



Written Testimony of Mr. Edward Bruce Held  
Acting Administrator  
National Nuclear Security Administration

Before the  
Defense Nuclear Facilities Safety Board  
Y-12 Public Hearing  
Knoxville Convention Center  
Knoxville, TN

December 10, 2013

I would like to thank Chairman Winokur, Vice Chair Roberson, and the distinguished members of the Defense Nuclear Facilities Safety Board for the opportunity to be with you here today. The relationship between the Board and the NNSA is an exercise in good government that benefits all American citizens. As one of those citizens, I have great respect and appreciation for the manner in which the Board carries out its important responsibilities. As Acting Administrator, I recognize that I cannot succeed unless I merit the trust and confidence of the Board.

As many of you know, I am a retired CIA operations officer, not a nuclear engineer. In December 2009, a man I greatly admire, Secretary Steve Chu, called me back to government service to address organizational culture issues that were sapping the mission effectiveness of DOE's Office of Intelligence and Counterintelligence. In June 2013, another man I greatly admire, Secretary Ernie Moniz, asked me to serve as his Associate Deputy Secretary and subsequently to assume responsibility as Acting Administrator pending confirmation of the President's nominee to lead NNSA, retired Lieutenant General Frank Klotz.

General Klotz is widely-recognized as a distinguished, experienced, and wise leader who will make an outstanding Administrator. He is also a good man. I sincerely urge the Senate to confirm Frank before they adjourn for the holidays.



There is yet another man I greatly admire who is particularly relevant to our proceedings today. That man is the late Admiral Hyman Rickover, the Father of America's Nuclear Navy. Admiral Rickover succeeded in building one of the great organizations of the US government because he recognized the argument that budgetary considerations create a tradeoff between nuclear safety and nuclear security is a false argument. Rickover recognized (1) that there can be no nuclear security without nuclear safety and (2) that an uncompromising attitude towards nuclear safety will strengthen the nuclear security mission, not weaken it.

In the rough and tumble environment of Washington DC, recognizing a wise policy position is only the first step in successfully transforming that position into practical reality. To succeed in building an organizational culture of excellence like that of our Nuclear Navy, policy insight must be coupled with a shared leadership ethos, disciplined operational execution, and sustained political support. Admiral Rickover recognized that an uncompromising attitude towards nuclear safety could serve as the catalyst and unassailable foundation for that consistent leadership, disciplined operations, and sustained political support.

We all recognize that NNSA's nuclear security enterprise is significantly different in nature from the Nuclear Navy. Civilian nuclear scientists and engineers are psychologically very different from naval officers. As far back as the Manhattan Project, we recognized that it would be a profound mistake to try to impose the necessary regimentation of military life onto free-thinking scientists.

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



## Aging Infrastructure

Our focus today is on the work performed at Y-12 National Security Complex, work that is vital to the nation's nuclear security. Y-12 is the only place in the United States where the capabilities exist to dismantle secondaries from retired nuclear weapons, to manufacture fuel feedstock for the nuclear navy, to assist in the recovery and stabilization of nuclear materials in support of nuclear non-proliferation, to provide low enriched uranium to research reactors in a form that supports non-proliferation goals, and to perform critical life extension activities for our nuclear weapons deterrent.

The fragility of the aging infrastructure where enriched uranium operations are performed at Y-12 today is worrisome, however. As you noted in your opening statement, Mr. Chairman, these facilities are well past their intended design life and were not built to modern nuclear safety standards.

Building 9212 has been operating for over 60 years and does not meet modern safety or seismic standards. In 2006, NNSA completed a Facility Risk Review to identify measures required to ensure continued safe operations in 9212 for 15 years. This review identified the need to (1) stabilize and reduce the inventory of enriched uranium in the building and (2) invest in practical facility modifications needed for continued safe operations. The efforts and investments to stabilize and reduce inventory have been successful; since the review the amount of enriched uranium solutions stored in safe bottles in specific vulnerable areas has been reduced by 80 percent, exceeding our goal of 50 percent. Moreover, investments to reduce facility risk continue on schedule and budget, featuring the recent replacement of Stack 110, a vital ventilation exhaust system supporting safe nuclear operations in Building 9212. NNSA does not project to continue full programmatic operations in 9212 beyond 2025. Accordingly, we will continue to make selected priority investments in 9212 and work to develop a fully resourced transition plan for required enriched uranium capabilities.



In 2011, an updated Facility Risk Review recommended that NNSA evaluate alternative strategies of managing safety risks in aged infrastructure using new technology. Examples of the new technologies are direct electrolytic reduction and electro-refining. Early research and development investments in these technologies are promising, and NNSA is actively seeking to mature and deploy these two technologies to minimize future waste streams in the Uranium Processing Facility. The use of these new technologies would also allow us to eliminate the use of hydrogen fluoride, significantly reduce the volume of combustible organic liquids, and reduce the risk of a nuclear criticality accident.

Oversight of ongoing operations in 9212 is conducted by the Continued Safe Operation Oversight Team. This is a team of senior experts in engineering, operations, maintenance, nuclear safety, and oversight whose charter is to monthly evaluate a set of facility performance indicators, event reports, and results of aging assessments to look for indications that safety margin is being degraded. The Team meets monthly with representatives of the General Manager and the federal Site Office Manager. The General Manager and Site Office manager are notified immediately of any safety related concerns. A formal report is written annually and provided to NNSA HQ and the DNFSB; briefs are provided annually for NNSA senior leadership and the DNFSB on the facility conditions, concerns, and any recommendations for continued safe operation of Building 9212.

To date the Continued Safe Operation Oversight Team has not recommended limiting operations in Building 9212, but it has noted an increased failure rate of equipment as end of life failures start to be experienced. As equipment fails, production is halted, challenging our ability to continue to deliver components or capabilities to our national security sponsors.

The condition of nuclear safety systems and components is monitored constantly. NPO has Facility Representatives resident in the higher hazard facilities. The NPO Manager receives a daily verbal status report and also receives written reports of any operational issue the Facility Representative or other federal oversight might identify.



We will not operate if it is not safe to do so. It is much better to get behind on schedule, than to have a significant event that may hurt someone and may prevents any work from occurring during recovery from the event. In short, we make conservative decisions with respect to operation.

The above focus has been on Building 9212 but the other enriched uranium operations facilities at Y-12, Buildings 9215 and 9204-2E, are also aging and require investments. Facility Risk Reviews were performed for both of these facilities in 2007. Strategic investments were identified for Building 9204-2E and maintenance investments were identified for Building 9215. An update to the Facility Risk Reviews for these facilities in 2012 identified the largest vulnerability to continued safe operation to be aged electrical equipment, which increases the likelihood of fires from equipment failure. Within available resources, NNSA will seek ways to accelerate funding of priority program and infrastructure investments. In the meantime, the Continued Safe Operation Oversight Team has expanded its monitoring and reporting to include Buildings 9215 and 9204-2E.

In summary, stabilization and reduction of enriched uranium inventories, investments in practical building modifications, and deployment of new technologies are stop-gap measures that enable continued safe enriched uranium operations at Y-12. However, the need to transition to a new facility that meets modern nuclear safety standards is a matter of increasing urgency from both a worker safety standpoint and a programmatic risk standpoint.

### Transition to a New Uranium Processing Facility

While working to extend safe operations in our existing facilities at Y-12, NNSA is also working to transition to a new Uranium Processing Facility that meets modern safety, security, and natural phenomena standards while improving efficiency of operations. Transitioning out of Building 9212 as expeditiously as possible is our first priority because



it is essential to maintaining continuity of enriched uranium capabilities required to meet mission needs. As design work on the Uranium Processing Facility matures, NNSA will make near term investments in enriched uranium capabilities and infrastructure necessary to ensure continued safe operations. At this time, NNSA does not expect to transition out of Buildings 9215 and 9204-2E is not envisioned until 2038 due principally to budget constraints.

Integrating safety into design of the Uranium Processing Facility project is essential to the success of the project. We have learned many things regarding improving the integration of safety into design including the need for enhanced configuration control and supplemental safety basis documents. We have also included an evaluation of opportunities for improving the NNSA's safety basis review and approval process to ensure we are employing the best processes for this critical function. We are endeavoring to resolve open technical issues about the project so as to manage technical risks prior to final authorization of construction. As we continue maturing the technology and design we are developing more certainty on the costs and the challenges this presents in today's budget environment and will continue to focus on a plan that minimizes the risks in 9212 and the other facilities as quickly as possible.

### Emergency Preparedness and Response

The emergency management program at Y-12 is already robust but we continue to improve our planning and preparedness posture in order to strengthen our capabilities to respond to the unique challenges presented by severe events. Response plans have been revised to address these severe events and exercise plans have been updated to include relevant scenarios. We have expanded our technical planning basis to include multi-facility events. Facility and equipment improvements are also being pursued and mission need for the new Y-12 Emergency Management Facility was approved in July of 2012. Recent exercises conducted at Y-12 have addressed the loss of commercial power and exercised response capabilities with no mutual-aid support. We can discuss more of these details in the panel this afternoon.



## Nuclear Operations and Oversight

I want to take this opportunity now to share with you the ongoing efforts of the Department of Energy related to work planning and control. The Department and NNSA continue to focus on managing work through the five core functions of Integrated Safety Management – Defining the scope of work; Analyzing the hazards of the work; Implementing Safety Controls to address the hazards; Performing work within the controls; and Feedback and Continuous Improvement. The Department has issued for internal review a Handbook that defines performance expectations for effective implementation of work planning and control processes and a Guide for Federal oversight of work planning and control. We expect to have these tools formally issued and available for use in 2014. We will talk later today on the progress being made to improve work planning and control at Y-12. In short, improvements have been continuous since the Board’s December 2011 letter. Federal oversight of work planning and control at Y-12 is more frequent, formalized, and effective today due to an increased focus in this area.

Also, I recently aligned the NNSA Field Office Managers to report directly to the Office of the Administrator. I did this to remove any barriers, either real or imagined, that could inhibit the timely communication and understanding of Field Office Manager concerns to the Administrator’s office. The Field Office Manager is responsible for the day to day oversight of the hazardous and vitally important work that is done at Y-12. It is essential that any Field Office Manager concerns be unfiltered and shared in a timely manner to inform my decisions and actions.

Before closing, allow me to recount a short vignette.

On my first day of national service 38 years, 2 months, and 4 days ago, it was inconceivable to me that during my lifetime America would win the Cold War, re-emerge as an energy independent country, or witness our elected Congressional officials intentionally shut



down the US government. All three have happened, the first two of which we can rejoice over.

Nobody should be rejoicing about the government shutdown, least of all those of us in NNSA. But there was one positive outcome of that otherwise negative situation.

On October 7, the NNSA senior leadership team was at a loss on how to proceed in face of all the political and budgetary uncertainty. In the midst of at times heated debate, Don Cook, the head of Defense Programs observed quietly but firmly that NNSA's overriding responsibility to the American people was to assure nuclear safety and to fulfill that responsibility we needed to initiate an orderly shutdown of America's nuclear weapons complex. That is a weighty decision, never before taken. But everybody in the room instantly recognized the wisdom of Don's statement and that is what we did. Although we expected pushback from some quarters, we were pleasantly surprised that there was, in fact, very little. It seems that amidst much controversy, uncertainty, and stress, everybody recognized that assuring nuclear safety, first and foremost, was simply the right thing for NNSA to do.

Thank-you.