

MONITOR

NUCLEAR WEAPONS & MATERIALS

U.S. National Nuclear Security Administration ♦ Russian Ministry of Atomic Energy
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NNSA DRIVEN TO BROADEN W78/W88 REFURBISHMENT BY NAVY CONCERNS

The National Nuclear Security Administration is moving forward with a study on creating a common warhead for use on intercontinental ballistic missiles and submarine-launched ballistic missiles, but concerns raised by the Navy over the last year caused the Nuclear Weapons Council to broaden the scope of the study to include a less-ambitious warhead refurbishment as well, according to documents obtained by *NW&M Monitor*. A Dec. 7 memo from Nuclear Weapons Council chairman Frank Kendall outlined the broadened scope of the refurbishment study headed up by Lawrence Livermore National Laboratory, which was enlarged to include a refurbished W88 option based on the current design of the submarine-launched warhead. "At the completion of Phase 6.2, a decision will be made regarding which warhead design(s) will be carried forward into and costed during Phase 6.2A," Kendall wrote. Both options, however, will include surety enhancements as "objective requirements," Kendall wrote.

Up until that point, the refurbishment study was specifically aimed at looking at the feasibility of providing a common W78/W88 interoperable warhead using a plutonium pit designed for the W87 warhead, and integrating the arming fuzing and firing component of the warhead. Such an approach could potentially save money and reduce variants in the nation's nuclear arsenal. But Navy officials registered concern about the plan, with then-Navy Under Secretary Robert Work outlining the service's issues in a Sept. 27 memo to Kendall. Among the Navy's concerns was funding; Work noted that the Navy was not scheduled to begin W88 life extension planning until Fiscal Year 2020, and thus hadn't accounted for approximately \$43 million in necessary funding.

Work, who has since left the Navy, also said the service lacked confidence in the NNSA's ability to pull off the combined warhead, and wanted to delay the effort until the mid 2020s. "The uncertainty of the National Nuclear Security Administration's (NNSA) ability to execute its currently programmed work, as evidenced by the Office of the Secretary of Defense/Cost Assessment and Program Evaluation (OSD/CAPE) of NNSA's program and costs assessments, raises questions as to the feasibility of effectively accomplishing this new emergent work," Work wrote. The NNSA did not respond to a request for comment.

A Potential 'Off Ramp'

In testimony this week before the Senate Armed Services Strategic Forces Subcommittee, Rear. Adm. Terry Benedict, the Navy's director of Strategic Systems Programs, said the Navy is "fully supportive" of the current W78/W88 study, but he noted that the Navy previously had "challenges" with the effort. "I think it is prudent that as we move forward we have off ramps," he said. "This is an extremely technically challenging proposal and I have advocated, and the Navy has advocated, that we do look at a stand-alone 88-1 as a potential off ramp. But the bottom line is we're fully supportive of this effort moving forward."

Nuclear weapons experts have interpreted the memos differently, however. "They just undercut the core argument for NNSA saying they need to do it now," said Hans Kristensen, the director of the Federation of American Scientists' Nuclear Information Project. "It's obviously in the Navy's mind that there is an issue. Frankly speaking it does raise some serious issues about the urgency with which NNSA is talking about the need to get that program started." He added: "Their concern is not just about NNSA this year or next year, or until Congress figures out where

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they are. They're saying we don't need to have this stuff 'til the mid '20s."

Marylia Kelley, the executive director of Livermore, Calif.-based activist group Tri-Valley CAREs, suggested that the requirement to include surety enhancements in both refurbishment options amounted to a "poison pill" that could drive up the cost of both options. The Kendall and Work memos were provided to *NW&M Monitor* by Tri-Valley CAREs. "Depending on which enhancements are included, the Navy may be offered a false choice in which both warhead designs introduce adventurous changes, are inordinately costly, and will keep Livermore busy at deadly pursuits for decades," Kelley said.

Air Force Optimistic About Study

The Obama Administration requested \$72.7 million for the NNSA to continue the study in Fiscal Year 2014, with plans to complete a First Production Unit by 2025. Naval work on the warhead, however, was slowed by budget issues until recently, Benedict told Congress. He said the Navy had been prohibited from doing work on the warhead study under a Continuing Resolution that funded the government through the end of March because there was no previous Navy budget request for the study. "Now that we have an appropriations bill, the Navy is aggressively attempting to solve that, and we will," Benedict said.

At the Senate Armed Services Strategic Forces Subcommittee hearing, Maj. Gen. Garrett Harencak, the Air Force's Assistant Chief of Staff for Strategic Deterrence and Nuclear Integration, said the Administration was making "huge breakthroughs" on a "very difficult and complex set of problems as we look to have adaptable external systems that we could both use in the future," but he also sounded a note of caution about the interoperable warhead. "I think we have to be mindful of the fact that should there come a time where we believe, for whatever reason, that it not be feasible or affordable to do so, that we have the good sense, if you will, to say, 'Hey, we tried it,'" Harencak said. "It may not work for a host of reasons, maybe technical reasons or just the world has changed, so to speak. I think we have to be ready to have some off ramps on that. But right now I remain very optimistic, and I will tell you the Navy is very supportive of what we're doing, and we're working extremely well together on it."

—Todd Jacobson

NNSA WON'T DELAY COMPLETION OF W76 LEP; NEW FINISH SLATED FOR 2019

The National Nuclear Security Administration has scrapped plans to push the completion of refurbished "hedge"

W76 warheads back to 2021 and now plans to complete the entire W76 life extension program—including the hedge warheads—by 2019, according to budget documents released this week. The change comes after Navy officials publicly raised concerns that the decision to push back the completion of the W76 refurbishment program erased any margin in the refurbishment effort. The decision was largely driven by competing life extension priorities, most notably from the B61 refurbishment that is scheduled for a First Production Unit in 2019, but officials with knowledge of the agency's plans told *NW&M Monitor* that the NNSA will be able to refurbish fewer W76 warheads than it planned because of stockpile changes based on new guidance and changes based on implementation of the New START Treaty. The NNSA did not provide any rationale for the change in its budget documents, only noting that the Nuclear Weapons Council voted in January to complete the W76 life extension program in 2019. The agency also did not respond to a request for comment. "This directed change will result in revised targets for the W76-1 LEP activity," NNSA budget documents state. "A Baseline Change Request is in process to rebaseline the program to reflect Nuclear Weapons Council direction on LEP production."

The NNSA requested \$235.4 million for the W76 life extension program in Fiscal Year 2014, a \$37.5 million increase from funding provided under the FY 2013 Continuing Resolution (but without taking into account sequestration cuts). Hans Kristensen, the director of the Federation of American Scientists' Nuclear Information Project, had previously estimated that the NNSA would refurbish 1,200 W76 warheads under the life extension program, and he suggested the agency could tweak the annual production rates on the W76 to finish the program sooner. "We'll probably see in 2018 or so they'll begin to drop slightly to make more room for the B61 and fade out the W76 production in '19 as the B61 comes in," Kristensen said. "They only have so much capability so I think that's how they're thinking about it. One has to get out of the way before the other comes in."

Pantex Production Issues an Issue?

Production issues at the Pantex Plant this year could present a problem for the agency, however. John Woolery, the president and general manager of plant contractor B&W Pantex, said in February that unplanned maintenance outages at the plant had set production back on the W76 and other work, though Woolery said that the plant had the flexibility to prioritize work on one weapons system, like the W76, if necessary. In its budget request, the NNSA said it was "evaluating execution issues in FY 2013, to ensure that the program can achieve the re-baselined production requirements." The NNSA said

that out-year planned completion schedules for the warhead would be included in the FY 2014 submission of the Stockpile Stewardship and Management Plan.

The completion date for the W76 refurbishment has been a rollercoaster of sorts for years. Before the NNSA extended the refurbishment through 2021 last year, it had planned on completing the life extension program by 2018. “This will give us an ability to meet all operational requirements, build a hedge after that, and that was the flexibility we were willing to take,” Cook said. The Navy never seemed happy with that plan. In testimony before the House Armed Services Committee last year, Navy Adm. Jonathan Greenert, the service’s Chief of Naval Operations, said the Navy was “concerned” at the NNSA’s plan beyond Fiscal Year 2013. “We have to keep our strategic nuclear systems, including the warheads, modernized,” Greenert said. “That affects the targeting. It affects the numbers and our delivery. So looking at the ‘13 submission, we’re okay with that. When we look at ‘14 and up, we are concerned.” Rear Adm. Terry Benedict noted later in the year that the Navy was concerned that further budget belt-tightening could further affect the refurbishment schedule. “We’re eating all of the margin,” Benedict said. “We’re eating into the margin, and that’s the concern.”

—Todd Jacobson

KEY SENATE REPUBLICAN SIGNALS OPENNESS TO NEW NNSA PU STRATEGY

The top Republican on the Senate Armed Services Strategic Forces Subcommittee this week appeared to open the door to changes by the Obama Administration in its plans to modernize the nuclear weapons stockpile and arsenal. Sen. Jeff Sessions (R-Ala.), the ranking member of the panel, has been among the most outspoken critics of the Administration’s modernization pullback, which was highlighted by the deferral of the Chemistry and Metallurgy Research Replacement-Nuclear Facility a year ago. The Senate and House Armed Services committees have opposed the deferral and a \$120 million reprogramming request tied to an alternate plutonium strategy, but Sessions said during a Senate Armed Services Strategic Forces Subcommittee hearing this week that he’d be open to a “modular” approach that has been proposed by the Administration as a potentially cheaper alternative to meet the nation’s plutonium needs. “Modernizing effectively our nuclear weapons arsenal is essential, it’s the right thing to do, and it’s not too much money to spend if it’s necessary but I would be willing to listen to the ideas you have for modular or other things and I think I would examine them carefully to see if we think those are feasible and would not result in further delays and uncertainties in this program,” Sessions said. “I am sure the [subcommittee]

chairman [Sen. Mark Udall] and I would be delighted to have more information on it. That’s my firm view; that we need to be on track with this. I suspect we might be able to do it less expensive, and if so, I will be supportive of that.”

At this week’s subcommittee hearing with uniformed and civilian Pentagon leaders on the nation’s nuclear forces, and a separate hearing before the full Senate Armed Services Committee with Defense Secretary Chuck Hagel and Chairman of the Joint Chiefs of Staff, Gen. Martin Dempsey, Sessions was still critical of delays to other pieces of the Administration’s modernization efforts, including the B61 and W78/W88 life extension programs and efforts to modernize the nation’s fleet of nuclear delivery vehicles. He also noted that the Administration was \$1.4 billion short of a 2010 pledge to boost nuclear weapons spending for the NNSA’s weapons program by \$4.1 billion. “If this continues then we will have reached a permanent fall-behind level,” Sessions said. “I think it will be hard to catch up.” In response to Sessions’ questioning, Dempsey and Hagel both committed to funding modernization efforts. “My advice has been and will continue to be to maintain the triad, to include extended deterrence in our capability and to maintain a safe and secure and reliable stockpile,” Dempsey said.

Addressing Sessions’ concerns, an Administration official told *NW&M Monitor* that the financial climate in the U.S. has changed dramatically since the modernization promises were made on New START. “That’s looking at the way things stood in 2010 and ignoring everything that has happened since,” the official said. “A lot has changed in the budget world since then, including the Budget Control Act and sequestration.”

A Disconnect Between DoD, DOE?

Sessions suggested that part of the problem was a disconnect between the Department of Defense and the Department of Energy. “One of the dysfunctions to me has always been it’s really the DOD that’s the customer,” he said. “It’s the weapon that’s being produced for them. And Energy just produces it and they don’t have sufficient incentive, in my opinion, to reduce costs. And the Defense Department doesn’t have that much incentive, because if Energy produces it at less cost, it doesn’t go to the Defense Department. It just is lost to the Energy Department. So the Energy Department, it’s pretty obvious to me, just has not had a sense of intensity. If the Defense Department were making these weapons and they needed more money for ships and they could save money in making the weapons, they’d be saving the money and trying to move it over to make ships with.”

Creedon noted that in recent years the Nuclear Weapons Council has become more involved in decisions about warhead and infrastructure modernization. She used the B61 life extension program as an example of where the Nuclear Weapons Council, in discussions with the Pentagon and the National Nuclear Security Administration, had decided to limit the scope of the refurbishment program because it was too technically challenging and too expensive. The NNSA is in the process of refining the costs, she said, “and they will come back to the weapons council and we’ll review this again. So we’ll look at both the timing and we’ll look at the scope again, because we want to make sure that it’s affordable, because now, as you know, DoD is also providing money directly to the NNSA to help them with this whole enterprise. So I think just using that as an exemplar kind of explains how we are, in fact, working together, how we’re making some of these trade-offs and we’re providing incentives on both sides to look at where is the affordability and where is the requirement.”

Creedon also said that recent years have brought about significant progress in improving coordination between the Pentagon and the Department of Energy. “It’s been, frankly, a little bit painful but we really have made a lot of progress,” she said. “I think CAPE, the group at DoD, the Cost Analysis and Program Evaluation group, also has brought their cost expertise to this, too and has shared a little bit of that with NNSA. So we’re making progress. We’re not there yet, but we’re making a lot of progress.”

Senators Getting Antsy Over New START Plans

Senators at the hearing also pressed Administration officials on the lack of force structure plans from the Administration on the implementation of New START. “We thought that was coming in the Fiscal Year ‘13 budget, but we’re still waiting for that information. It is important—I know my ranking member agrees—that the commitments made as a part of New START are upheld,” Sen. Mark Udall (D-Colo.), the chairman of the subcommittee, said. The U.S. has reduced its strategic deployed stockpile to 1,654 warheads under New START, 104 warheads above the 1,550-warhead ceiling of the treaty, but it will need to reduce the number of intercontinental ballistic missiles or the number of tubes capable of launching warheads on nuclear submarines to get under the treaty’s central limits.

Creedon said the Administration’s FY 2014 budget request was structured to allow the Air Force and the Navy to continue studying possible reductions that will be made in preparation for the Administration’s FY 2015 budget request. “The decision as to which of those options we choose has not been made yet, but the way that the ‘14

budget structure is designed is to preserve the option as we get closer in time, as we understand more about the pros and cons of each option and, frankly, also as we get more into where the whole geopolitical situation is going, where we’re going with future discussions with Russia,” Creedon said. “It allows us to maintain that flexibility for as long as possible before we make a decision.”

—Todd Jacobson

FORMER NRC CHAIRMAN JACZKO NAMED TO NNSA GOVERNANCE PANEL

Senate Majority Leader Harry Reid (D-Nev.) has named controversial former Nuclear Regulatory Commission Chairman Greg Jaczko to the Congressionally mandated panel on the governance of the National Nuclear Security Administration. Jaczko, a longtime confidant of Reid’s and a former staffer for the Nevada Senator and Massachusetts representative Ed Markey (D), resigned as the chairman of the NRC in May of 2012 in the wake of a workplace scandal. Four other NRC commissioners wrote to the White House complaining of his occasionally vitriolic workplace demeanor and stifling attitude toward employees who contradicted his opinions. After several Congressional hearings and a damning IG report, Jaczko resigned and was quickly replaced by current Chairman Allison Macfarlane, who was sworn in last summer.

The panel, formed as a bipartisan compromise in the Fiscal Year 2013 Defense Authorization Act over controversial NNSA reform language, is expected to make recommendations on revising the governance structure of the agency. House-drafted reform provisions in the bill would have increased the autonomy of the NNSA while streamlining directives and regulations, eliminating oversight from DOE’s Office of Health, Safety and Security and moving the agency toward performance-based oversight, but those provisions ran into opposition from labor unions, the Administration, Senate Democrats, and even Republican leadership on the House Energy and Commerce Committee. In the end, most were stripped from the bill in favor of the creation of the panel.

Jaczko Brings Health, Safety Perspective

While Jaczko’s selection raised some eyebrows, some weapons complex observers suggested that his time at the NRC might give him a unique perspective on health and safety issues, which emerged as a lightning rod for controversy during debate on the House NNSA reform provisions. One observer noted that the NRC and Department of Energy may apply radiation standards slightly differently, they both stem from the Atomic Safety Act. Critics of the House-passed NNSA reform language argued that the bill

would reduce safety protections at nuclear weapons facilities, though the language's authors suggested that providing flexibility to the NNSA to prescribe policies and regulations would not weaken safety standards, but would allow the agency to be more efficient.

Eleven of the panel's 12 members have now been selected, leaving only Senate Minority Leader Mitch McConnell (R-Ky.) to make his pick. The panelists include four retired lawmakers: New Mexico Rep. Heather Wilson (R), California lawmaker and State Department official Ellen Tauscher (D), South Carolina lawmaker John Spratt (D), and Ohio lawmaker David Hobson (R). Also included on the panel are former NNSA Naval Reactors chief Adm. Kirkland Donald, former Bush Administration national security expert Frank Miller, former Strategic Command chief Adm. Richard Mies, former Reagan Administration Under Secretary of State for Security Assistance, Science and Technology William Schneider, former Deputy Energy Secretary T.J. Glauthier, and retired Lockheed Martin CEO Norm Augustine. Mies has been selected by Republicans to co-chair the panel.

DoD Preparing Reprogramming for Panel

The panel was required to start its work by March 1, but complications due to funding have delayed its start. It is required to finish an interim report by the end of June and complete its report Feb. 1, 2014. Madelyn Creedon, the Assistant Secretary of Defense for Global Strategic Affairs, told the Senate Armed Services Strategic Forces Subcommittee this week that the authorization of \$3 million for the panel in the FY 2013 Defense Authorization Act was considered a "new start" under the Continuing Resolution that funded the government through the end of March. She said with the passage of a full-year CR and Defense Appropriations bill DoD was moving to reprogram money to support the panel. "What we're doing right now is finding the money to be able to include either in a below-threshold reprogramming or in an above-threshold reprogramming, so we can get the commission started hopefully in time, with the full commitment of the members of the panel," Creedon said.

—Todd Jacobson

DEPT. OF ENERGY ANNOUNCES PLANS TO COMPETE BROOKHAVEN LAB CONTRACT

After a long hiatus from competitions for its Office of Science laboratories, the Department of Energy late this week said it plans to re-compete the management and operating contract for Brookhaven National Laboratory. The decision marks the first lab competition in more than five years at DOE, which under Energy Secretary Steven

Chu moved away from a policy of mandatory lab competitions and toward more of a case-by-case approach to laboratory procurements. That policy has led to extensions in recent years at Pacific Northwest National Laboratory, Oak Ridge National Laboratory, and the SLAC National Accelerator Facility. The last laboratory competition took place at the Princeton Plasma Physics Laboratory, the last in a string of procurements that resulted in one bid from an incumbent contractor. Brookhaven is currently managed by Brookhaven Science Associates, a partnership between Battelle Memorial Alliance and Stony Brook University.

In 2004, Congress forced DOE to re-compete five national lab contracts—Los Alamos, Livermore, Berkeley, Ames and Argonne—that had been held by the same contractor for more than 50 years. The competitions for the two National Nuclear Security Administration weapons labs, LLNL and LANL, each drew bids from two teams that were attracted by increased fee levels and other incentives added to the contracts. But for the Office of Science labs, only teams led by incumbents bid for Ames, LBNL and Argonne. Subsequent competitions for the Office of Science's Fermi National Accelerator Laboratory, the Princeton Plasma Physics Laboratory and the Thomas Jefferson National Accelerator facility—which were not required by the 2004 law—also yielded only one bidder, and officials from the national laboratories appealed to DOE to move to more of a case-by-case approach to lab competition.

'Improved Contractor Performance' Sought

Brookhaven was among the lab contracts to be extended under Chu when in 2010 contractor Brookhaven Science Associates was awarded a five-year extension through Jan. 4, 2015. This time around, however, DOE said a competition for the new contract would "result in improved contractor performance and cost efficiencies at BNL." The Department did not respond to additional questions about its contracting plans, though DOE spokesman Jeff Sherwood told *NW&M Monitor* that a Source Selection Official and a Source Evaluation Board would soon be appointed to develop a solicitation, evaluate proposals and make an award. "The expectation is that the solicitation process would span over the course of approximately 18 months and would allow for a 3 month transition process from the date of award," Sherwood said. "The entire process is expected to conclude coincident with the expiration of the current contract which is January 4, 2015."

Before DOE extended BSA's contract in 2010, the Department had announced plans to compete the contract, going so far as to hold an industry day. A handful of companies sent representatives to the event, and URS and University

Research Associates—which manages Fermilab along with the University of Chicago—expressed interest in priming the contract. When the lab’s contract was last competed in 1997, BSA beat out IIT Research Institute of Chicago for the contract and there is expected to be ample competition for the contract this time around.

BSA To Defend its Turf

When DOE last chose to extend BSA’s contract, Department officials suggested that a large period of transformation at Brookhaven contributed to the decision. The lab over the last several years has completed work on the Relativistic Heavy Ion Collider, Center for Functional Nanomaterials and the Interdisciplinary Science Building while replacing many aging facilities. It is also scheduled to complete work on the National Synchrotron Light Source II in 2014. BSA has performed relatively well in its annual reviews from the Office of Science, earning an “A-“, four “B+s”, and a “B” in various appraisal categories during, but its “C-“ in Environment, Safety and Health was its first “C” since it earned a “C-“ in Security and Emergency Management in FY 2006. “Competition allows DOE to elicit new and innovative approaches for planning BNL’s future,” the Department said in a statement.

In a statement, BSA promised to compete to remain the manager of the laboratory. “Brookhaven Science Associates will enthusiastically and aggressively compete for the Brookhaven Lab contract,” said Ronald Townsend, Chair of the BSA Board and Battelle’s Executive Vice President for Global Laboratory Operations. “We see a terrific future for Brookhaven National Laboratory and believe that a team comprised of Battelle, Stony Brook University, and our university partners is exceptionally well positioned to address the challenges ahead and deliver outstanding scientific outcomes for the Department of Energy.”

—Todd Jacobson

SEN. SCOTT CITES MOX CONCERNS IN LONE VOTE AGAINST MONIZ NOMINATION

Future Funding For MOX Plant Not Included In FY 14 Request

Concerns about the future of the Mixed Oxide Fuel Fabrication Facility led Sen. Tim Scott (R-S.C.) to vote against the nomination of Ernest Moniz to Department of Energy Secretary this week, the only opposing vote in the Senate Energy and Natural Resources Committee as Moniz was reported out of committee favorably this week. At Moniz’s nomination hearing last week, Scott pressed him on his position on MOX yet Moniz remained noncommittal. “As his resume indicates, Dr. Moniz is a well-educated and experienced nominee. However, his lack of clarity on

the future of the MOX program—project critical to South Carolina and to the safe disposal of 34 tons of weapons grade plutonium, in keeping with our international treaties—led me to a ‘no’ vote,” Scott said in a statement. “Clarity is something all too rare in Washington, and, as of today, Dr. Moniz’s position on the future of the MOX program is murky at best. Given what is at stake, that is unacceptable.”

The National Nuclear Security Administration last week announced plans to slow down construction of the facility and examine alternatives for plutonium disposition. Currently, the MOX plant under construction at the Savannah River Site is part of the Administration’s plans to dispose of surplus plutonium under an agreement signed with Russia in 2000 by converting it into fuel for nuclear reactors. However, the project faces a nearly \$3 billion cost increase and three-year delay in a provisional baseline that contractor Shaw AREVA MOX Services has proposed. Those cost increases have spurred the Administration to cut funding for MOX and launch a study on alternatives. “We are currently putting together the team and framework to conduct the assessment,” NNSA spokesman Robert Middaugh said in a written response. The NNSA so far has no cost estimate or schedule for the study. “Once the framework is established, we will be able to provide more information on the cost of the assessment,” he said.

The day before budget details on MOX were released, Moniz told the Senate Committee that in the 1990s as Under Secretary of Energy he was the “lead negotiator” in developing the plutonium disposition agreement with Russia that resulted to two options—MOX fuel or vitrifying the plutonium. Scott pushed Moniz on the matter. “You said there are basically two paths to go down, one being a path that we’ve already invested \$4 billion, 60 percent completion, and the other path that we haven’t started on. So my real question was, should we continue down this path?” he asked. While Moniz said he supported the agreement with Russia, he would not commit to MOX despite repeated questioning. “All I can say, sir, is that, you know, I would need to be confirmed, look at what we’re doing, look at the path forward, look at what the administration proposes, and then work with you and others to push through our commitment to dispose of 34 metric tons of plutonium,” Moniz replied.

Future Funding Not Included in Budget Request

The NNSA released more budget details this week, showing an FY 14 request for MOX construction totaling \$320 million, compared to \$388.8 million in the FY13 request and \$435 million in the FY12 request. But the request did not include any information for future project funding, marking funding for FY 2015 and beyond with

“TBD.” Notably, that is a change from an earlier version of NNSA budget documents in which out year funding was marked zero, and at least one chart in the final budget request still places out year funding at zero. The NNSA declined to comment on draft versions of the budget this week. “As part of the review of alternatives, the MOX fuel approach will be evaluated, taking into account the current baseline change proposal and the impacts of the slowdown during the assessment period,” Middaugh said.

NRC: No Change in MOX Inspections

Meanwhile, the Nuclear Regulatory Commission detailed its largely positive findings on MOX construction progress at an annual update meeting with MOX Services officials near the Savannah River Site. NRC officials said they have so far not changed plans for inspecting the facility, but that could change. “If they slow down their construction schedule we will still come out and do inspections, but they may be stretched out over a longer period of time if construction were to occur over a longer period of time,” Deborah Seymour of the NRC said. “We still have programmatic inspections that we perform every year in some key areas like management measures where we come out every year and make sure that these measures are being applied appropriately and maintained. As long as construction is ongoing we will have one resident inspector at a minimum on site.”

MOX Services also took the opportunity to highlight its safety record during the NRC meeting. That includes 14.6 million work hours without a lost time injury, 185,000 work hours without an OSHA recordable injury and receipt of Voluntary Protection Program Star status in February. On construction progress, MOX officials said they completed the roof and exterior structure of main facility in February, while leaving numerous construction openings so components can be added. The contractor also completed construction of the Technical Support Building, installed five modules in Active Gallery, completed installation of the fuel assembly crane and commenced installation of pellet storage unit, according to a MOX Services presentation at the meeting.

—*Kenneth Fletcher*

CANNON APPOINTED MOX FEDERAL PROJECT DIRECTOR

After seven months without a full-time federal head of the Mixed Oxide Fuel Fabrication Facility, the National Nuclear Security Administration has named Scott Cannon as the new MOX federal project director. The appointment comes during a potential turning point in the project as the NNSA plans on slowing down MOX construction while

reevaluating its plutonium disposition strategy. Cannon most recently led the NNSA’s Tritium Program as deputy manager and acting manager at the Savannah River Field Office. From 2008 to 2011 he led the NNSA’s Pit Disassembly and Conversion project, for which the NNSA developed an more cost-effective alternative strategy last year. “With many years of experience in program management and planning, design development, construction management and operational management, Scott is an important element of our NNSA leadership team,” NNSA acting Administrator Neile Miller said in a message to employees this week.

Cannon’s appointment comes after a search for a new FPD that stretches back to at least last June, when the NNSA posted a job opening announcement anticipating the retirement of longtime project chief Clay Ramsey. As of January, the NNSA was still “actively interviewing” for the position, a spokesman said then (*NW&M Monitor*, Vol. 17 No. 4). Ramsey left in late August, and was replaced by Deputy Federal Project Director Kevin Hall, who served as acting FPD until taking a post at the Oak Ridge site this month. Cannon “is a certified Level IV Project Manager in DOE’s Project Management Career Development Program, a member of the Project Management Professional (PMP) Project Management Institute and holds a Level III Federal Acquisition Certification,” according to Miller.

—*Kenneth Fletcher*

NNSA SETS SIGHTS ON NEW GOALS FOR IGNITION AT NIF

Stymied in its attempts to achieve ignition last year, the National Nuclear Security Administration has shied away from setting an exact date for reaching the elusive goal at the National Ignition Facility. But budget documents released this week indicate that the agency expects to demonstrate thermonuclear burn that would enhance the uses of the National Ignition Facility for the stockpile by 2019. The agency said in a December report to Congress that it would take until 2015 to explore different approaches to achieving ignition at the facility while rebalancing the types of shots on the laser in favor of shots tailored for the Stockpile Stewardship Program. NNSA spokesman Josh McConaha said if ignition isn’t achieved by 2015, the agency “may re-assess the timeframe” for demonstrating an “advanced ignition platform,” which McConaha said would include increased gain and stable neutron yields.

The Obama Administration is requesting \$401 million for the Inertial Confinement and Fusion (ICF) campaign in Fiscal Year 2014, a \$64 million cut from funding established by a Continuing Resolution in FY 2013 (before

sequestration cuts). Funding for the campaign is expected to dip to \$345.6 million by FY 2018 as the agency transitions NIF to a user facility, where external researchers use up to one-third of the time on the laser and provide a source of funding for the facility. “The strategic goals of the ICF Campaign are to: 1) maintain excellence in HED [high energy density] and ignition science to underpin Stockpile Stewardship; 2) provide experimental capabilities to improve codes, models, and scientific understanding required for the improved predictive capability set out in the PCF; 3) develop a burning plasma and a high yield platform for physics applications of ignition, and 4) attract, train, and retain high-quality technical staff that will underpin the future nuclear weapons enterprise,” the NNSA said in budget documents. “Funding will be adjusted as needed to provide the capabilities required to support the stockpile.”

NIF Undergoing Rebalancing

Lab officials had promised to achieve ignition by the end of Fiscal Year 2012, but missing that goal forced the program to “rebalance” the types of shots at NIF while a better understanding of the underlying physics of ignition is studied. The new shot schedule favors a breakdown of 50 percent shots tailored for the Stockpile Stewardship Program, 40 percent for ignition, and 10 percent for fundamental science and other national security missions. Previous experimental schedules at the facility heavily favored ignition-related shots.

The NNSA is also awaiting Congressional approval of a reprogramming request submitted last month that seeks to move around \$88.1 million to help keep NIF from running out of funding this month. The reprogramming was necessary because of a shift in overhead rates for the facility. NIF enjoyed lower overhead rates than the rest of the laboratory during construction, but as it is fully up and running, it has shifted to a higher overhead rate, forcing lab officials to free up additional funds in what largely amounts to a complex accounting exercise. Last month, DOE Deputy Chief Financial Officer Alison Doone said an internal NNSA reprogramming of \$5 million during FY 2012 and another \$5 million this month have allowed the most critical research at NIF to continue, and because the increase to NIF overhead rates has lowered overhead rates for other programs at the lab, the current \$88.1 million reprogramming request will be paid for by the “windfall” from the other programs. “As LLNL’s indirect costs and rates will now be evenly shared over a larger base, the transition of NIF to the laboratory-wide indirect blended rate in fiscal year (FY) 2013 has the dual consequence of increasing the cost of programmatic activities at NIF while simultaneously decreasing the cost of all other programmatic activities at LLNL,” Doone said. When it submitted

the reprogramming request, the Department said it was working on another submission seeking to transfer another \$40 million to keep the facility running through the end of the year. Exactly where the additional \$40 million will come from remains an open question, but officials around the weapons complex are bracing themselves for a potential impact to other programs.

—*Todd Jacobson*

FORMER NNSA CHIEF PREDICTS RESTRAINED FUTURE FOR LIFE EXTENSION

Future approaches to extending the lives of the nation’s nuclear warheads are likely to be restrained in their scope in the wake of the challenges faced by the National Nuclear Security Administration to contain costs on the B61 refurbishment, the former head of the agency said this week. Estimates to refurbish the B61 bomb have reached as high as \$10 billion, even as some safety and security features have been dialed back, and former NNSA chief Linton Brooks said this week during a speech at the American Security Project that the future would likely bring more of the same measures of restraint. With the B61, “there were those who said this is our last chance to see these weapons for a very long time ... and things to make it safer and more reliable, we should put those in,” Brooks said. “That proved in some cases to be unaffordable. I think we’ve learned, the nuclear community, has learned the lesson.”

Brooks suggested that in the future, financial pressure would force more limitations when it comes to life extension work. “These are extraordinarily safe weapons now and you look at the entire system, they’re extraordinarily secure so I think that the community is unlikely to spend lots of money to add some more decimal points to safety and security,” he said. “There is this bias for let’s make it as good as we can. I think money is in the process of trumping that big time over the next couple years.”

Brooks also cast doubt on the notion that U.S. nuclear weapons in Europe should be removed anytime soon as a way to save money. Experts have suggested that the B61 refurbishment could be curtailed because a large number of the weapons planned for the life extension program are currently deployed in Europe as part of NATO’s nuclear deterrent. Russia has insisted that the United States remove tactical weapons from Europe before it will negotiate on its large stockpile of tactical nuclear weapons, which is one of the Obama Administration’s key goals for the next round of arms control negotiations with Moscow. Brooks, however, suggested that those nuclear weapons still have a significant extended deterrent value to U.S. allies, both those tactical nuclear weapons stationed in Europe and the

overall size of the U.S. stockpile in general. “They may well be wrong but they draw some comfort from the notion that they’ve got a big brother and since the federation’s chief claim to military respect is nuclear, they sort of like that big brother to have a nuclear capability,” Brooks said. “They are simplistic when they look at ‘are you roughly equal.’”

Brooks: Nukes Remain a Symbol of U.S. Assurance

Brooks said nuclear weapons would remain an important symbol of U.S. support until allies could be reassured in other ways. “Until we find a better way to convince our allies, a better symbol, the allies who have American troops stationed there don’t worry about nuclear weapons because they know there is no way they can be attacked without attacking America,” he said. “The allies who don’t, which is to say the new eastern Europe, they’re worried about symbols of America readiness and support. We’ve got to find those symbols. I don’t think they have to be nuclear but that’s the symbol we have now.”

Brooks suggested that the amount of money that could be saved from scaling back the B61 life extension program “should not be overstated.” Current estimates for the program top out at \$10 billion, and estimates from some groups like the Arms Control Association have suggested that the U.S. could save billions by cutting the refurbishment program back. “The cost of modernization is in the form of some fixed cost for doing the R&D plus something that scales with the number of types plus something that scales with the number of weapons. Even if you decided, which would be opposed I think by our allies, that the weapons that came out of Europe were not ready for reintroduction but were dismantled, exactly how much money you save I don’t know.”

With Stockpile Cuts, Modernization Still Needed

Brooks also said that even massive cuts to the size of the nation’s nuclear arsenal—perhaps to as low as 1,000 deployed nuclear weapons and a total stockpile of 2,500—would not change the justification for plans to modernize the nation’s weapons complex. Currently, the Administration is planning to spend billions to build a new Uranium Processing Facility at the Y-12 National Security Complex, and though it deferred work on the Chemistry and Metallurgy Research Replacement-Nuclear Facility planned for Los Alamos National Laboratory, it is still planning an alternate strategy to maintain the lab’s plutonium capabilities. Both are necessary regardless of the size of the stockpile, Brooks said. “I’m disappointed that people are somehow attributing [CMRR-NF’s deferral] as a lack of interest in the weapons program on the Hill, but I don’t think you change if you go from the current

stockpile to 1,000 deployed and 2,500 total,” Brooks said. “I don’t think you change the arguments very much expect a little bit on the margins.”

Brooks: Budget Should Satisfy Conservatives

Brooks also addressed the Obama Administration’s \$7.9 billion Fiscal Year 2014 budget request for the NNSA’s weapons program, suggesting that it should be more than enough to satisfy Congressional Republicans that have been critical of the Administration for backing off of modernization commitments it made during debate on the New START Treaty. “I will say that the conservatives who are not convinced by this budget that the president is serious about the half of the Prague speech that said ‘maintain a safe, secure and effective nuclear deterrent as long as we have nuclear weapons’ simply aren’t going to be convinced,” he told *NW&M Monitor* on the sidelines of the event. “If you look back and compare it to the administration I was in, this Administration has paid a lot more attention to the weapons complex.”

—Todd Jacobson

DOE IG REVIEW FINDS POOR MORALE IN DOE SPECIAL OPERATIONS OFFICE

A review performed by the Department of Energy Inspector General’s Office has found “low morale” and trust issues in the Department office tasked with protecting the Secretary of Energy and other officials, according to a report released this week. The IG’s review was prompted by allegations raised last year by a group of current and former DOE security agents of mismanagement in the Department’s Office of Special Operations. “While certain aspects of the allegations were substantiated, the evidence did not support a number of concerns that had been raised. However, perhaps of greatest importance, the Special Operations agents generally described their work environment as one permeated by low morale,” the IG report says. “During the course of our review, it became clear that morale among many members of the Special Operations staff was low and that there appeared to be a lack of trust between the agents and management.”

According to the IG’s report, the agents’ complaints fell into several categories—ineffective executive protection policies and procedures; compromised performance assurance tests; inadequate training; mismanagement of resources; and lack of implementation of recommendations for improvement. The review did find that certain operational training had not been completed and that individual purchases of body armor were not made between 2007 and 2012, according to the IG. The report also says, though, “We did not substantiate a number of other specific

allegations involving issues such as inadequate management and use of resources, and failure to complete recommended actions.”

The IG’s Office said that during the course of review it was provided “inconsistent and, at times, contradictory” information. “Positions were often irreconcilable. For example, we were unable to get agreement on whether the problems that had been alleged, even if confirmed, represented a significant risk to the Department’s Executive Protection Program. In short, there was little doubt that the morale and trust issues influenced many of the concerns brought to our attention,” the report says.

‘Institutional Issues’ Pose Challenges

The IG also said that “certain institutional issues” pose management challenges for DOE’s executive protection program. “Most prominently, given the nature of the mission and the limited number of executives afforded protection, Special Operations relies on a relatively small, core professional staff,” the report says. “Inherently, this limits opportunities for promotion to management positions, the availability of rotational assignments and the size and scope of in-house training. Further, as noted, at times, the current structure requires the augmentation of the Executive Protection staff with OST agents. While our re-

view did not link specific failures to these institutional issues, we concluded that the issues contributed to dissatisfaction among the agents.”

DOE’s Office of Health, Safety and Security has begun taking actions to improve agents’ morale, according to the report, such as by conducting an independent review of Special Operations that led to a number of recommendations, most of which have been implemented. The IG said in its report, though, that DOE “should intensify its efforts to address the concerns raised by Special Operations agents ensuring that the executive protection function is operating as effectively as possible.” DOE has concurred with the IG’s recommendations, according to the report. “Specifically, the Chief Health, Safety and Security Officer (Chief) agreed to take action to develop a new Performance Assurance Program that will afford agents the opportunity to review and comment on the plan prior to it being finalized. Further, the Chief agreed to develop an annual training list for all collaborative training including COOP training for the agents. Finally, the Chief indicated that a recent independent evaluation of the organizational and safety culture of the HSS organization identified areas of improvement, including aspects of HSS employee morale,” the report says.

—Mike Nartker

REPORT OF NOTE...

Precision Model for Organizational Transformation Within the DOE/NNSA Nuclear Weapons Complex

Mark Bodnarczuk, Executive Director Breckenridge Institute, April 2013.

The report is available at <http://www.breckenridgeinstitute.com>

To enact real change across the nuclear weapons complex, National Nuclear Security Administration contractors need to take a deeper look at organizational transformation, taking into account not just management initiatives but also on the unwritten rules, organizational history impacting how things actually get done in a site, and the actual results. The relationship between the four factors, described as context-of-interaction, patterns-of-interaction, repository-of-interaction, and actual results, is characterized as an equation by the Breckenridge Institute that describes the “structure and dynamics of organizational transformation by identifying the constituents of organizational culture and then formulating them into an ‘equation’ that describes how organizational culture actually works in day-to-day operations.” Attempts to transform the weapons complex have not adequately taken into account all factors, the Breckenridge Institute said in its report. Efforts to transform the weapons complex have only focused on “improving, replacing, or reconfiguring the context-of-interaction (COI) in the hopes of creating sustainable change and improvement,” Breckenridge said. “But trying to create positive change by reorganizing, changing leadership, changing contractors, implementing new management programs, installing new equipment, building new facilities, replacing and updating IT infrastructure, issuing increasingly prescriptive DOE Orders and directives in the hopes of improving performance, retraining managers and staff—again, and having Laboratory support services functions develop increasingly prescriptive internal policies and procedures for Lab managers and employees to follow (all of which are associated with the COI term) does not address the root cause ‘cultural’ issues that are found in the other three terms of the equation.” ■

At the Weapons Labs/DOE Sites

AT LIVERMORE SEQUOIA SUPERCOMPUTER MOVES TO CLASSIFIED WORK

Lawrence Livermore National Laboratory's Sequoia supercomputer completed the transition to classified computing this week, officially shifting to full-time work in support of the National Nuclear Security Administration's Stockpile Stewardship Program. Sequoia, which is capable of reaching speeds of 20 petaflop/s (a quadrillion floating point operations per second) and was named the world's fastest supercomputer in June of 2012, will be run exclusively by the NNSA's Advanced Simulation and Computing program. "The success of early science runs on Sequoia have prepared the system to take on the complex calculations necessary to continue certifying the nation's aging nuclear stockpile," NNSA Assistant Deputy Administrator for Stockpile Stewardship Chris Deeney said in a statement. "Sequoia's mammoth computing power will provide scientists and engineers with a more complete understanding of weapons' performance, notably hydrodynamics and the properties of materials at extreme pressures and temperatures. These capabilities provide confidence in the U.S. deterrent as it is reduced under treaty agreements and represent the nation's continued leadership in high performance computing."

As it transitions to completely classified work, Sequoia will perform calculations to support upcoming life extension programs on the B61 and W78/W88 weapons systems, the NNSA said. Among its biggest contributions will be in uncertainty quantification, which puts the supercomputers massive processing power to work by running a large number of calculations engineered to assess the impact of minor differences in various systems. "The work we've done to date on Sequoia gives every indication that we will be able to run suites of highly resolved uncertainty quantification calculations in support of ASC's effort to extend the life of aging weapons systems such as the B61 and W78 – what we call the life extension program," ASC Director Bob Meisner said. "By reducing the time required for the studies that underlie life extension, total costs also are reduced. The machine will also provide a means to do an assessment of its entry-level 3-D UQ capabilities. 3-D UQ will become increasingly important as the stockpile ages." The NNSA also said Sequoia will aid its ability to resolve significant findings in weapons systems, boost the annual assessment of the stockpile, and help predict problems that could come about as a result of aging in weapons systems.

AT LOS ALAMOS NNSA TO USE FIXED-PRICE CONTRACT FOR RLWTF PROJECT

The National Nuclear Security Administration plans to use a fixed-price contracting approach to build a new liquid waste treatment capability at the Los Alamos National Laboratory, though it is unclear whether the NNSA will seek to implement a prime contracting approach or use subcontracts managed by the lab. The acquisition approach for the Radioactive Liquid Waste Treatment Facility-Upgrade project, which entails the construction of a new low-level waste facility and new transuranic waste facility, was outlined in the more detailed version of NNSA's Fiscal Year 2014 budget request released this week. The request says that "design for the TLW [transuranic liquid waste facility] will be obtained through competitively awarded contracts using a firm fixed price contract. Construction of the LLW and TLW facilities will be accomplished using a firm fixed price contracting approach." The NNSA Los Alamos Field Office did not respond to requests for comment late this week.

large one as previously planned. The new facilities would entail a small Hazard Category-3 facility for processing transuranic waste and another facility for processing low-level waste. Previously, a single Hazard Category-2 facility was planned for both missions. The project is currently projected to cost \$176-214 million, according to the NNSA budget request, which notes, "This amount will be further reduced to reflect anticipated management efficiency and workforce restructuring reductions."

The Radioactive Liquid Waste Treatment Facility-Upgrade project is intended to replace an aging facility with a history of leaks that led to concerns that ongoing operations could be threatened due to a lack of an adequate waste processing ability. In response to increased project costs, the NNSA decided to modify its approach for the project to build two new smaller facilities, rather than one

For FY 2014, the NNSA is seeking approximately \$55.7 million for the project to move forward with construction of the low-level waste portion and proceed with design activities for the transuranic waste portion. According to the agency's budget request, the low-level waste facility has reached 60 percent design maturity. "LLW will be ready to receive CD-2 approval [approval of a performance baseline], pending funds are available to reach 100 percent design maturity," the request says. The NNSA also said, "If the project does not receive construction funds in FY 2014, the project will be further delayed. This delay will create significant risks to [the] NNSA mission at LANL if the existing facility is shut-down for a significant amount of time for repair of aging equipment."

Construction of New TRU Facility to Begin Next Year

The NNSA is also seeking approximately \$26.7 million in its FY14 request to complete design work and begin construction of Los Alamos' new Transuranic Waste Facility. The facility is intended to provide storage, staging, and characterization for transuranic waste generated by Los Alamos operations after 1999. Once complete,

it will end the shipment of newly generated transuranic waste to where it is currently stored at Area G to a location farther from the lab's boundaries and closer to where the waste is generated. In late February, NNSA approved a baseline for the project puts its total cost at approximately \$99 million, with the facility to be completed by early 2018. ■

Wrap Up

IN CONGRESS

A Senate Energy and Water Appropriations Subcommittee hearing on the National Nuclear Security Administration's budget scheduled for this week has been postponed until next week. The panel had planned for acting NNSA Administrator Neile Miller to testify before the committee at 2:30 p.m. April 17, but a conflict involving the schedule of subcommittee chair Sen. Dianne Feinstein (D-Calif.) forced the hearing to be moved to Wednesday, April 24. The hearing will still take place at 2:30 p.m. in Room SD-192 of the Dirksen Senate Office Building.

IN DOE

The Department of Energy's Office of Intelligence and Counterintelligence has issued a 90-day task order to

Delta Research Associates for continued support services for the office, extending the company's current contract with the Department. DRA was awarded the task order for Office of Intelligence and Counterintelligence (IN) support services work under an existing administrative services blanket purchasing agreement in April of 2007. That BPA is being recompeted now by the agency. The task order extension is worth \$973,908 and runs from April 13 to July 12, DOE said in a posting on fbo.gov. "This task order will allow for the transition of work to the newly awarded competitive task order once it is in place to prevent an interruption to the level of support that IN requires to perform DOE mission critical services," DOE said in the posting. "An interruption to the services currently being provided would compromise the protection of the United States of America against threats posed by nuclear proliferation and terrorism." ■

Calendar

April

- 23 **Budget hearing: Proliferation Prevention Programs, Senate Armed Services Emerging Threats and Capabilities Subcommittee, Assistant Secretary of Defense for Global Strategic Affairs Madelyn Creedon,; Defense Threat Reduction Agency Director Kenneth Myers, and NNSA nonproliferation chief Anne Harrington, Room 222 Russell Senate Office Building, Washington, D.C., 2:30 p.m.**
- 24 **Budget hearing: NNSA, Senate Energy and Water Appropriations Subcommittee, with acting NNSA Administrator Neile Miller, Room 192 Dirksen Senate Office Building, Washington, D.C., 2:30 p.m.**
- 24 **Speech: "Nuclear and Missile Defense Modernization," Rep. Mike Rogers (R-Ala.), part of the Congressional Breakfast Series, at the Capitol Hill Club, 300 First St., SE, Washington, D.C., 8 a.m.**
- 30 **Speech: "Navy Perspectives on the Trident Strategic Modernization," Vice Adm. William Burke, Deputy Chief of Naval Operations Warfare System, part of the Congressional Breakfast Series, at the Capitol Hill Club, 300 First St., SE, Washington, D.C., 8 a.m.**

May

- 7 **Speech: "Sustaining the Nuclear Enterprise," NNSA Deputy Administrator for Defense Programs Don Cook, part of the Congressional Breakfast Series, at the Capitol Hill Club, 300 First St., SE, Washington, D.C., 8 a.m.**
- 8 **Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.**

13-16

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- 15 **Meeting: Nevada Site-Specific Advisory Board.**

21 Meeting: Savannah River Site Citizens Advisory Board; Aiken, S.C.

27 EM PUBLS CLOSED FOR MEMORIAL DAY

June

9 Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.

July

4 EM PUBLS CLOSED FOR INDEPENDENCE DAY

10 Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.

18 Meeting: Texas and Vermont Compact Commission; Location TBA; Information: <http://www.tllrwcc.org>.

23 Meeting: Savannah River Site Citizens Advisory Board; Augusta, Ga.

August

21 Meeting: Nevada Site-Specific Advisory Board.

September

3-6 **THE SEVENTH ANNUAL RADWASTE SUMMIT**

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11 Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.

18 Meeting: Nevada Site-Specific Advisory Board.

21 EM PUBLS CLOSED FOR LABOR DAY

24 Meeting: Savannah River Site Citizens Advisory Board; Aiken, S.C.

October

9 Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.

21-24

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November

13 Meeting: Oak Ridge Citizens Advisory Board; DOE Information Center, Oak Ridge, Tenn.

(Changes from previous Calendar in Bold)

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