Energy and Water Development: FY2016 Appropriations for Nuclear Weapons Stockpile Stewardship

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Summary

The annual Energy and Water Development appropriations bill provides funding for civil works projects of the Army Corps of Engineers, the Department of the Interior's Bureau of Reclamation, the Department of Energy (DOE), and several independent agencies.

The DOE budget includes funding for the National Nuclear Security Administration (NNSA), a separately organized agency within DOE. NNSA operates three programs: Defense Nuclear Nonproliferation, which secures nuclear materials worldwide, conducts R&D into nonproliferation and verification, and operates the Nuclear Counterterrorism and Incident Response Program; Naval Reactors, which "is responsible for all U.S. Navy nuclear propulsion work"; and Weapons Activities.

The latter is the subject of this report. It operates the Stockpile Stewardship Program, which maintains the U.S. nuclear gravity bombs and missile warheads and has science and infrastructure programs that support that mission. (The Department of Defense [DOD] operates the bombers and missiles that would deliver nuclear weapons; it is funded in the Department of Defense appropriations bill.) The Armed Services Committees authorize funds for DOD and NNSA programs. The FY2016 request proposed moving counterterrorism programs from Weapons Activities to Defense Nuclear Nonproliferation. On a basis comparable to the FY2016 budget structure, the FY2015 Consolidated and Further Continuing Appropriations Act (H.R. 83/P.L. 113-235) provided $8,007.7 million for Weapons Activities. The FY2016 request was $8,846.9 million, a 10.5% increase over FY2015. The House Appropriations Committee recommended providing $8,713.0 million for FY2016. The House passed H.R. 2028, Energy and Water Development and Related Agencies Appropriations Act, 2016, by a vote of 240-177 on May 1. The bill as passed by the House made no changes to the Weapons Activities section of the committee bill.

Weapons Activities has four main programs, each with a request of over $1 billion for FY2016 (FY2015-enacted amounts included below are comparable to the FY2016 budget structure):

- Directed Stockpile Work works directly on nuclear weapons. It includes life extension programs, maintenance, and others. The FY2015-enacted amount was $2,797.2 million; the FY2016 request was $3,187.3 million, a 13.9% increase. H.R. 2028, as passed by the House, provided $3,354.3 million.
- Research, Development, Test and Evaluation Programs, which advances the science, engineering, computation, and manufacturing that support Directed Stockpile Work. The FY2015-enacted amount was $1,766.2 million; the FY2016 request was $1,776.6 million, a 0.6% increase. H.R. 2028, as passed by the House, provided $1,774.2 million.
- Infrastructure and Safety (I&S), a budget category that NNSA proposed in its FY2016 request, includes operations of facilities, recapitalization, maintenance, safety operations, and other programs. The FY2015-enacted comparable amount was $1,386.7 million; the FY2016 request was $1,466.1 million, a 5.7% increase. The House Appropriations Committee recommended consolidating I&S into Infrastructure and Operations, as described next.
- Readiness in Technical Base and Facilities (RTBF) funds material recycle and recovery, recapitalization of facilities, and construction of facilities. Prior to

FY2016, it also funded operations of the nuclear weapons complex. The FY2015-enacted amount was $2,033.4 million; the FY2016 request was $1,054.5 million, with the decrease due to transferring funds to I&S. The FY2015 comparable request for RTBF was $688.0 million, so on a comparable basis FY2016 RTBF increased by 53.3%. The House Appropriations Committee recommended consolidating funding for RTBF, Infrastructure and Safety, and Site Stewardship into a new category, Infrastructure and Operations (I&O), for which it recommended $2,228.2 million. H.R. 2028, as passed by the House, did not amend this provision.

Weapons Activities also includes several smaller programs: Secure Transportation Asset, Site Stewardship, Defense Nuclear Security, Information Technology and Cybersecurity, and Legacy Contractor Pensions, all of which are described in this report.

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Overview

Stockpile Stewardship and the Nuclear Weapons Complex

Congress established the Stockpile Stewardship Program in the FY1994 National Defense Authorization Act (P.L. 103-160). The goal of the program, as amended by the FY2010 National Defense Authorization Act (P.L. 111-84, §3111), is to ensure "that the nuclear weapons stockpile is safe, secure, and reliable without the use of underground nuclear weapons testing." The program is operated by the National Nuclear Security Administration (NNSA), a separately organized agency within DOE that Congress established in the FY2000 National Defense Authorization Act (P.L. 106-65, Title XXXII). NNSA also manages two other programs, Defense Nuclear Nonproliferation and Naval Reactors.

Stockpile stewardship consists of all activities in NNSA's Weapons Activities account. It consists of four programs with funding of over $1 billion each and several smaller programs, all of which are discussed in detail below. **Table 1** presents Weapons Activities funding.

Table 1. Funding for Weapons Activities, FY2014-FY2016

($ millions)

Program	FY2014 Current Comparable[a]	FY2015 Enacted Comparable	FY2016 Request	House	Senate Approps. Comm.	Conference
DSW	2542.1	2797.2	3187.3	3354.3	—	—
RDT&E Programs	1656.8	1766.2	1776.6	1774.2	—	—
RTBF	636.4	688.0	1054.5	2228.2[b]	—	—
I&S	1465.8	1386.7	1466.1	[b]	—	—
Other[c]	1324.5	1369.6	1362.6	1356.4	—	—
Total	**7625.7**	**8007.7**	**8846.9**	**8713.0**	—	—

Source: FY2016 NNSA Congressional Budget Request.

Notes: Details may not add to totals due to rounding. DSW: Directed Stockpile Work; RDT&E: Research, Development, Test and Evaluation; RTBF: Readiness in Technical Base and Facilities; I&S: Infrastructure and Safety.

a. The FY2016 budget request changed several NNSA budget categories. "Comparable" figures for FY2014 and FY2015 allocate funds for those years according to the FY2016 budget structure.

b. The House Appropriations Committee recommended including Infrastructure and Safety within a new category, Infrastructure and Operations (I&O), which was formerly RTBF. I&O would consolidate RTBF, Infrastructure and Safety, and Site Stewardship.

c. For FY2014, FY2015, and FY2016 request, "Other" includes Secure Transportation Asset, Site Stewardship, Defense Nuclear Security, Information Technology and Cybersecurity, Legacy Contractor Pensions, and (for FY2014 only) Use of Prior Year Balances. For House, "Other" includes Secure Transportation Asset, Defense Nuclear Security, Information Technology and Cybersecurity, and Legacy Contractor Pensions.

Table 2. Weapons Activities: FY2016 Request and FY2017-FY2020 Plan

($ millions, except bottom row $ billions)

	FY2016	FY2017	FY2018	FY2019	FY2020
DSW	3187.3	3322.0	3616.9	3689.0	3740.8
RDT&E Programs	1776.6	1825.0	1899.5	1948.9	1987.3
RTBF	1054.5	1121.4	1207.3	1285.0	1235.4
I&S	1466.1	1702.5	1477.9	1559.2	1607.0
Other[a]	1362.6	1311.6	1283.1	1235.7	1259.1
Total	**8846.9**	**9282.3**	**9484.5**	**9717.7**	**9829.7**
Nov. 2010 "1251 report" projection	**8.9**	**8.9-9.0**	**9.2-9.3**	**9.4-9.6**	**9.4-9.8**

Sources: FY2016 NNSA Congressional Budget Request for rows through Total; bottom row, U.S. White House, "November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report: New START Treaty Framework and Nuclear Force Structure Plans," p. 9, http://www.lasg.org/CMRR/Sect1251_update_17Nov2010.pdf.

Notes: Details may not add to totals due to rounding. DSW: Directed Stockpile Work; RDT&E: Research, Development, Test and Evaluation; RTBF: Readiness in Technical Base and Facilities; I&S: Infrastructure and Safety.

a. "Other" includes Secure Transportation Asset, Site Stewardship, Defense Nuclear Security, Information Technology and Cybersecurity, and Legacy Contractor Pensions.

Most stewardship activities take place at the nuclear weapons complex (the "complex"), which consists of three laboratories (Los Alamos National Laboratory, NM; Lawrence Livermore National Laboratory, CA; and Sandia National Laboratories, NM and CA); four production sites (Kansas City Plant, MO; Pantex Plant, TX; Savannah River Site, SC; and Y-12 National Security Complex, TN); and the Nevada National Security Site (formerly Nevada Test Site). NNSA manages and sets policy for the complex; contractors to NNSA operate the eight sites.

Nuclear Weapons Complex Reconfiguration

While the nuclear weapons complex currently consists of eight sites, it had many more personnel and sites during the Cold War. Despite post-Cold War reductions, many in Congress have for years wanted the complex to change further, in various ways: fewer personnel, greater efficiency, smaller footprint at each site, increased security, and the like. After numerous exchanges between DOE and the appropriating and authorizing committees, such issues still remain.

According to a White House document of May 2010, the President provided Congress with a classified report (the "1251 report") required by the FY2010 National Defense Authorization Act, Section 1251, "on the comprehensive plan to: (1) maintain delivery platforms [that is, bombers, missiles, and submarines that deliver nuclear weapons]; (2) sustain a safe, secure, and reliable U.S. nuclear weapons stockpile; and (3) modernize the nuclear weapons complex."[1] According to that document, "the Administration intends to invest $80 billion in the next decade to sustain and modernize the nuclear weapons complex." The Administration submitted a revised Section 1251

[1] U.S. White House, "The New START Treaty—Maintaining a Strong Nuclear Deterrent," fact sheet, May 13, 2010, http://www.america.gov/st/texttrans-english/2010/May/20100514114003xjsnommis0.6300318.html.

report in November 2010, projecting weapons stockpile and infrastructure costs for FY2011-FY2020 at between $85.4 billion and $86.2 billion. The request for FY2015 was below the 1251 report figure; in contrast, the request for FY2016 is about at the 1251 report's figure for that year, and projections for FY2017-FY2020 are above the figures in the 1251 report, as **Table 2** shows.

Reorganization of the Nuclear Security Enterprise

Along with reconfiguring the nuclear weapons complex, there have been concerns for decades about the proper organization of the federal agency responsible for managing it. While the Army managed the nuclear weapons program during World War II, Congress, in the Atomic Energy Act of 1946, created the Atomic Energy Commission (AEC) as an independent civilian agency to manage that program. In the Energy Research and Development Act of 1974, Congress dissolved the AEC and created the Nuclear Regulatory Commission and the Energy Research and Development Administration (ERDA), which among other functions managed the nuclear weapons program. That program was moved again by the Department of Energy Organization Act of 1977, which dissolved ERDA and created DOE. In 2000, as noted above, Congress created NNSA as a separately organized agency within DOE.[2]

In part, these reorganizations stem from long-standing concerns about the management of the nuclear weapons complex. Many reports have been written over the past several decades to address this issue. Most recently, in the FY2013 National Defense Authorization Act, P.L. 112-239, Congress established the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise and directed the panel to make recommendations on "the most appropriate governance structure, mission, and management of the nuclear security enterprise." In its report to Congress, the panel stated:

> the panel finds that the existing governance structures and many of the practices of the enterprise are inefficient and ineffective, thereby putting the entire enterprise at risk over the long term. These problems have not occurred overnight; they are the result of decades of neglect. This is in spite of the efforts of many capable and dedicated people who must nonetheless function within the confines of a dysfunctional system.…
>
> One unmistakable conclusion is that NNSA governance reform, at least as it has been implemented, has failed to provide the effective, mission-focused enterprise that Congress intended.[3]

The panel's recommendations included strengthening presidential guidance and oversight of the nuclear enterprise; establishing new congressional mechanisms for leadership and oversight of the enterprise; replacing NNSA with a new Office of Nuclear Security within DOE, renamed to the Department of Energy and Nuclear Security, with the Secretary responsible for the mission; and building a culture of performance, accountability, and credibility.

Owing to concerns about cost growth and transparency, P.L. 113-235 contained several sections relating to cost and oversight. Section 304 required construction of high-hazard nuclear facilities

[2] For a history of the nuclear weapons program and related topics, 1939-2010, see U.S. Department of Energy, National Nuclear Security Administration, "NNSA Timeline," http://www.nnsa.energy.gov/aboutus/ourhistory/timeline.

[3] Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise, "A New Foundation for the Nuclear Enterprise," November 2014, pp. ix-x, http://cdn.knoxblogs.com/atomiccity/wp-content/uploads/sites/11/2014/12/Governance.pdf?_ga=1.83182294.1320535883.1415285934.

to have independent oversight by the Office of Independent Enterprise Assessments "to ensure the project is in compliance with nuclear safety requirements." Section 305 required an independent cost estimate for approving performance baseline and starting construction for projects with total cost over $100 million. Section 308 required the Secretary of Energy to provide an analysis of alternatives for each major warhead refurbishment program reaching the development engineering stage.

Directed Stockpile Work (DSW)

This program involves work directly on nuclear weapons in the stockpile, such as monitoring their condition; maintaining them through repairs, refurbishment, life extension, and modifications; conducting R&D in support of specific warheads; and dismantlement. The FY2016 request was $3,187.3 million; the enacted amount, on a comparable basis, for FY2015 was $2,797.2 million. The House Appropriations Committee recommended $3,354.3 million for FY2016. The House passed H.R. 2028, Energy and Water Development and Related Agencies Appropriations Act, 2016, by a vote of 240-177, without amendments to the Weapons Activities section of the bill as reported from committee. Specific items under DSW include the following:

Life Extension Programs (LEPs)

These programs aim to extend the life of existing warheads through design, certification, manufacture, and replacement of components. An LEP for the W76 warhead for the Trident II submarine-launched ballistic missile (SLBM) is ongoing, as is an LEP for the B61 mod 12. (A "mod," such as B61 mod 12 or B61-12, is a modification or version of a bomb or warhead type.)

For FY2016, the amounts requested by NNSA for LEPs are as follows. H.R. 2028, as passed by the House, provided the requested amounts.

- $244.0 million for the W76-1 LEP. The first production unit (FPU) was completed in FY2008, with production scheduled to be completed by FY2019.
- $643.3 million for the B61-12 LEP, with the FPU by the second quarter of FY2020.
- $220.2 million for the W88 Alt 370, to provide an arming-fuzing-firing system among other things, with the FPU in the first quarter of FY2020. The House Appropriations Committee, noting a growth in scope of work planned for the W88, directed NNSA to integrate the cost of certain other work to refurbish this warhead into selected acquisition reports for the W88 LEP.
- $195.0 million for the W80-4, a cruise missile warhead LEP. FY2015 was the first year for which NNSA requested funds for this warhead under the LEP heading. The LEP would seek to use common components from other LEPs and to improve warhead safety and security. The FPU is scheduled for FY2025. The House Appropriations Committee expressed its concern "that the NNSA has already settled on two alternatives for the W80-4 that are more expensive than the B61 life extension program … [and] has a history of spending large amounts of funding to develop alternatives that are tabled in order to pursue a more affordable option." Accordingly, the committee directed NNSA to task an

> independent group "to perform a red team assessment of the NNSA's alternatives selected for the W80-4 life extension program."

The budget request proposed suspending activities for an interoperable warhead (W78/88-1) that could be used on land-based intercontinental ballistic missiles (ICBMs) and SLBMs, and projected a 2030 FPU. The House Appropriations Committee did not comment on this change.

P.L. 113-235 provided full funding for the B61 LEP, the W76 LEP, the W88 Alt 370, and the cruise missile warhead life extension study. Regarding the latter, the Explanatory Statement noted a requirement for NNSA to provide a report on military requirements, cost, and schedule at the start of a design definition and cost study, should those activities be requested subsequently.

Stockpile Systems

This program involves routine maintenance, replacement of limited-life components, surveillance, assessment, and the like for all weapon types in the stockpile. The FY2015 request was $531.1 million, and P.L. 113-235 provided that amount. The FY2016 request was $482.4 million. H.R. 2028, as passed by the House, provided the requested amount.

Weapons Dismantlement and Disposition (WDD)

The number of warheads has fallen sharply since the end of the Cold War, and continues to decline. WDD involves interim storage of warheads to be dismantled; dismantlement; and disposition (i.e., storing or eliminating warhead components and materials). The FY2015 request was $30.0 million, and P.L. 113-235 provided $50.0 million; the Explanatory Statement directed NNSA to "report on the options available to avoid a dismantlement workload gap in the mid-2020s while still meeting the 2022 dismantlement goal." The FY2016 request was $48.0 million. H.R. 2028, as passed by the House, provided the requested amount.

Stockpile Services

This category includes Production Support; R&D Support; R&D Certification and Safety; Management, Technology, and Production; and Plutonium Infrastructure Sustainment. NNSA states, "Stockpile Services provides the foundation for the production capability and capacity within the nuclear security enterprise. All enduring systems, LEPs, and dismantlements rely on Stockpile Services to provide the base development, production and logistics capability needed to meet program requirements. In addition, Stockpile Services funds research, development, and production activities that support two or more weapons-types, and work that is not identified or allocated to a specific weapon-type." The FY2015 request was $1,108.5 million; P.L. 113-235 provided $1,034.5 million. The FY2016 request was $939.3 million. The FY2016 budget proposed moving some programs that had been in Stockpile Services to a new account, Nuclear Material Commodities. The FY2015-enacted amount comparable to the FY2016 budget structure was $762.4 million. For FY2016, H.R. 2028, as passed by the House, provided $932.1 million.

Nuclear Material Commodities

This program, new for FY2016, "consolidates funding for key material and production capabilities for plutonium, uranium, tritium, and enriched uranium for tritium production." The

latter capability is Domestic Uranium Enrichment. These capabilities were previously a part of Stockpile Services. The FY2016 request was $415.0 million; the comparable FY2015 amount was $376.7 million. For FY2016, the House Appropriations Committee recommended $589.2 million and stated, "The recommendation further expands the request to specify funds for the management of nuclear materials to other materials of strategic significance by including funding requested for Material Recycling and Recovery, Storage, Nuclear Materials Integration, and other planning efforts within Strategic Materials Sustainment." It termed the enlarged category "Strategic Materials." Within Nuclear Materials Commodities, the FY2016 request was $100.0 million. The House Appropriations Committee recommended $50.0 million, with a provision providing reprogramming authority for another $50.0 million. The committee awaited a study on tritium and low enriched uranium requirements and a preferred approach to meeting them, but saw little value to operating a centrifuge demonstration project indefinitely if DOE "cannot identify a near-term need to construct a national security train of centrifuges." H.R. 2028, as passed by the House, did not amend these provisions and provided the amount recommended by the House Appropriations Committee.

Research, Development, Test and Evaluation (RDT&E) Programs

RDT&E includes five programs. According to NNSA, they "[focus] on RDT&E efforts to develop and maintain critical capabilities, tools, and processes needed to support science based stockpile stewardship, refurbishment, and continued certification of the stockpile over the long-term in the absence of underground nuclear testing." Many of these programs have significance for policy decisions. For example, the Science Program's goals include improving the ability to assess warhead performance without nuclear testing, improving readiness to conduct nuclear tests should the need arise, and maintaining the scientific infrastructure of the nuclear weapons laboratories. Other programs fund large experimental facilities, such as the National Ignition Facility at Lawrence Livermore National Laboratory. RDT&E Programs was formerly named Campaigns. The FY2016 request was $1,776.6 million; H.R. 2028, as passed by the House, provided $1,774.2 million. The programs are:

Science Program

This program "provides the expertise and confidence needed to maintain the nuclear stockpile," including identification of "future risks to the performance of the stockpile." FY2015-enacted funding was $412.1 million, of which P.L. 113-235 designated $21.0 million for designing new radiography capabilities at U1a, the part of the Nevada National Security Site where certain weapons-related experiments are conducted. The FY2016 request was $389.6 million; the House Appropriations Committee recommended $412.9 million, which would, among other things, provide funds "to better understand the properties of plutonium and to advance concepts for pit reuse" and "to enhance U.S. capabilities to assess foreign state weapons activities." The recommendation did not include funding for new radiography capabilities: "The NNSA did not provide a project data sheet with a multi-year funding plan as required by the Committee." H.R. 2028, as passed by the House, provided the amount recommended by the House Appropriations Committee.

Engineering Program

This program "matur[es] advanced technologies to improve weapon surety; provid[es] the tools for qualifying weapon components and certifying weapons without underground testing; and support[s] annual stockpile assessments." FY2015-enacted funding was $136.0 million; the FY2016 request was $131.4 million. H.R. 2028, as passed by the House, provided the requested funding.

Inertial Confinement Fusion Ignition and High Yield Program

This program is developing tools to create extremely high temperatures and pressures in the laboratory—approaching those of a nuclear explosion—to support weapons-related research and attract scientific talent to the Stockpile Stewardship Program. The centerpiece of this campaign is the National Ignition Facility (NIF), the world's largest laser. NIF is intended to produce "ignition," the point at which a nuclear fusion reaction generates more energy than is used by the lasers to create the reaction. While achieving ignition has been delayed, NIF has nonetheless proven to be of value to stockpile stewardship at energy levels that do not reach ignition. NIF was controversial in Congress for many years, but controversy waned as the program progressed. NIF was dedicated in May 2009.[4] The FY2015-enacted amount was $512.9 million; the Explanatory Statement to P.L. 113-235 directed NNSA to provide "an assessment on whether the likelihood of achieving ignition at the NIF has increased since December 2012 and the level of confidence that the NNSA will achieve ignition at the NIF by December 2015." The FY2016 request was $502.5 million; H.R. 2028, as passed by the House, provided $511.1 million.

Advanced Simulation and Computing (ASC) Program

This program develops computation-based models of nuclear weapons that integrate data from other campaigns, past test data, laboratory experiments, etc., to create what NNSA calls "the computational surrogate for nuclear testing to determine weapon behavior." ASC also supports nonproliferation, emergency response, and nuclear forensics. Some analysts doubt that simulation can be relied upon to provide the confidence needed to certify the safety, security, and reliability of warheads, and advocate a return to testing. The FY2015-enacted amount was $598.0 million, of which $50.0 million was for the exascale initiative, which is intended to further increase computing capability. The FY2016 request was $623.0 million; H.R. 2028, as passed by the House, provided $605.0 million.

Advanced Manufacturing Development

Through FY2015, this program was the Readiness Campaign. It had several subprograms, but the entire FY2015 request was for the Nonnuclear Readiness subprogram, which "develops capabilities to manufacture components used for Directed Stockpile Work." The House Appropriations Committee recommended no funds for this campaign. Instead, it recommended establishing an Advanced Manufacturing Campaign "to develop, demonstrate, and utilize advanced technologies that are needed to enhance the NNSA's secure manufacturing capabilities

[4] Lawrence Livermore National Laboratory, "Dedication of World's Largest Laser Marks the Dawn of a New Era," press release, May 29, 2009, https://publicaffairs.llnl.gov/news/news_releases/2009/NR-09-05-05.html.

and ensure timely support for the production of nuclear weapons and other critical national security components." The Senate Appropriations Committee recommended $70.0 million. P.L. 113-235 provided no funds for the Readiness Campaign; instead, it provided $107.2 million (the enacted amount) for Advanced Manufacturing Development, the subprograms of which are additive manufacturing, component manufacturing development, and process technology development. The Explanatory Statement directed NNSA to provide "a ten-year strategic plan for using additive manufacturing to reduce costs at NNSA production facilities while meeting stringent qualification requirements." The FY2016 request, $130.1 million, was for Advanced Manufacturing Development, with the three subprograms listed in P.L. 113-235. The House Appropriations Committee recommended $113.8 million, including $16.0 million for additive manufacturing (AM). The committee expressed concern that the budget request, by applying development of AM capabilities "holistically across the enterprise ... reduces transparency into how well and how fast the NNSA is developing these advanced production technologies." H.R. 2028, as passed by the House, provided the amount recommended by the House Appropriations Committee.

Readiness in Technical Base and Facilities (RTBF)

This program used to fund infrastructure and operations at nuclear weapons complex sites. However, beginning in FY2016, its main funding elements were material recycle and recovery, recapitalization of facilities, and construction of facilities. The latter included two controversial and expensive projects, the Uranium Processing Facility (UPF) at the Y-12 National Security Complex (TN) and the Chemistry and Metallurgy Research Replacement (CMRR) Project, which deals with plutonium, at Los Alamos National Laboratory (NM). Both have been significantly revised over the past several years due to cost growth and schedule slippage. The FY2016 budget structure transferred certain functions from RTBF to Infrastructure and Safety, described below. Of the FY2015 appropriation, the amount comparable to FY2016 RTBF was $688.0 million; the Explanatory Statement directed NNSA to provide "a ten-year strategic plan that would reduce the deferred maintenance backlog below fiscal year 2014 baseline levels and dispose of unneeded facilities." The FY2016 request was $1,054.5 million.

The House Appropriations Committee recommended consolidating funding for RTBF, Infrastructure and Safety, and Site Stewardship into a new category, Infrastructure and Operations (I&O), for which it recommended $2,228.2 million. Its goal was to eliminate duplication. It "does not support changing the budget structure each year to conform to internal organizational changes." I&O, as recommended by the committee, included, among other things, Operation of Facilities, Maintenance and Repair of Facilities, and Recapitalization. H.R. 2028, as passed by the House, provided the amount recommended by the House Appropriations Committee and did not amend the committee's recommendation on consolidation.

The House Appropriations Committee expressed its concern about requests for construction funding.

> The Committee is concerned that there is little accountability for advancing construction projects at the early design stages and that advance funds are being requested to initiate new construction without providing the cost and schedule projections for which the NNSA is accountable. Without this information, the Committee cannot determine whether the projects requested are affordable and are being managed appropriately so that it may approve new start authority. … The Committee will consider a request to initiate a new construction start

> when the Department is prepared to provide an accurate multi-year cost and schedule estimate with its budget request.

As part of construction funding, the committee recommended the amounts requested for UPF and CMRR, $$430.0 million and $155.6 million, respectively. H.R. 2028, as passed by the House, provided the amounts recommended by the committee.

Infrastructure and Safety

Infrastructure and Safety (I&S), a new program for FY2016, includes parts of RTBF and another program, Site Stewardship, described below. "The mission is to maintain, operate, and modernize" NNSA's infrastructure. It has five elements: Operations of Facilities, Safety Operations, Maintenance, Recapitalization, and Line Item Construction. According to NNSA, "Together these elements provide a comprehensive approach to arresting the declining state of NNSA infrastructure." The FY2016 request was $1,466.1 million; the comparable FY2015-enacted funding was $1,386.7 million. While NNSA states that "construction investments will replace obsolete and unreliable facilities and infrastructure," NNSA requested the bulk of FY2016 construction funds, $660.2 million, under RTBF, compared with $42.9 million for I&S construction. The House Appropriations Committee recommended $660.1 million for the funds requested under RTBF construction. As noted in the previous paragraph, the committee recommended consolidating I&S into I&O. H.R. 2028, as passed by the House, provided the amount recommended by the committee and did not amend the consolidation provision.

Other Programs

Weapons Activities has several smaller programs, including the following:

Secure Transportation Asset

This program provides for safe and secure transport of nuclear weapons, components, and materials. It includes special vehicles for this purpose, communications and other supporting infrastructure, and threat response. The FY2015 comparable enacted amount was $219.0 million; the FY2016 request was $251.6 million. The House Appropriations Committee recommended $232.0 million, and stated, "The budget request included a significant ramp up in the size of the federal workforce, but the NNSA has not provided any information to justify such an increase and reductions in the planned transport of mixed oxide feedstock will reduce requirements." H.R. 2028, as passed by the House, provided the amount recommended by the committee.

Nuclear Counterterrorism Incident Response Program

This program "responds to and mitigates nuclear and radiological incidents worldwide and has a lead role in defending the Nation from the threat of nuclear terrorism." For FY2014, NNSA proposed transferring this program to Defense Nuclear Nonproliferation "to align all NNSA funding for reducing global nuclear dangers in one appropriation." Congress rejected this approach; P.L. 113-76 provided $228.2 million and retained the program in Weapons Activities.

For FY2015, NNSA requested $173.4 million, and the House provided $202.9 million. Among other things, the bill provided $25.0 million for certain emergency response-related R&D that had been traditionally funded in Weapons Activities; the Administration requested no funds in the Nuclear Counterterrorism Incident Response Program for this R&D. The Senate Appropriations Committee draft recommended providing the requested amount. P.L. 113-235 provided $177.9 million, of which $142.6 million "is for emergency response activities to fully support the ninth stabilization city"—an additional city that would receive counterterrorism training and equipment. The Administration requested no funds for this program for FY2016 in Weapons Activities. Instead, NNSA proposed to "merge the Nuclear Counterterrorism Incident Response (NCTIR) and the Counterterrorism and Counterproliferation (CTCP) Programs to eliminate confusion about NNSA nuclear counterterrorism programs and activities, change the NCTIR name to Nuclear Counterterrorism and Incident Response Program, and move to the Defense Nuclear Nonproliferation (DNN) appropriation." H.R. 2028, as passed by the House, provided no funds for FY2016 for this program under Weapons Activities.

Counterterrorism and Counterproliferation Program

This program "sustain[s] and exercise[s] the U.S. Government's ability to understand nuclear terrorism and to counter nuclear device proliferation." It conducts "national and international outreach to strengthen nuclear counterterrorism capabilities" and is "a key nexus to coordinate and integrate other nuclear technical counterterrorism efforts existing within the Federal government." FY2015 was the first year for which NNSA requested funding, $76.9 million, for this program in Weapons Activities. The House Appropriations Committee recommended no funding for this program under Weapons Activities, maintaining that it and similar programs should be located in DNN instead of Weapons Activities. The Senate Appropriations Committee draft recommended providing $70.0 million. P.L. 113-235 provided $46.1 million. As just noted, NNSA, in its FY2016 request, proposed moving this and another program to DNN. H.R. 2028, as passed by the House, provided no funds for FY2016 for this program under Weapons Activities.

Site Stewardship

This program has two subprograms. Nuclear Materials Integration funds "stabilization, consolidation, packaging and disposition of nuclear materials," and maintains a system to track and account for nuclear materials at DOE sites and sites licensed by the Nuclear Regulatory Commission. The Minority Serving Institution Partnership "funds research and education enhancements at under-represented colleges and universities in order to increase the number of people with the needed skills and talent to support NNSA's enduring technical workforce." For FY2016, NNSA proposed to move part of this program to Infrastructure and Safety. The FY2016 request for the remaining Site Stewardship program was $36.6 million; the comparable amount for FY2015 was $27.8 million. The House Appropriations Committee recommended no funds for this program under Site Stewardship; instead, as noted, it recommended including this program in Infrastructure and Operations. H.R. 2028, as passed by the House, provided no funds for this program under Site Stewardship and did not amend the committee's recommendation on consolidation.

Defense Nuclear Security

This program provides operations, maintenance, and construction funds for protective forces, physical security systems, personnel security, and the like. Its "core mission is to develop and implement security programs, including protection, control and accountability of materials, as well as the physical security of all NNSA facilities." The FY2016 request was $632.9 million; the comparable amount for FY2015 was $636.1 million. The House Appropriations Committee recommended $682.9 million, with the funding above the request intended "to replace security cameras and meet shortfalls anticipated in funding for protective forces at Y-12 and other NNSA sites." The committee also recommended $35.0 million to start a Security Improvements Program "that is intended to address the backlog of security projects that must be performed over the next several years. The NNSA has identified over $2,000,000,000 in security infrastructure upgrades that are needed, but the NNSA has not adequately prioritized these upgrades in its budget request." It also expressed concern that NNSA terminated a Security Improvements Program at Y-12 before completing the planned work. H.R. 2028, as passed by the House, provided the amounts that the committee recommended.

Information Technology and Cybersecurity

This program "is focused on the development of a suite of IT initiatives that provide a state-of-the-art technology infrastructure for enabling the nuclear security mission and future nuclear security enterprise shared services." Elements include cybersecurity, enterprise secure computing, and Federal Unclassified Information Technology. The latter will provide "commodity computing infrastructure" to support a "shift from a traditional, costly desktop support model to a cloud-provisioned virtualized desktop-based solution." The FY2016 request was $157.6 million; the comparable amount for FY2015 was $179.6 million. H.R. 2028, as passed by the House, provided the amount requested for FY2016.

Legacy Contractor Pensions

For many decades, the University of California (UC) operated Los Alamos and Lawrence Livermore National Laboratories. Laboratory employees, as UC employees, could participate in the UC pension plan. When the operation of the two labs was privatized, the contracts between DOE and the new laboratory operators included provisions that mirrored the pension that lab staff who were UC employees when the labs were privatized would have received had the labs remained with UC. These pensions were larger than those provided to employees hired after privatization. To make up the difference, NNSA paid into the pension plan for the UC employees. For Weapons Activities, the FY2016 request was $283.9 million; the comparable enacted amount for FY2015 was $307.1 million. For FY2016, H.R. 2028, as passed by the House, provided the requested amount. (NNSA requested an additional amount for Legacy Contractor Pensions under Defense Nuclear Nonproliferation.) NNSA projects that requests for this program will decline, falling to $87.4 million in FY2019 and FY2020.

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