

controls for that first partial state, and then we will discuss a little bit more notionally how we will control and look towards the future for transitioning to that other state.

When it comes to that point in time, when we decide to fill out the rest of the facility and to move or to equip it with the 9215 and Beta 2E scopes, then we will do additional safety documentation, probably in the form of a PDSA. At that point we'll be operating under a DSA that will have these same accommodations in it, and we will then finalize the design under the PDSA for the deferred scope, and ultimately stand that up under a DSA, so I think there's a clear process here, and because we are carrying the deferred scope to a fairly robust or a fairly high level of design maturity, I think we do know where we're headed. Not that there's not uncertainties. There are uncertainties and there are risks and we'll document those, but I do believe we know where we're headed.

DR. MANSFIELD: When will we know more? When will we have more detail? For instance, what machinery will be moved where and how it will be tied into -- what existing safety systems will be tied into or avoided? When will the design proceed to that

stage? Three years? Five years?

MR. GERTSEN: Well, again, I would say in three weeks we'll know better when we put out some dates with the engineering replay, but let me talk where we were before and then you can imagine in your head a date pushing out.

I mean, we were intending to be at 90 percent design now. We were intending to finish design sometime next year, I believe, with a CD-2 approval, originally intended for September of 2013. Design completion sometime in 2013. I forget the exact month.

So it will be moving out from that for sure, but it's not three years away. It's something less than that.

DR. MANSFIELD: It's promising.

MR. GERTSEN: But to be more specific to your question, you know, I can't be specific on the date. When we do finish design and then prepare in parallel, a PDSA to support going to construction, we will have all that data that you just described, and at that point there will be layouts, not just for the base scope, but also for the deferred scope. There will be a firm strategy for how we stand up the safety systems in the partial situation, and there will also

be notional strategy for how we then turn on the rest of it later on down the road.

DR. MANSFIELD: Fine, thank you.

MR. KIMBALL: Mr. Chairman, we have to be up front to ensure that we design our systems to accommodate the fact that we have to do tie-ins later and we know the types of risks, not necessarily the specific risks at this point in time. So, for example, we know construction will introduce new hazards into the facility that we're going to have to protect against. We know that we have to protect our safety systems to make sure that we don't interrupt any of our safety systems during the construction hazards.

And to do that, we know we're going to establish physical barriers to prevent construction from overlapping the existing processes.

So one of the very first steps we are going to be taking is establishing those requirements that have to be fed into the design and put that in the safety design strategy, and that's going to be an outgrowth to the engineering studies, combined with a quick safety assessment as to what that deferred scope will bring to us.

CHAIRMAN WINOKUR: Thank you. Ms. Roberson.

VICE CHAIRMAN ROBERSON: Mr. Kimball, so we know you have -- the project has old technologies or current technologies in the existing facilities. You have baseline technologies you're incorporating into the design, and then there are enhancements and there are technologies with the phase one scope and there are technologies associated with deferred scope.

Can you help us understand how you concluded that the safety-related hazards associated with the technology development processes are mature enough to incorporate into the safety basis?

MR. KIMBALL: Yes, ma'am. The good news is that the new technologies that have been selected actually reduce hazards dramatically. So, for example, we have far less uranium solution we are handling in those appropriate systems. We've increased separation between the worker and the hazard in other cases.

So there actually is a benefit because it makes it easier to evaluate. But there are two pieces that are necessary to do the evaluation. The first is what degree we have information regarding the designs associated with these new technologies, and we have quite a bit of information on the designs, we have PNID's, we have layouts, we have processes.

And all of those have gone through a hazard evaluation process. They've gone through a criticality safety analysis and have been summarized in this revision one of the PSDR.

The second element deals with testing, to give us a much better understanding of the degree of the hazard, because that also impacts the type of control we have. And we've had a lot of testing on these technologies, and that's given us a tremendous amount of insight that we have folded in to our hazard evaluation.

VICE CHAIRMAN ROBERSON: Thank you. Mr. Seely, what are some of the major open risks associated with technology development on the project?

MR. SEELY: In the Risk Register, which is what we use to manage overall project risk, most of the technology risks are rated as moderate or low. Most of the higher risks are other things.

As Mr. Eschenberg described earlier, there are over a hundred process technologies in UPF, and only ten of them are at the level where they require developmental program.

Of those ten, six are already at the -- sorry, seven are already at TRL Level 6, and of those remaining three, two of them will be at TRL Level 6

before we baseline -- leaving AIMS as the only one that's not at Level 6.

In the Risk Register there are 15 open risk items that have to deal with technology management, and we track those on a regular basis. I would point out that the one -- the one technology, which is AIMS, that's not going to be at TRL Level 6 before we baseline, will have a technology maturation plan, so that is an answer to a previous question, of how we'll follow that through in terms of making sure that that technology does not present insurmountable risks by the time we actually get to CD-3 and go to the field.

VICE CHAIRMAN ROBERSON: So I guess one last question probably to Mr. Morowski, has the project reserved sufficient design margin to support changes in process technology if developmental activities are not successful? For instance, I know AIMS is in deferred scope but as an example, there may be others?

MR. MOROWSKI: We are not designing the plant in anticipation of failure of the new technologies. Our approach would be to work those technologies and make them successful. With operational benefits and other benefits that are important to the job, so we have not assumed they will fail.

We have in our space margin margined there to accommodate adjustments in the equipment size, and whatnot, so it's there. I can't say carte blanche anything that could come along, you could accommodate, but there is margin in the design to accommodate a reasonable change, yes.

VICE CHAIRMAN ROBERSON: Okay.

CHAIRMAN WINOKUR: Mr. Sullivan has a final question perhaps, until the next final question comes up.

MR. SULLIVAN: I'm sorry. Just what I hope is a short question. Mr. Seely, you talk a lot about the Risk Register. We heard earlier about having a risk identified with the space-fit issue back in 2009 and yet we realized that risk in a big way in 2012. So the question really goes to have we looked at our risk assessment processes in our root cause analysis and are we confident that our risk processes are accurately assessing our risk?

MR. SEELY: The short answer to that would be yes, but I would echo the comments that Mr. Eschenberg made earlier. We could have been -- on the space-fit risk, we could have been more aggressive than we were and we're taking those lessons learned. We've updated our processes.

I would also add to what he said, that there was, in fact, a mitigation identified for the space-fit risk. It was largely to add mezzanines as we needed more floor space. So we manage that risk on a regular basis. We applied the mitigation, and in fact we exhausted it. We reached a point of saturation where we needed more room.

So it wasn't as if the risk was not managed. We used the mitigation to its full extent and exhausted it.

So I would say yes, and in terms of managing these individual technology development risks, we'll use the updated and improved process.

MR. SULLIVAN: All right, thank you.

CHAIRMAN WINOKUR: All right. I'd like to thank this panel very much, Mr. Haynes, Mr. Seely, Mr. Gertsen, Mr. Kimball, Mr. Morowski. We really appreciate your time very much. Thank you.

At this time it is the Board's practice, as stated in the Federal Register Notice, we will welcome comments from interested members of the public. A list of those speakers who have contacted the Board is posted at the entrance to this room.

We have generally listed the speakers in the order in which they wish to speak. I will call the

speakers in this order and ask the speakers to state their name and title at the beginning of their presentation.

There is also a table at the entrance of the 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. I think we're done with that process now. They will follow those who have already registered with us in the order in which they have signed up.

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

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

With that, we're going to begin. We want to thank all members of the public who have come here and been part of this discussion today, and who have come here to provide public comment.

Before I call the first name on my list, let

me just say that we do have a couple of letters that have been entered into the record. One of the letters is from Mayor Terry Frank from Anderson County, and we also have a letter from Vic and Gail Macks, so if they're out there in the audience, the letters you have sent the Board in relation to this hearing will be entered into the formal record of the hearing.

The first speaker, the person on our roster of speakers, is Mayor Tom Beehan. Welcome, Mayor.

MAYOR BEEHAN: Chairman Winokur and Members of the Board, my name is Tom Beehan and I serve as the Mayor of the City of Oak Ridge, Tennessee.

On behalf of my fellow City Council Members and the entire City of Oak Ridge, I want to thank you for the opportunity to be here today to discuss the safety issues related to the Uranium Processing Facility, UPF.

In preparation for this hearing I recently read a report, Defense Nuclear Facility Safety Board, the First 20 Years.

This report prepared by the Library of Congress in 2009, not only describes the technical work and the major recommendations of the DNFSB, but also provides a fascinating history pertaining to the origin of the Board during the waning years of the

Cold War.

The Congressional compromise embodied in the Board's enacting legislation sought to balance the national security needs with the needs of the engender public confidence by establishing a program of rigorous safety oversight within the weapons complex.

The Y-12 National Security Complex is located entirely within the City of Oak Ridge limits. In our city, with a population of 30,000, there's a tradition of strong support for the continued operation of Y-12 and its national security mission as the center of excellence for uranium and other special nuclear facilities.

This Board, however, is predicated on the safe operation of the Uranium Processing Facilities and the secure handling of these materials.

The National Nuclear Safety [sic] Security Administration, NNSA, and its contractors have performed exceptionally well over the past decade, as they have undertaken the transformation and the modernization of Y-12.

With safety as paramount, the community's concern, modernization will not be complete until the Uranium Processing Facility is constructed as replacement for Building 9212. While existing aging

facilities can be safely operated until UPF is operational, they are much more costly to safely run than the operating new facilities.

For the safety of our community and many citizens of our city who work at Y-12, another remodel of the aging 9212 facility just doesn't make sense in terms of operational efficiency, worker safety or the protection of everyone who lives in Oak Ridge.

The City of Oak Ridge is committed to strengthening intergovernmental partnerships as we move forward with construction and the operation of UPF. Mutual aid and law enforcement agreements have been established with Y-12 as a framework for effective emergency response, planning and implementation.

Our city staff is working with their federal and state counterparts to ensure the needed infrastructure is in place to support one of the largest public projects ever in the history of Tennessee.

These partnerships are necessary in order to mitigate impacts associated with construction, transportation, security and other logistical challenges such as the relocation of parking for Y-12 employees.

Y-12's highly trained and talented workforce cannot be easily replicated anywhere in the world, and our business community has fostered a culture of safety in Oak Ridge through a program of specialized training and communications.

In partnership with the Environmental Technology and Environmental Business Association (ETEBA), the City just recently co-sponsored the Annual Safety Fest to educate and train workers and the public. You will hear more about these programs later.

On a closing note, I currently serve as the Chairman of the Board of the Energy Community Alliance (ECA), the membership organization of local Governments around the DOE complex.

On (ECA's) behalf I express my gratitude for your outreach to communities across the nation and urge continuing cooperation and engagement with us.

The City of Oak Ridge looks forward to working with the Board and with your Oak Ridge site representative Rory Rauch and William Linzau as we assist in the safe and successful deployment of the Uranium Processing Facility over the next decade.

Together we can fulfill the mission of the DNFSB to establish the national security in an

environment that promotes safety and security for the Oak Ridge community.

I thank you very much for letting me testify.

CHAIRMAN WINOKUR: Thank you, Mayor Beehan. Our next speaker is Dr. William Lyons. To save him a second, he is the Deputy Mayor of Knoxville.

DR. LYONS: Thank you. I'm William Lyons. I am Deputy to the Mayor Madeline Rogero of the City of Knoxville, and I appreciate the opportunity to speak to the Board today. We very much appreciate your coming to Knoxville to hold these hearings, and the Mayor is sorry that she's unable to appear. She has prior engagements.

We wish to express our support for the UPF. It is getting significant support over the last few years, and the conditions that are presently at Oak Ridge we think will -- this new facility will provide great advantages, rather than just upgrading them and will provide for greater safety, not only for people in the Oak Ridge area, but also for people who are working at the plant.

We at the City of Knoxville are full regional partners in economic development, and fully work closely with Oak Ridge and support the efforts of

Oak Ridge and very much support them in their ability to provide the structure and the infrastructure to make this project a success.

This project is needed. We think that the choice of moving to the UPF will be cheaper than expanding the present unit. We think it will be much more effective, much safer for those who are working there, and better for workers, better for the community, and better for the environment.

We also see great economic impact for the area, which is tremendous benefit. There will be an estimated 1500 new workers at the peak of construction, thousands of jobs will be created. These are good, high-paying jobs, many of them good union jobs.

With a significant chunk of UPF dollars going to goods and services, they'll be local, state-wide economic impact and our local businesses will stand to benefit greatly.

Y-12 has had a record of spending three-quarters of its dollars in Tennessee and we see that nothing will change here.

In conclusion, the City of Knoxville wishes to extend its strong support for the Uranium Processing Facility in Oak Ridge and its support of

the City of Oak Ridge in any way we can, as an intergovernmental partner in making this a success.

Thank you.

CHAIRMAN WINOKUR: Thank you, Dr. Lyons. Steven Jones.

MR. JONES: My name is Steve Jones. I'm the President of the Atomic Trades and Labor Council, which represents approximately 2,000 members at the DOE sites.

On behalf of the 1100 members that work at Y-12, I'm here to voice my support for the construction of the Uranium Processing Facility. Our members are doing hazardous work in facilities that are over 65 years old.

The UPF will provide a safer, more secure environment for us to perform the mission that is so vital to our nation's security. Over its 65 years of existence, Y-12 has proven to be a good steward to the environment and a safe place to work. Y-12 is part of this community and part of this local economy.

Labor and management have a good relationship at Y-12 and are committed to solve any problems in order to make Y-12 the model facility in the Nuclear Weapons Complex.

The Atomic Trades and Labor Council support

Y-12 in its mission. We believe that construction of the Uranium Processing Facility will make Y-12 safer, more secure and more efficient. We have highly-skilled and well-trained workforces that are committed to help Y-12 be a model facility.

Construction of the Uranium Processing Facility will enable us to move out of these outdated facilities and continue the important work we have been entrusted to perform.

Thanks for allowing me to share my comments.

CHAIRMAN WINOKUR: Thank you, Mr. Jones. Parker Hardy.

MR. HARDY: Good afternoon, Mr. Chairman, Members of the Board, and welcome to East Tennessee. My name is Parker Hardy. I'm the President and CEO of the Oak Ridge Chamber of Commerce. That's an association of about 600 business interests, with a mission that is focused on enhancing the economic vitality of the Greater Oak Ridge Community.

And as the Oak Ridge business community's recognized business voice, we serve as an advocate on issues such as those in front of this Board today.

If America is to maintain an effective nuclear deterrent capability, it's essential that the work and the work product and the workplace associated

with that deterrent be handled safety, securely, efficiently and economically, and all of our strategy should point to that, and all the strategy should acknowledge the fundamental role to be played by the Y-12 National Security Complex in the new, safe Uranium Processing Facility.

America's Center of Uranium Excellence for weapon maintenance, for testing, for dismantlement, for nuclear naval fuel, for medical isotopes, for downblending, to run modern powerplants, is Oak Ridge, and our community has held that distinction for almost 70 years, and yet today many of the facilities central to those strategies are Manhattan Project relics that are obsolete, that are worn out and that are not conducive to safe, modern processing of uranium, conducted by a talent pool that is acknowledged as the world's best in their fields.

And so to capitalize on that existing talent pool, to capitalize on the existing Y-12 mission and capabilities, and to capitalize on a community culture and that community culture is extremely important, that understands safe uranium processing at every level, it's essential that the modern UPF be built at Y-12 and without delay.

As President of the Chamber, obviously I

can't miss the opportunity to acknowledge the importance of the economic impact that the Y-12 complex currently has on our community and on East Tennessee, and I would be remiss if I did not further stress the projected economic benefits that UPF will bring to our economy. Already about 700 people are engaged in one way or another in this project. It's already been referenced 1500 construction workers and close to 5,000 support jobs will be associated with this project at its peak, and these are jobs that are in the UPF pipeline, creating new business opportunities and new jobs in some 400 companies across America that can help lead to a renewal of our nation's nuclear industry.

Our community is proud to support the Y-12 National Security Complex and we believe in the safety of the UPF mission. We're proud to be the uranium processing capital of the world, and we know that our skilled workforce and our community are uniquely positioned and like no other to make UPF a safe, secure, efficient and economical reality for America's national security.

Thanks for the opportunity to address you today.

CHAIRMAN WINOKUR: Thank you, Mr. Hardy.

James Steven Jones.

MR. JONES: Thank you, Mr. Chairman, Members of the Board. Good afternoon. My name is Steve Jones and I am the recently elected Chairman of the Y-12 Community Relations Council.

On behalf of the Y-12 Community Relations Council I want to welcome you to the East Tennessee area during one of our most beautiful times of the year. I also want to thank you for selecting Knoxville, Tennessee as the site for this hearing.

By doing so, you allow all interested parties to conveniently express their opinions and provide their own insights as to why the urgently needed Uranium Processing Facility should be expedited, allowing the people of our region to become more informed about this important national asset.

Y-12 Community Relations Council, CRC as it is referred to, was created by B&W in 2002 to enhance communication between Y-12, the Oak Ridge community, and the surrounding East Tennessee region.

The CRC is comprised of 31 members from a variety of backgrounds, local, state and federal Government employees, from surrounding cities and counties, business leaders, neighbors, retirees and other stakeholders, all who share a common vision to

support the important national security mission carried out at Y-12.

Y-12 is in Oak Ridge, but it is the second largest employer in East Tennessee, currently employing over 4700 employees and 3300 contractors. They are a dedicated workforce, whose focus has been on our national security and the continuous oversight and 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 another 24,000 indirect jobs are created by Y-12 activities. Y-12's economic impact to East Tennessee and the 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. This impact should provide insight into why there is a regional interest in the success of Y-12's nuclear mission.

Over the past decade we have witnessed a progressive transformation of the Y-12 National Security Complex and commend the NNSA and its management team for those revitalization efforts.

But there is more critical work to be done,

and it should be noted that security and safety of our community and workforce has always been emphasized during any interaction between Y-12 management team and the CRC.

Oak Ridge recently celebrated its 70th anniversary, and almost everyone knows it was the city behind the fence constructed to support the Manhattan Project, which brought an end to the Second World War. Most people here know that the National Security Complex has played an important role in securing America's future by maintaining our nuclear capabilities throughout the Cold War and the modern age.

Today in Oak Ridge, Tennessee, patriotic Americans continue to work towards our national security in those same facilities built in the early 40's, at a time when the military flew crop planes instead of supersonic jets with stealth capabilities, at a time when weapons were dropped instead of guided with precision, using lasers, GPS and internal cameras, at a time when things we took for granted every day weren't even conceived of yet, crucial components of our nuclear capability 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 the same facilities used in the early 40's.

The Uranium Processing Facility, UPF, that we discussed today addresses any and all operational and safety concerns that come with that aging infrastructure.

It will reduce the footprint of the uranium enrichment process by 90 percent, creating not only a more efficient, 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. State-of-the-art handling facilities will ensure only the safest environment possible for workers engaged at the UPF.

In addition, only the highest technical construction methods contemplating natural and manmade disasters, will ensure the surrounding communities that the sensitive materials stored and maintained here, will be done so in a safe and secure manner.

CHAIRMAN WINOKUR: Mr. Jones, could you summarize your comments? We would be happy to accept

your full written statement into the record.

MR. JONES: The sooner the UPF plan is executed, the safer our country will be. The sooner the UPF is constructed, the safer our workers and our communities will be. Y-12 is unique in its mission. No one in the world does what we do and we have grown up -- since I've grown up around this important facility, I'm certainly biased, but I don't think anyone can do it better.

We have an excellent management team in place and workers with the proper experience and work ethic to properly execute that nuclear mission. It's time to address American's nuclear future and begin construction of the UPF.

Thank you.

CHAIRMAN WINOKUR: Thank you, sir. Mike Arms.

MR. ARMS: Good afternoon, Mr. Chairman, and distinguished Board. My name is Mike Arms. I'm the Executive Director of the Association of Tennessee Valley Governments, so that's an organization that supports 500 local Governments in a seven-state region that TVA serves.

Our Board consists of representatives from five states, including County Executive Ron Woody,

Kingston Mayor Troy Beets, Cocke County Vaughn Moore. Each of these elected officials have hundreds of Y-12 workers in their communities.

Now, obviously local Governments love new jobs, but that's not our focus today. Our focus is safety.

In July the Association of Tennessee Valley Government Board passed a resolution in support of nuclear energy. That was a time when TVA was considering restarting its Bellefonte Nuclear Plant, and we went before the TVA Board in support of that restart.

In May of 2012 the Board passed a resolution in support of small modular reactors, specifically the one hopefully be eventually at the Clinch River site in Oak Ridge.

The ATVG Board knows that aggression issues relating to nuclear energy, nuclear fuel, nuclear reactors, nuclear materials, nuclear weapons components or nuclear waste always has great public concern.

We also know, like you know, that no industry is regulated more rigorously than the nuclear industry, and there's an important reason. Any nuclear safety instance sends ripples worldwide. The

impact of Fukushima halfway across the globe was felt industry-wide. Safety must always be a paramount importance in the conduct of operations at Y-12.

And as these facilities age, decade after decade, after decade after decade, sooner or later safety will be a concern, and we can't let that ever happen. We know that any safety-related incident in any nuclear facility, erodes public confidence in all nuclear facilities.

The UPF on the design of the Y-12 complex is a sound economic investment for the U.S. taxpayer. Over its time it will repay the taxpayer by millions of dollars in operational maintenance costs. UPF will also provide a safe working environment for the Y-12 workforce for the next 50 years.

In fact, with the gloveboxes and other protective engineering controls, it will be the safest workplace that's possible, and that's very important. The construction of the UPF will continue the modernization effort that was started with the highly enriched uranium facility. We think that will make the Y-12 plant economically efficient and extremely safe, which is important to all elected officials.

Thank you for this opportunity to speak.

CHAIRMAN WINOKUR: Thank you, Mr. Arms. Kim

Denton.

MS. DENTON: Thank you, Mr. Chairman. I appreciate this opportunity to address this distinguished Board. My name is Kim Denton. I'm President and CEO of the Oak Ridge Economic Partnership, which is the economic development arm of the Oak Ridge Chamber of Commerce. We are charged with recruiting, retention and expanding businesses in the Oak Ridge area.

It's no secret that Oak Ridge has been at the forefront of our country's national security mission since World War II. Oak Ridge must continue this mission and in a safe environment.

Construction of the Uranium Processing Facility will enable us to do just that. Moving forward with UPF is vital to our nation's national security. The need for the Uranium Processing Facility is now. UPF will improve the safety of the workforce, the community and the overall environment.

Older facilities such as Building 9212 were simply not built to withstand natural disasters and are simply unsafe for the critical nuclear security work currently going on. Upgrading Building 9212 is actually more expensive than building UPF, and 9212 can never be a safe, modern, nuclear facility.

NNSA and the UPF team are focused on doing things right. Their focus is on safety, quality and security, which is at the core of everything they do. It's instilled in their culture.

Y-12 is the nation's Uranium Center of Excellence, as has been previously mentioned, something that we're very proud of. HEUMF and UPF will secure the future of America's nuclear security mission. HEUMF, which opened in 2010, as you all know, is America's new state-of-the-art storehouse for weapons grade uranium. UPF will ensure that America's nuclear arsenal remains operational.

To ensure the safest environment, time is of the essence. We must not delay in moving forward with the UPF project. UPF will be a security fortress. UPF will ensure the safest workplace possible. UPF will enable this mission critical work to continue. It's been previously mentioned that the economic impact of this project is enormous.

On behalf of the Oak Ridge Economic Partnership Board of Directors, we strongly endorse this most important UPF project.

Thank you.

CHAIRMAN WINOKUR: Thank you, Ms. Denton. Ralph Hutchinson.

MR. HUTCHINSON: Good afternoon, Mr. Chairman and Members of the Board. My name is Ralph Hutchinson. I'm a coordinator of the Oak Ridge Environmental Peace Alliance. I begin by thanking you for your due diligence on the Uranium Processing Facility to date. Your reports, weekly and otherwise, stand as a beacon of light against the dark void of information provided or not provided by the NNSA, and I hope my comments this afternoon will be heard by you all as an encouragement and not as criticism.

The Oak Ridge Environmental Peace Alliance relies on the Safety Board to hold NNSA accountable for decisions made regarding the UPF. We are behind you as you raise critical safety questions at Y-12. It's important that it's the attention rightly paid to the UPF not resolved in inattention to issues at Building 9212, and other facilities, which as long as ten years ago were described by site management as being operated in "run to failure mode."

I realize hundreds of millions of dollars have been spent modernizing many of these facilities, but still everyone seems to agree that they are not reliably safe. Our concerns about the UPF can only be understood in context. The context in this instance

is the overall capacity of NNSA to competently manage complex operations and projects.

This past week I read a book about several misadventures by BP, from their failure to clean up a site in Kansas to a pipeline spill in Alaska, to a refinery explosion in Texas City, and finally the Deep Water Horizon catastrophe.

In the subsequent investigations a bipartisan commission laid the bulk of the blame at the foot of BP's management. It was management decisions, they said, to cut corners on safety, that led directly to the death of workers on the rig and at the refinery. Decision to save money, decisions to meet time lines, decisions to fudge on safety, when the facts on the ground warrant otherwise.

The parallels with NNSA's management were striking to me. When I read how BP allowed Haliburton to try to fill the deep water well with cement that didn't meet standards, I thought of the NNSA B&W team and their concrete problems with the HEUMF, the sister to the Uranium Processing Facility.

As you well know, the General Accounting Office has measured NNSA's management capacity and it has been found wanton. Your own reports on the decision to forego the PSDR point to a similar

management deficit. To date no one has been held accountable for these significant flaws. The cost projections for the UPF continue to skyrocket toward TBD, to be determined, and no one, no one in NNSA can provide you with a credible cost estimate for this project or even the cost of the redesign that we're learning about today.

They're designing this building around technology that hasn't been proven yet, and of course the whole point of getting to TRL 6 is to eliminate high confidence and get a certain knowledge.

Yet the designers or the redesigners don't have room to fit in all the equipment. Add to this the fact that NNSA has chosen to spend taxpayer dollars on a facility that by their admission will have a 700 percent excess production capacity every year it is in operation.

The NNSA said today, this is an opportunity for us to learn and put our lessons learned into practice. Really? We're just learning on the UPF? B&W's panel counted 180 years of experience but they're still in grade school?

Didn't we already learn about early integration of safety somewhere along the line? Didn't the DOE order teach you anything? The DNFSB

letter in 2009, didn't teach you? Why should we continue to have confidence and hand billions of dollars to a management team when they are so clearly and expensively slow in learning?

The fact that you all have been bold enough to come forward today to claim your deficiencies in public is not an excuse. No one answered the Chairman's question today, "What was going on?"

In short, it's not a stat sheet of a well-managed company. I don't think the problem is with individuals. I think the problem is a deep cultural problem, and we believe that it's important for the DNFSB to connect the dots now, not after we've had a catastrophic failure, whether it's in worker safety or in budget dollars. Not after we've spent more than $10 billion to find we can't incorporate the deferred projects down the line.

In our opinion NNSA cannot be trusted to build and operate a safe, secure, functioning facility. What it can be trusted to do, and I'm almost finished, Mr. Chairman, what it can be trusted to do is to add an additional layer of management between the contractors and Department of Energy. What it can be trusted to do is to get our tax dollars and give them away to corporate sponsors and weapons

contracts by the billions.

Thank you for your commitment to making information available to public on your website. Please continue to ask the hard questions and demand the real answers. Wave the red flag and stop the rush to build until all the safety questions have been answered and integrated into the design of this facility. Please do not compromise one iota on safety, no matter how heavy the political pressures, no pun intended, it's critical.

Please talk frankly and regularly with the public about your concerns about the UPF plan. Tell us things like what your concerns are, what the excavation of concrete backfill will and will not do to ensure the stability of the facility.

We're counting on you and we're backing you. You provide an irreplacable service to the public in this area. Thank you very much.

CHAIRMAN WINOKUR: Thank you, Mr. Hutchinson. Michael Thompson. Michael Thompson. I will call him at the end one more time. Jenny Freeman.

MS. FREEMAN: Mr. Chairman, Ms. Roberson and the other Members of the Board, thank you for coming to Knoxville and for holding this very important

hearing. I appreciate the fact that you're focused only on the Uranium Processing Facility. A significant project such as UPF deserves the light this hearing is shining on it. Thank you.

Thank you too for the opportunity to deliver these comments. I'm Jenny Freeman, Chair of the Oak Ridge Business Safety Partnership, an association of representatives of DOE, NNSA, contractors, subcontractors, labor unions, the City of Oak Ridge -- in short, everybody who works on our sites in Oak Ridge.

We've been in existence since 2004, and our goal is to provide a grass roots approach to the safety of the workers, so that our sites reach and maintain zero accident, zero incident performance. No small feat there.

Over the years we've held 30 community safety forums and this year we hosted our first safety fest. We trained over 300 people from throughout the state, free of charge. We are a safer community and region because of the work of the partners of the OIBSP.

I'll be brief. We support and endorse the construction of UPF, because of the safety element it represents. Oak Ridge workers are engaged every day

in complex and sometimes dangerous work. While our workers are highly trained and experienced, they cannot work safely in unfit buildings and environments.

UPF represents a transformation from the old to the new, from scattered and worn out facilities and capabilities, to a modern, safe environment in which our workers can go home from his or her shift in the same condition as he or she arrived.

Ms. Roberson, I know you'll remember this incident several years ago in 2006, when the worker fell through an operating floor of the K-25 building at a DDTP. He fell about 30 feet, remarkably survived.

The deterioration of the floor had been noted as early as 1995 but those warnings failed to adequate illuminate the issue and with each passing year the problems grew worse. In this single event the magnitude of the hazards to workers' safety at buildings of K-25's age and condition, were powerfully and unquestionably recognized. Operations were shut down. Costs soared, and the mission was delayed until a new safer D and D strategy could be developed and implemented.

I cite that fall event, the last major

accident on the Oak Ridge reservation, as an example of what happens to employees when they must work in old buildings with antiquated engineering, dilapidated infrastructure and out-of-date equipment.

Unfortunately, the Oak Ridge Clean-up Program today is inadequately funded by about $200 million annually, putting 70-year-old contaminated facilities into a deferred maintenance situation that is highly risky, not only for our workers but for the Oak Ridge community and the environment.

However, on the positive side, the DOE complex and the Oak Ridge site in particular, has amassed a wealth of lessons learned in establishing the positive safety impacts of modernization for the worker, the public and the environment, lessons represented by the construction of UPF. At the core of the UPF project is the replacement of many old facilities, contemporaries to the K-25 facility noted above. The UPF will provide a consolidation of functions, capabilities and buildings that will create a safer work environment for the hundreds of people who work there.

Thank you.

CHAIRMAN WINOKUR: Thank you, Ms. Freeman. I may not pronounce this correctly. Wayne Roquemore.

You're smiling, so I know that's not right.

MR. ROQUEMORE: Thank you, Mr. Chairman. Thank you for the opportunity to speak. I'm Wayne Roquemore, representing the East Tennessee Economic Council, known locally as ETEC. ETEC is a 40-year-old organization and our mission is to promote DOE programs in Oak Ridge, and use those programs as a catalyst for regional development.

Among our members are several hundred companies from the region. It's educational institutions, various economic development organizations and civic leaders, both elected and those who volunteer.

Upgrading and replacing facilities within the DOE complex has been an ongoing priority for at least the last 20 years. At ORNL for the last ten years especially, it has been very successful in tearing down old, unsafe facilities and replacing them with new state-of-the-art research facilities.

This has led to measurable improvement in the productivity of the R&D work that goes on at ORNL. At Y-12, the manufacturing facilities have been in dire need of either upgrade or replacement for worker health and safety reasons for at least 20 years. As has been discussed today, the majority of the work

goes on in 9212. The condition of that building and the issues that are represented there are well-documented.

The bottom line is it's old, it's worn out, and it's not going to last forever. The need for a new UPF is today. We agree wholeheartedly with the Board's presentation and discussions today. Getting it right on the front end is critical, again, pardon the pun.

Safety, quality and security cannot be compromised. We believe that the Y-12 team, with appropriate oversight from organizations such as this Board, has the ability and focus to get it done right on the front end and at every step from design through implementation.

We need to get this project done. ETEC supports it, and we look forward to working with NNSA, with the M&O contractor at Y-12 and this Board to be sure that it's done right.

Thank you.

VICE CHAIRMAN ROBERSON: Thank you, Mr. Roquemore. Ray Smith.

MR. SMITH: Thank you, Members of the Board, for the opportunity to get to speak to you this afternoon. My name is Ray Smith. I am the Y-12

historian. I've been at Y-12 for 42 years. Until approximately 12 years ago, I managed various maintenance management functions and 16 years, culminating in a position of Associate Director of the Facility's Management Organization for five years.

At one time during the 1980's and early 1990's I had maintenance responsibilities for the 9212 complex. During that time I personally saw and managed most of it. Many maintenance actions from roof repairs to renovations of various wings, to prepare for various production work changes.

My observation has been that we at Y-12 have succeeded in maintaining a safe working environment and managed to meet the nation's requirements to maintain our nuclear deterrent, even in those aging and often repaired facilities.

Building 9212 was constructed in August of 1945. Now, much of the highly enriched uranium work at Y-12 that began in about 1948 and really started ramping up in 1950, was done in Building 9212. It was one of the newest buildings at Y-12, having been completed, as I say, just at the end of the war.

As the requirements for more weapons work expanded, so did Building 9212. The building was originally constructed with a head house running

generally north and south, with A, B, C and D wings coming off that head house to the east.

The wings were separated by spaces nearly as large as the wings themselves. When the Atomic Energy Commission sent orders to Y-12 to double the capacity of weapons work, a team quickly took a look at filling in the spaces between the wings, adding additional buildings that were either connected to it or built very nearby. An additional wing called E Wing, was added at that time.

The requirements continued to grow when even more expansion was required. New facilities were built inside the wings and it further expanded to include several other new buildings around the original building and the 9212 complex was born and continues to play a central role in Y-12's primary mission today.

A press release from the National Nuclear Security Administration on December the 2nd, 2011, states that the Y-12 National Security Complex received additional -- or I'm sorry, received final approval for a $76 million project that aims to maintain decades old equipment, some dating to World War II, until the site constructs a new facility to ensure that the nation has essential uranium

processing capability over the long term.

This Nuclear Facility Risk Reduction Project includes two Y-12 production buildings. One is 9212, and it will replace items such as steam stations, cooling water, distribution systems, ventilation systems, vacuum pumps, electrical switch gear, motor control centers, transformers and breakers.

The release also said that Y-12 was one of four production sites nationwide that's responsible for maintaining the nation's nuclear arsenal. And, of course, Y-12 also provides fuel to the nuclear navy and research reactors worldwide.

Its facilities are essential for dismantling nuclear weapons and making weapons material available for peaceful uses, such as the production of medical isotopes and commercial power.

My personal observations regarding the remarkable history of the 9212 complex at Y-12 with my role as Y-12 historian, has allowed me to focus on telling that history. There comes a time when a facility must be replaced, because of a number of valid reasons.

The upkeep of the aging facility is a tremendous burden, has been for several years, and will continue as long as the facility is used. A new

designed Uranium Processing Facility would never be designed in the manner that the 9212 complex has evolved to over the years.

Processing facilities in multiple buildings came about as a necessity, not by design. UPF will remedy this.

The history of Y-12 is one of maintaining safe and reliable operations, even in aging facilities, and meeting schedules for keeping criticality safety paramount, and minimizing risk in all phases of operations.

However, the facilities being used now make this a very costly option.

VICE CHAIRMAN ROBERSON: Mr. Smith, would you proceed to summarize for us?

MR. SMITH: I will. Thank you. That same press release concluded with Y-12's National Security Complex maintains and enhances the safety, security and effectiveness of performance of nuclear weapons in the stockpile.

I'm proud to document and tell the stories of the heritage that is the history of Y-12, but I'm even more proud to be a part of the movement into the future to assure the world's freedom through safe handling of uranium processing at Y-12 into the coming

generations.

Thank you.

VICE CHAIRMAN ROBERSON: Thank you, sir. Mary Lentsch. I think I pronounced that right.

MS. LENTSCH: Good afternoon. I'm Mary Dennis Lentsch from Washburn, Tennessee. I live and volunteer at the OREPA Literacy Center and I'm active with them.

I'm really grateful to the Defense Nuclear Facilities Safety Board for holding this hearing and giving me the opportunity to share my concerns about the UPF and safety at the Y-12 plant.

I've lived in East Tennessee for over 20 years, and often people in these parts speak about a pig in a poke, and so what they mean by that is that people are not receiving the goods or the information that they're entitled to. So my pig in a poke today is a concern that I believe that the Uranium Processing Facility that's proposed is an overpriced, oversized pig in a poke.

However, I'm here today to talk about the safety issues related to the proposed UPF. And I have them written on here with numbers; the numbers of the sequence I'll talk about them, and not necessarily the priority that I have for each of them.

The first one is the Preliminary Safety Design Report. NNSA skipped the preparation of a required Preliminary Safety Design Report in a timely fashion, so when you talk about a nuclear weapons facility, safety must be the highest priority.

When it comes to nuclear weapons material, security is a safety issue. Is NNSA compromising security and safety by proposing to build the UPF above ground?

Relaxing criticality safety standards, it seemed that NNSA has abandoned the fundamental obligation to safety in relaxing the criticality safety standards for the UPF, relaxing them to the point that it is no longer protective of worker or public safety.

Seismic integrity is a safety issue, and the public has a right to a clear and coherent explanation of seismic issues related to the design and the construction of the UPF.

Unproven technology are being incorporated into the UPF design in violation of industry best standards. If these technologies don't work, then there will be a need for extensive and expensive redesign.

And lastly, competence and safety design

negligence. Considering the safety issues I raised, my serious question is whether NNSA has the integrity and the competence to manage all the complexity related to the safety design of the UPF.

I'd like to say thanks again to the Nuclear Defense Facilities Safety Board for their vigilance for safety at the Y-12, and also for being a watchdog in the safety design for the UPF.

Thank you.

VICE CHAIRMAN ROBERSON: Thank you, Ms. Lentsch. Carol Green.

MS. GREEN: It is as a United Methodist Sunday School Teacher that I wish to address a deep concern about the seismic vulnerability at the Y-12 Nuclear Weapons Plant. I'm Carol Green and I come as a Peace Justice Ministry team member of the Holston Conference of the United Methodist Church.

The children in my class, in learning about the creation of the earth, understand our God-given role to help take care of it. We became acutely aware of the ongoing nature of creation as we contributed to the needs of Japanese children in the wake of the March 2011 earthquake that devastated the Fukushima Nuclear Power Plant.

The Japanese Government was so certain that

they had prepared against such a tragedy. Our we really preparing for an earthquake that can devastate the Nuclear Weapons Complex in Oak Ridge?

The East Tennessee seismic zone may be a minor zone but it is active. Yesterday afternoon there was another earthquake in Gatlinburg. The 7.7 quake in Mineral, Virginia on the 23rd of August, last year, was the largest recorded one in this zone, and it could happen here.

Frank Munger, Senior Reporter of the Knoxville News Sentinel, reported on the 1st of April last year that the 9212 complex could be significantly damaged and disabled by a five to six magnitude quake. He notes that Steve Wyatt, spokesman for the NNSA, confirmed that an earthquake could potentially compromise the safety measures in place to prevent a nuclear critical to that event involving an uncontrolled nuclear chain reaction and release of radiation.

A month ago in a letter from you, Peter Winokur, although he's not there right now, to the NNSA Administrator, Tom D'Agostino, he expressed the Board's concern regarding the seismic safety and adequacies of the still-evolving plans for the UPF.

Although being designed as a new and

improved bomb plant, he noted the ability of safety-related controls to function after a seismic event is necessary to maintain worker safety. And then he went on to express doubts if the design is correctly addressing this.

I appreciate how the Safety Board has been pressing the concern about this, as we've witnessed today. The chemical and metallurgical research reactor, the CMRR, planned for the Los Alamos National Laboratory, has been eliminated from the 2013 budget for, in part, being sited in a seismically active area.

That knocks off one leg of a modernization triad, leaving the Kansas City Honeywell Plant and the UPF.

For the children of the future and the protection of the earth, the UPF should also be taken out of the budget. The Y-12 plant should refocus on the mission as promised in international treaties, of dismantling weapons, and thus expanding jobs that are sustainable. There's plenty of work to be done.

We hope and pray that the weapons of mass destruction will be cleaned up before there is a seismic shift that could disrupt the whole region.

I thank you.

VICE CHAIRMAN ROBERSON: Thank you, ma'am. Caroline Best.

MS. BEST: Good afternoon. My name is Caroline Best and I'm a member of the Oak Ridge Environmental Peace Alliance. Thank you for your work overseeing the plans and design of the UPF. The public depends upon you to be the safety experts and to provide badly needed accountability. I have no confidence in NNSA's capacity to put safety first.

The rush to build the UPF seems to be pushing everything else, including safety, to the margins. I thank you personally for being the watchdog for safety and accountability. We are all short of money, and I do not want to see my hard-earned tax dollars being wasted on poor decisions.

I am aware that the General Accounting Office has issued two reports with significant implications for the UPF. The General Accounting Office has done a good job documenting the time line problems with pushing design and construction so fast that the unproven technologies are being incorporated into the design, in violation of industry's best practices.

Obviously, this raises safety concerns, as well. I hope the DNFSB will use its powers of

persuasion to call for things to slow down, rather than accelerate, until common sense is also incorporated into the planning process of the UPF.

I appreciate the work you do. Thank you for coming to Knoxville.

VICE CHAIRMAN ROBERSON: Thank you, Ms. Best. Shirley Cox.

MS. COX: Hi. Thank you so much for the opportunity to speak with this distinguished Board. I have written my comments, because I'm so passionate about what I'm going to say, I want to respect the right of those that disagree with me, but stay on my soapbox.

My name is Shirley Cox. I retired from the Y-12 facility in 2004, after 37 years company service there. I worked in various positions in the weapons productions facilities, including the management of the HEU metallurgical operations.

In the later years I was a program manager responsible for weapons material management, storage, disposition of those materials, where I began to plea for the HEUMF.

I have continued to support Y-12 since my retirement, and I've been in most of the HEU production facilities over the past eight years, so I

come to you with a personal interest and commitment for these modernized facilities.

I remember the days when I was in E Wing and those facilities, and was praying that the rains would stop before the distinguished tours came through, so that we didn't have to have buckets out there catching the rain water from the leaky roofs.

I believe enhanced safety features are being designed into the UPF, just as that were done in the HEUMF, the storage facility. And this reduced administrative controls for safety and security and operations. Many, many lessons learned in technologies are being applied since the design of the old facilities that are now in use.

The Y-12 National Security Mission is just as important today as it was during the war. You've heard us talk about several other people speak of those missions, which is so necessary for the vital purposes such as supplying feed stock for the nuclear navy, continuing stockpile assurance for our national security, and providing nuclear materials for many of our nation's research and medical reactors, and other purposes.

While we are really fortunate in Oak Ridge to deal -- Y-12 to deal with HEU versus plutonium, it

appears to me that appropriate safety features are being considered in the UPF or HEU for uranium, not for plutonium.

And on that note, in the past when I was at Y-12 it was often difficult dealing with some of the external reviewers because their background was usually from their plutonium experience, which from a safety viewpoint is extremely different and much more difficult to contend with, and I'm preaching to the choir because you are much more technically competent and knowledgeable on that than I am.

I believe the UPF will have appropriate safety features and controls for these uranium operations. However, the point I'd like to make -- this costly maintenance must continue to be necessary to keep these current facilities operable and the commitment from NNSA and our Congress and everybody else that puts the money out there, has to happen for this funding, over the next decade. It's very necessary to avoid having any potential safety issues in these aging facilities.

In a perfect world funding would not be a constraint to build such an improved facility as the UPF, but I realize we do not live in a perfect world, and often we must work within the constraints driven

by available funding.

With that, I'd just like to say, again, thank you. I appreciate the job you are doing. I appreciate the job the NNSA and the B&W Y-12 contractors are doing. I have total confidence in what they are doing, and I'd like to see us move forward as quickly as possible.

Thank you.

VICE CHAIRMAN ROBERSON: Thank you, Ms. Cox. Erik Johnson.

MR. JOHNSON: Good afternoon, Ms. Roberson and other Members of the Safety Board. My name is Erik Johnson and I live in Maryville, Tennessee. I have been living in East Tennessee for much of 25 years with my wife and family.

Please know that I am grateful for this opportunity that you have accorded East Tennessee in order to address the concerns about the safety of the proposed Uranium Processing Facility, and affording me personally a few minutes to hear my own concerns and hopes for the outcome of this meeting.

From the outset I would like to say that I continue to be awe-inspired by the courage, the wisdom, the faith, commitment and the humility of three dear and kindred spirit friends, who carried

their own hopes for our threatened world onto the grounds of Y-12 Nuclear Weapons Facility on July 28th of this year. Sister Megan Rice, Michael Walli, Greg Boertje-Obed of the Transform Now Plowshares.

They are here with us in spirit. I am of conviction that you, the Board members, have the potential to do what we all must do, the as yet undoable, and that is to seek the safety and the security of our life together, with others here in East Tennessee, and around the world, by stopping immediately the building of nuclear bombs, harken the construction of nuclear weapons facility and immediately dismantling all of our nuclear weapons.

That is the real movement toward critical security for ourselves, our families, and our global family, sharing a common earth home. With each passing day of life, with Social Security becoming more obscure, we are subjected to indoctrination of the myth of security, having heard countless claim proclaiming that we are safer today than ever, trust us.

Many accept such claims almost without question. And why not? There are sanctified reasons to foster the myth. Billions of our dollars are spent on nuclear weapons. Obscene escalation of billions

more dollars are proposed for the new Uranium Processing Facility.

Endorsement of our Government leaders and civic leaders, including Tennessee Senators and Congressmen, these and many other factors are carefully screened through the web of mythical belief that the nuclear weapon facilities are those here at Oak Ridge Y-12 are necessary to assure the security of the United States and the world.

Under such circumstances it is easy to understand why it is hard for anyone in search of fundamental crucial question, particularly those regarding the safeguarding of our plant earth, and our life, ever bothered to explore another path and arriving at safety and security concerns.

Patterned after Hans Christian Andersen tale, the Emperor's New Clothes, the repeated mantra, National Security has dulled our senses to the contradictory reality that we actually live, threats of nuclear annihilation on the global scale, and the catastrophic scale, depletion of national and global resources away from desperately needed funding for authentic security of basic food, education, healthcare, housing, the infrastructures of communities, the care of the environment.

While in this age of illusional security, it is easy to point accusing fingers at the National Nuclear Security Administration at some of their centers. Failure to integrate safety into the design of the proposed UPF and the other things that Steven Stokes talked to this morning -- I mean, earlier this afternoon -- there can be no doubt that broad-scale transformation is needed to assure public safety, beginning with the stopping of the bomb building enterprise here at Y-12 and elsewhere.

Again, it is a nuclear time bomb ticking. There are no places to hide on our shared planet. Where does one go to hide when the bombs fall? We have a creative moment -- you have a creative moment to chart a new course and to think about security that is authentic and work for the well-being of our planet and for our human family and all the -- that we share life together in this journey through space and time.

Thank you very much.

VICE CHAIRMAN ROBERSON: Thank you. Thank you, Mr. Johnson.

Is Mr. Michael Thompson? Michael Thompson? Once again, any other comments from the public?

Yes, sir.

MR. WOODY: I'd like to thank the Board for

this opportunity to host this public hearing. I'm Ron Woody, the County Executive, Roane County. And, of course, a portion of the City of Oak Ridge is in Roane County, however, the Y-12 facility is not.

What I'd like to say, just for a few moments, is we've had a number of publications and discussions at the UPF project in our newspaper and in our newsletters over the last several months. As County Executive, feedback from the constituents in Roane County have been positive. I have previously written a letter to your Board supporting from Roane County standpoint this project, and I would like to make sure that that is included in the record.

I also represent members of the Oak Ridge Reservation Community Alliance, which is a group of elected officials in our community and in and around Oak Ridge, Roane County, Anderson County and Knox County, and would like to just say from our organization we also support this project.

We have an unmatched labor force, as been noted. We also have some unmatched leadership, which I think the UPF project construction and operations, because of our labor force and leadership, shall be a success.

Thank you.

VICE CHAIRMAN ROBERSON: Thank you, Mr. Woody. Your letter will be issued into the record.

Are there any other comments from the public?

With that, I'm going to turn to the other Board members for their closing comments, and then I'll end with my own closing comments. Dr. Mansfield.

DR. MANSFIELD: I have no comment.

VICE CHAIRMAN ROBERSON: Mr. Bader?

MR. BADER: No additional comments. Thank you.

VICE CHAIRMAN ROBERSON: Mr. Sullivan.

MR. SULLIVAN: Just very briefly I'd like to say that this is my first hearing with the Board, and I'm very happy that it was to Knoxville. It's a beautiful city with beautiful people. You all talk a little funny but I will forgive you for that. Thank you.

VICE CHAIRMAN ROBERSON: Thank you, Mr. Sullivan.

First I want to acknowledge the hospitality of the Y-12 National Security Complex and local community. I would also like to thank our witnesses and all of the members of the public who participated in this meeting and hearing.

I particularly want to thank the Congressional staffers, elected officials and other representatives of state and local organizations that contributed or participated here today. An active community with engaged leaders is a vital part of any successful program of this nature.

The mission of the Y-12 National Security Complex is vital to the national security of the United States. A committed and dedicated workforce has successfully performed this mission for over six decades and must continue to do so well into the future.

The safe execution of this mission in the long term, however, is contingent on the transition of enriched uranium operations from Y-12's existing aging infrastructure to the modern Uranium Processing Facility.

Risk mitigation programs by NNSA and B&W Y-12 to continue operations in Building 9212, 9215 and 9204 2E can only be viewed as temporary solutions. The final solution is the successful startup of an operational facility that includes all the central enriched uranium processing and manufacturing processes.

The Board has emphasized many times during

the course of this hearing that the early integration of safety in the design of UPF is our primary concern. This fundamental approach to design, construction and eventual operation of NNSA's Defense Nuclear Facilities is essential to ensuring safety of a public and workers.

In April of this year the Board wrote a project letter to the NNSA expressing its concerns that safety is not adequately integrated in the design of UPF. In this letter the Board identified a series of safety-related issues that require resolution. Resolution of several of these safety-related issues has proceeded, but much work remains before the design is finalized.

Many of the concerns expressed by the Board during this meeting will also necessitate additional management attention to ensure the successful integration of safety into the UPF design.

The Board recognizes that a number of major strategic changes in UPF project execution have occurred over the course of the project. NNSA's decision to alter the critical decision strategy on multiple occasions is impacting the project today.

The decision to defer a significant portion of the original project scope has the potential to

impact the UPF project well into the future. The Board is focused on preventing safety-related issues from continuing to develop later in the design process, or even worse, during construction.

Developing an adequate safety basis for the baseline and deferred scopes is critical to preventing unwelcome impacts on the design, construction and operation of the UPF facility.

Successful completion of this project requires strong performance by the contractor, as well as strong performance of NNSA's oversight entities. The Board views the decision by NNSA to create the UPF project offices, an opportunity to strengthen federal oversight by NNSA, and encourages swift action to enhance available federal staffing.

The Board is committed to continue to work with the Department for its closure of all outstanding safety issues. We believe that every concern and potential safety-related risk discussed here today can and should be resolved before the UPF design is complete. The key is to ensure this resolution is achieved in a timely manner so that operations in the existing aging infrastructure do not continue longer than is absolutely necessary.

To support the eventual safe and reliable

operation of the facility, the Board will continue to focus its oversight activities to ensure the design of the UPF meets the Department's safety-related design requirements and implementing standards.

Further, the Board will continue to focus on the safety of the multi-facility enriched uranium processing and manufacturing operation created by the phased approach of UPF.

This includes the continued emphasis on the safe operation of the existing facilities that will be relied upon far into the future. Once again, I thank everyone for their participation at this hearing.

The record of this proceeding will remain open until November 2nd, 2012. I would like to reiterate that the Board reserves the right to further schedule and regulate the course of this public meeting and hearing, to recess, reconvene, postpone or adjourn the public meeting and hearing, and to otherwise exercise its authority under the Atomic Energy Act of 1954, as Amended.

This concludes the public meeting and hearing of the Defense Nuclear Facilities Safety Board. We are now adjourned.

(Whereupon, at 5:45 p.m., the meeting in the above-entitled matter was concluded.)

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REPORTER'S CERTIFICATE

DOCKET NO.: N/A

CASE TITLE: Public Meeting

HEARING DATE: October 2, 2012

LOCATION: Knoxville, Tennessee

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Defense Nuclear Facilities Safety Board.

Date: October 2, 2012

Sandra K. Ledford
Official Reporter
Heritage Reporting Corporation
Suite 600
1220 L Street, N.W.
Washington, D.C. 20005-4018