Turner, however, suggested that the U.S. would be better served by abandoning the goal of a nuclear weapons-free world, citing the increasing threat of nuclear weapons proliferation around the world. "We know the threat of nuclear weapons is actually increasing by the number of countries that are seeking and or possessing nuclear weapons technology," Turner said. "That threat does not appear to be decreasing. So I'm very concerned as we try to translate what should perhaps be a stated dream into an actual goal or policy that affects both the role and numbers of our strategic deterrent. Instead of just being something we are advocating for on the international stage, we're actually looking to our national policy and changing as you said the roles and numbers of nuclear weapons."

The Administration has tried to find the balance between maintaining the stockpile and reducing the salience of nuclear weapons, and the requested FY2011 funding boost would provide significant money for the agency's work on the weapons stockpile, supporting the ongoing W76 refurbishment program as well as refurbishment studies on the B61 and W78 warheads. It also provides significant investment in science and technology at the national laboratories, and endorses construction of two major facilities officials say are necessary to modernize and consolidate aging buildings: the Uranium Processing Facility planned for the Y-12 National Security Complex, and the Chemistry and Metallurgy Research Replacement-Nuclear Facility planned for Los Alamos National Laboratory.

Chilton Happy With Nuclear Investment

Gen. Kevin Chilton, the Commander of U.S. Strategic Command, has long called for additional investments in the nation's arsenal and weapons complex, and he told the House subcommittee that the Administration's budget request was a good start to maintaining the nation's nuclear deterrent. "To have a first-class nuclear deterrent you must have a first-class plutonium production capability and a uranium production capability," he said. "The investments in this budget that start to improve the infrastructure at Los Alamos as well as at Oak Ridge are absolutely fundamental to enabling the capability I've talked about in the past."

He also voiced support for the Stockpile Manage Program, the Congressionally directed program that grew out of the defeat of the Reliable Replacement Warhead program. Authored by the House Armed Services Strategic Forces Subcommittee and included in the Fiscal Year 2010 Defense Authorization Act, the program allows for a tailored approach to maintaining the nuclear weapons stockpile within a set of guidelines that would preclude the addition of new capabilities for warheads or a need to return to underground nuclear testing. Chilton said he did not see a need for new military capabilities for the weapons stockpile or a need to return to testing, but said it was important to preserve the ability to make certain changes to the stockpile, potentially to increase safety, security and effectiveness, especially as the size of the stockpile decreases. "We should not constrain our engineers and scientists from developing options on what it would take to achieve the objectives of the Stockpile Management Program," Chilton said. "Let them bring forward their best recommendations for the President and then let the Congress assess what is the best way forward." In his written testimony, Chilton said he supported refurbishment studies not only on the W78, but also on the W88 submarine-launched warhead, for which the Administration did not request funding in FY2011. The W88, which is getting new pits as part of Los Alamos National Laboratory's reconstituted pit production capability, isn't expected to be refurbished for nearly two decades.

Conventional Not 'One-for-One' Substitute for Nukes

Chilton said he supported the move toward using more conventional forces for roles previously occupied by nuclear weapons, like the Prompt Global Strike capability currently being explored, but he stopped short of saying that conventional weapons could fully replace nuclear weapons when it comes to deterrence. The Pentagon is currently studying the appropriate mix of conventional versus nuclear weapons, Miller told the panel, but Chilton offered a note of caution. "We have to be careful when we start talking about one-for-one substitutions of conventional weapons for nuclear weapons," Chilton said. "When it comes to the deterrence mission—not the war-fighting mission necessarily, the deterrence mission—nuclear weapons have a deterrent factor that far exceeds a conventional threat. We have to be very careful in our discussions … when we start looking at these options."

Chilton said the Prompt Global Strike capability should be "an additional weapon in the quiver of the president," but not the only option. "The connective tissue between that and the one-for-one exchange for a nuclear deterrent, I'm not quite there," he said.

—Todd Jacobson

DEFENSE BOARD RAISES CONCERNS ABOUT NNSA SAFETY CHANGES

DNFSB Worried That Ruling at Los Alamos National Laboratory Sets Precedent

The National Nuclear Security Administration's inadequate handling of nuclear safety at Los Alamos National Laboratory's Technical Area 55 could be setting a precedent that raises the risk of radiation releases at other sites,

according to a March 15 letter from the Defense Nuclear Facilities Safety Board to the DOE. The question is whether the DOE's approval of a Documented Safety Analysis (DSA) at the lab's TA-55 plutonium facility, known as PF-4, despite a calculated accident does in excess of 25 rem to the maximally exposed member of the public off lab property, could allow similar decisions at other facilities, according to DNFSB vice chairman John Mansfield, the letter's author. "Our concern was mostly PF-4 but they seem willing to approve other DSAs with mitigated consequences greater than 25 rem," Mansfield told *NW&M Monitor*.

In essence, the letter argues, the NNSA's handling of safety at PF-4 suggests the agency has determined that portions of DOE Standard 3009, the implementation guidelines for developing DSAs, are optional. In particular, the letter zeroes in on the agency's practices for handling the issues outlined in Appendix A of Standard 309, the section that discusses the parameters to be used in calculating the dose to the maximally exposed offsite individual. "If a contractor chooses to use this methodology," the letter asks, "what part of the recommended approach to safety and the contents of Appendix A for implementation of the Evaluation Guideline are mandatory, and what parts are optional?" The letter continues: "What is DOE's regulatory framework for assuring adequate protection of the public, the workers, and the environment if the methodology prescribed in DOE Standard 309 is used but the goals specified in Appendix A are not achieved? If the mitigated dose consequences to the public … approach or exceed the Evaluation Guideline, what steps or actions must be taken to ensure adequate protection of public health and safety is provided?"

Seismic Concerns Plague Projects

The struggle over how to handle seismic risk at PF-4 most recently was evident in a strongly worded October 2009 letter from the DNFSB complaining that the offsite dose from an earthquake-induced fire at PF-4 exceeded the DOE Evaluation Guideline of 25 rem "by more than two orders of magnitude" (*NW&M Monitor*, Vol. 14 No. 44). Built in the 1970s, PF-4 sits atop a volcanic mesa at Los Alamos in an area criss-crossed by earthquake faults. Work done by lab geophysicists and others in the 1990s led to the conclusion that the area has been more seismically active in the recent past than was previously understood, increasing the credible earthquake threat bounding the safety envelope at the facility and other similar Los Alamos facilities. The same issue has driven changes in the design of the new Chemistry and Metallurgy Research building replacement project, driving up costs there, officials have said.

The PF-4 risk comes from potential ignition sources, such as furnaces, within glovebox lines containing plutonium. In an earthquake scenario, the gloveboxes could shake free of their mountings and crash to the ground, while the ignition sources could start a fire. The resulting radioactive smoke, according to the worst case accident scenario contemplated in the Standard 3009 DSA analysis, could then escape the building. An additional $6.7 million has been allocated to near-term fixes this year to reduce the risk at PF-4, but officials have acknowledged that the resulting worst case accident scenario as calculated using the criteria in STD 3009 is still well above the 25 rem level (*NW&M Monitor*, Vol. 14 No. 7). The TA-55 Reinvestment Project, with includes some money for seismic safety upgrades as well as other work, has an estimated cost of $75 million to $100 million. No firm calculation has yet been done regarding the cost of improvements necessary to bring seismic accident risks below the 25 rem level, but industry experts have said it could cost in the hundreds of millions of dollars.

Board Worries About Reach of New Approach

While the specific concerns being raised apply to PF-4 at Los Alamos, the Board wants to clarify whether a similar approach applies to other facilities. The issues were discussed in a Dec. 30, 2009 meeting between NNSA officials and Safety Board staff, which NNSA followed up with a "white paper" outlining NNSA's expectations regarding how the STD 3009 implementation would be done in the future. "The Board would like to understand DOE's and NNSA's intent; specifically, if the recent regulatory interpretation is meant to apply across all DOE defense nuclear facilities," the DNFSB letter states. The letter asks for information on what other defense nuclear facilities do not have safety controls to reduce the radiation risk to the public below the 25 rem standard, and what the agency has done in response. "By accepting documented safety analyses with calculated mitigated consequences greater than the Evaluation Guideline, DOE is essentially nullifying the consequence-based methodology established by 10 CFR 830 and evident in DOE's practices since DOE issued the rule," the Board wrote.

NNSA spokesman Damien LaVera, in a statement, said the agency is reviewing the DNFSB letter, but he declined to reveal the rationale for the relaxed policy. "The Department has received the Board's letter and is evaluating the concerns is raised," LaVera said. "We recognize that the safety of the public, our workers and the environment is critical to the accomplishment of our national security mission, and that appropriate use of our safety guidelines is key to our safety strategy. After our review is complete, we will provide the answers that the Board has requested."

—Todd Jacobson and staff reports