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NATIONAL NUCLEAR SECURITY ADMINISTRATION

Analyzing Cost Savings Program Could Result in Wider Use and Additional Contractor Efficiencies

GAO-20-451

GAO Highlights

Highlights of GAO-20-451, a report to congressional committees

June 2020

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Analyzing Cost Savings Program Could Result in Wider Use and Additional Contractor Efficiencies

Why GAO Did This Study

NNSA relies on M&O contracts to manage and operate its eight laboratory and production sites. In 2013, NNSA awarded a consolidated M&O contract to CNS for the Y-12 and Pantex sites to reduce costs. In the contract, NNSA required that CNS create a Cost Savings Program. CNS proposed it would save about $2.9 billion over the contract's potential 10-year term.

The Senate committee report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2019 includes a provision for GAO to review the cost savings achieved from the competition and award of the CNS contract. GAO's report examines the extent to which (1) CNS achieved proposed cost savings from fiscal year 2014 through fiscal year 2018 and (2) NNSA identified benefits associated with the Cost Savings Program and used that information to improve its M&O contracts.

GAO reviewed documentation and data on the Cost Savings Program from NNSA and CNS, interviewed NNSA headquarters and field office officials as well as representatives from M&O contractors, and toured the Y-12 site to understand examples of cost savings initiatives.

What GAO Recommends

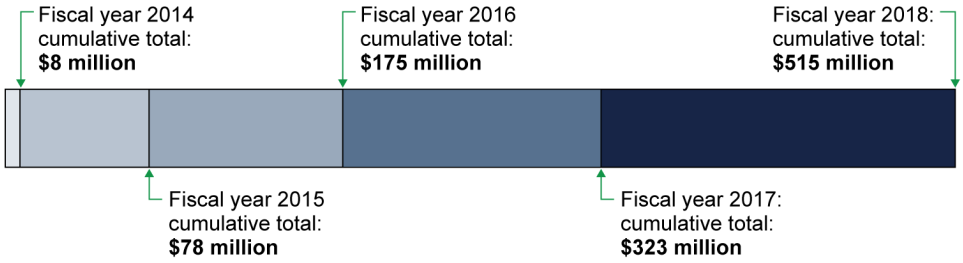
GAO is making four recommendations, including that NNSA document its analysis of the Cost Savings Program to determine whether it is exportable to other contracts. NNSA generally agreed with the four recommendations.

View GAO-20-451. For more information, contact Allison Bawden at (202) 512-3841 or bawdena@gao.gov.

What GAO Found

The National Nuclear Security Administration (NNSA) verified about $515 million in cumulative cost savings claimed by Consolidated Nuclear Security, LLC, (CNS) from fiscal year 2014 through fiscal year 2018 (see figure). CNS was awarded the management and operating (M&O) contract for both the Y-12 National Security Complex (Y-12) in Tennessee and the Pantex Plant (Pantex) in Texas. Those savings represented about 80 percent of the approximately $640 million CNS proposed it would save through the end of fiscal year 2018. CNS achieved most of the savings through labor savings—for example, by reducing positions. While CNS's and NNSA's methods for calculating and verifying savings evolved in the early years of the contract, GAO concluded the $515 million in reported cumulative savings represents a reasonable estimate. However, due to differences between proposed and achieved savings through fiscal year 2018, and annual savings projections that are lower for the remaining years of the contract, it may be difficult for the contractor to achieve its total proposed $2.9 billion in savings over the potential 10-year contract that would end in 2024.

NNSA-Verified Cumulative Contract Savings Achieved by Consolidated Nuclear Security, LLC, from Fiscal Year 2014 through Fiscal Year 2018



Source: National Nuclear Security Administration (NNSA). | GAO-20-451

NNSA officials identified three key benefits of the Cost Savings Program—achieving savings, reinvesting in site infrastructure, and increasing financial transparency—but has not determined whether the program could be implemented at other sites to improve its M&O contracts. For example, NNSA officials said achieving cost savings at other sites could be useful, and most M&O contracts include a clause under which sites could implement a Cost Savings Program with some attributes of the program at Y-12 and Pantex. However, NNSA is not planning to implement the Cost Savings Program—or a variation of it—at other sites. NNSA officials and contractor representatives were uncertain about whether the Cost Savings Program could be exported to other existing or future contracts because NNSA has not gathered information on nor documented its analysis of the Cost Savings Program. GAO has previously found that leading organizations gather and analyze data to identify opportunities to reduce costs, among other reasons. By performing such an analysis, NNSA officials and contractors' representatives could make better-informed decisions about whether to implement aspects of the Cost Savings Program under existing contracts or as part of future M&O contracts to achieve additional savings in the future.

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Abbreviations

CNS	Consolidated Nuclear Security, LLC
DCAA	Defense Contract Audit Agency
DOE	Department of Energy
FAR	Federal Acquisition Regulation
M&O	management and operating
NNSA	National Nuclear Security Administration
NPO	NNSA's Production Office
Pantex	Pantex Plant (Amarillo, Texas)
PPA	programs, projects, or activities
Y-12	Y-12 National Security Complex (Oak Ridge, Tennessee)

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The National Nuclear Security Administration (NNSA)—a separately organized agency within the Department of Energy (DOE)—is responsible for, among other things, (1) enhancing national security through the military application of nuclear energy; (2) maintaining and modernizing infrastructure for the U.S. nuclear weapons stockpile; and (3) supporting the nation's nuclear nonproliferation efforts. To execute its missions, NNSA relies on management and operating (M&O) contracts—recognized as a special contracting method—to manage and operate its eight laboratory and production facilities, known as the nuclear security enterprise.[1] According to officials from NNSA's Office of Management and Budget, NNSA obligated $15.1 billion in fiscal year 2019, with $13.1 billion—about 90 percent—obligated to M&O contracts.

In January 2013, NNSA awarded a consolidated M&O contract for the Y-12 National Security Complex in Oak Ridge, Tennessee, (Y-12) and the Pantex Plant in Amarillo, Texas, (Pantex) to Consolidated Nuclear Security, LLC (CNS).[2] NNSA's Production Office (NPO) is the federal field office that provides local oversight of CNS operations at both sites. NNSA entered into the consolidated contract at Y-12 and Pantex with several objectives, one of which was to reduce the cost of performing work at both sites. As a result, NNSA required that the contractor create a Cost Savings Program to reduce costs and operate facilities in a more efficient and effective manner, where process improvement is continuously emphasized. CNS proposed that it would be able to save approximately

[1]M&O contracts are agreements under which the government contracts for the operation, maintenance, or support, on its behalf, of a government-owned or government-controlled research, development, special production, or testing establishment wholly or principally devoted to one or more of the major programs of the contracting agency. 48 C.F.R. § 17.601. The nuclear security enterprise is defined at 50 U.S.C. § 2501.

[2]CNS is comprised of member companies Bechtel National, Inc.; Leidos; ATK Launch Systems; and SOC LLC, with Booz Allen Hamilton, Inc. as a teaming subcontractor. CNS began its administration of the consolidated contract on July 1, 2014, following three protests of NNSA's award of this M&O contract to CNS.

$2.9 billion over the potential 10-year contract.[3] According to the terms of the contract, the verified savings are to be split into three portions: one for the government; one for the contractor; and one for other activities under the contract, which NNSA uses for reinvestment in the sites.[4]

DOE and NNSA rely on M&O contracts and must employ strong contract management to successfully and cost-effectively meet their goals. DOE's history of inadequate management and oversight of its contractors led GAO, since 1990, to designate aspects of the department's contract management as a high-risk area vulnerable to fraud, waste, abuse, and mismanagement.[5] As cost-reimbursement-type contracts, M&O contracts are considered high risk for the government because of the potential for cost escalation and because the government pays a contractor's costs of

[3]This figure represents CNS's revised proposal as of 2017. In its original bid, CNS proposed it would save approximately $3.27 billion. CNS's proposed savings decreased by approximately $360 million due to two changes. The proposed savings decreased by about $93 million because of changes in actual site operations between the request for proposals in December 2011 and when CNS took over administration of the contract in July 2014. The remaining $267 million change is related to NNSA directing CNS to remove all potential savings associated with incorporating certain operations performed at another nuclear security enterprise site, the Savannah River Site in South Carolina, an option under the CNS contract that NNSA has not exercised. For the purposes of this report, "proposed savings" will refer to the $2.9 billion in savings identified in 2017.

[4]The portion of verified savings that is available for the government allows NNSA to return those savings to the programs for which funds were originally obligated. The portion of verified savings the contractor receives is in the form of a cost-savings incentive fee. The portion of verified savings that are for other activities under the Y-12 and Pantex contract are available for implementation costs for future cost savings initiatives; program, project, or indirect cost activities to finance additional approved mission work; projects that serve the M&O site as a whole, such as a parking structure or an office building; and for certain employee compensation for non-key personnel.

[5]In January 2009, GAO narrowed the focus of DOE's high-risk designation to contracts within NNSA and DOE's Office of Environmental Management, and in February 2013, GAO further narrowed this focus to major projects (those with an estimated cost of $750 million or more) to acknowledge progress made in managing nonmajor projects. See GAO, *High-Risk Series: An Update*, GAO-13-283 (Washington, D.C.: February 2013) and, *High-Risk Series: An Update*, GAO-09-271 (Washington, D.C.: Jan. 22, 2009). For the most recent high-risk report, see GAO, *High-Risk Series: Substantial Efforts Needed to Achieve Greater Progress on High-Risk Areas*, GAO-19-157SP (Washington, D.C.: Mar 6, 2019).

performance regardless of whether the work is completed.[6] The CNS contract includes an annual award fee based on certain performance criteria, and a cost-savings incentive fee based on a share of the savings NNSA verifies every year.[7]

The Senate committee report accompanying S. 2987, a bill for the National Defense Authorization Act for Fiscal Year 2019, includes a provision for GAO to review the cost savings achieved, among other issues, from the competition and award of NNSA's M&O contract to CNS for Y-12 and Pantex.[8] Our report addresses the extent to which:

(1) CNS has achieved the cost savings it proposed for the consolidated contract for Y-12 and Pantex, from fiscal year 2014 through fiscal year 2018, and

(2) NNSA has identified benefits of the Cost Savings Program and used that information to improve other M&O contracts.[9]

To determine the extent to which CNS has achieved the cost savings it proposed for the consolidated contract for Y-12 and Pantex from fiscal year 2014 through fiscal year 2018, we reviewed relevant contract and Cost Savings Program requirements, as well as other relevant assessments of the Cost Savings Program, such as the December 2017

[6]Cost-reimbursement-type contracts allow the agency to contract for work when circumstances do not allow the agency to sufficiently define its requirements or estimate its costs to allow for a fixed-price contract. Under a fixed-price contract, a contractor accepts responsibility for completing a specified amount of work for a fixed price. In contrast, under cost-reimbursement contracts, the government reimburses a contractor for allowable costs incurred, to the extent prescribed by the contract. The government may also pay a fee that is either fixed at the outset of the contract or adjustable based on performance criteria set out in the contract.

[7]The contract also included a fixed fee in its first year. Incentive fees are commonly used in M&O contracts and are generally used to motivate achieving specified cost objectives, though they may be used to motivate performance toward specific delivery (e.g., schedule) targets or technical goals. NNSA refers to this type of fee as the cost-savings incentive fee under the CNS contract, and for the purposes of this report, we use NNSA's term.

[8]S. Rep. No. 115-262, at 411 (2018).

[9]NNSA was in the process of reviewing the fiscal year 2019 savings at the time we were completing our review. Therefore, we excluded fiscal year 2019 data from our review. Because CNS began its administration of the contract on July 1, 2014, the time period we reviewed is the fourth quarter of fiscal year 2014 through the end of fiscal year 2018.

review by DOE's Office of the Inspector General.[10] We interviewed NNSA officials from NPO and NNSA's Offices of Acquisition and Project Management and Management and Budget, as well as representatives from CNS, to learn about the processes and procedures related to the Cost Savings Program. For example, we interviewed NNSA and CNS officials about how CNS implements cost reduction initiatives—actions taken to reduce costs—and calculates the savings associated with those initiatives, as well as how NNSA verifies that the implemented cost reduction initiatives have produced savings.[11] We also interviewed NNSA officials and CNS representatives about how these processes may have evolved over time and how such changes could affect reported savings.

We conducted a site visit to Y-12, during which time we observed parts of NNSA's interim cost-savings review process that occurs throughout the year. Additionally, we reviewed and analyzed NNSA and CNS documents relevant to these processes for fiscal years 2014 through 2018. Key documents we reviewed included CNS's Merger Transformation Plan, Annual Controlled Baseline, Cost Reduction Proposal annual updates, Validation Reports, and NNSA's Verification Reports.

To assess the reliability of NNSA's and CNS's cost savings data contained in these key documents, we (1) interviewed knowledgeable officials concerning the data and the system that produced them, (2) traced information from 22 of about 90 cost reduction initiatives for which CNS claimed savings to source documents and reconciled discrepancies with NNSA and CNS officials,[12] (3) reviewed NNSA's documented procedures for verifying CNS's reported data and obtained samples of supporting documentation for NNSA following its documented procedures, and (4) reviewed independent third-party Defense Contract

[10]Department of Energy, Office of Inspector General, *National Nuclear Security Administration's Oversight of the Consolidated Nuclear Security, LLC, Cost Savings Program at the Y-12 National Security Complex and the Pantex Plant*, DOE-OIG-18-11 (Washington, D.C.: Dec. 13, 2017).

[11]According to a CNS planning document, cost reduction initiatives are merger, transformation, and continuous improvement actions that CNS takes to reduce the current baseline cost in a particular program, project, or organizational area.

[12]We selected the 22 cost reduction initiatives based on the savings category they represented, the amount of savings involved, and whether NNSA accepted or rejected the savings, among other things, in order to choose initiatives that represented different categories, large amounts of savings, and illustrated NNSA's verification processes. The findings from the 22 cannot be generalized to those we did not review.

Audit Agency (DCAA) audits of CNS's fiscal years 2016, 2017, and 2018 cost savings data.[13] We did not independently confirm the labor hours charged to establish the baseline or determine cost savings at Y-12 and Pantex during the scope of our review. Instead, we relied on NNSA's verification of the initial baseline used to describe the scope of work, cost, and schedule that NNSA uses to evaluate whether CNS achieved savings. We also relied on NNSA's verification process for ensuring the proper number of labor hours had been charged as the basis for determining whether cost savings were achieved. We interviewed NNSA officials about the agency's verification process and analyzed NNSA documentation related to the process. We determined that the data were sufficiently reliable for the purposes of this report. We then compared NNSA's verified savings to CNS's proposed savings to examine changes across time and any factors that could affect CNS's ability to reach its proposed savings.

To determine the extent to which NNSA has identified benefits of the Cost Savings Program and used that information to improve other M&O contracts, we reviewed and analyzed NNSA and CNS documents and data related to the Cost Savings Program. We interviewed NNSA officials from NPO and NNSA's Office of Acquisition and Project Management about the costs of developing, implementing, and overseeing the Cost Savings Program. We also interviewed NNSA officials from NNSA's Office of Management and Budget, and five other NNSA sites in the nuclear security enterprise, as well as CNS representatives and representatives from the M&O contractors at five other sites.[14]

[13]Defense Contract Audit Agency, *Independent Audit Report on Consolidated Nuclear Security, LLC's Contractor Fiscal Year (CFY) 2016 Cost Savings Validation Report*, Audit Report No. 3511-2019J17900004 (Irving, TX: Sept. 30, 2019); Defense Contract Audit Agency, *Independent Audit Report on Consolidated Nuclear Security, LLC's Contractor Fiscal Year (CFY) 2017 Cost Savings Validation Report*, Audit Report No. 3511-2019J17900005 (Irving, TX: Jan. 14, 2020); and Defense Contract Audit Agency, *Independent Audit Report on Consolidated Nuclear Security, LLC's Contractor Fiscal Year (CFY) 2018 Cost Savings Validation Report*, Audit Report No. 3511-2019J17900006 (Irving, TX: Jan. 14, 2020).

[14]Other than Y-12 and Pantex, NNSA's missions are largely executed at six other sites: Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Sandia National Laboratories, Kansas City National Security Campus, the Nevada National Security Site, and the Savannah River Site. Though the Savannah River Site is part of the nuclear security enterprise, we did not interview NNSA or M&O officials from that site to determine potential benefits of implementing a Cost Savings Program because while NNSA conducts work there, DOE's Office of Environmental Management operates the site overall.

Additionally, we visited the Y-12 facility and observed cost reduction initiatives and toured site reinvestment projects to better understand some of the benefits associated with the Cost Savings Program.[15]

We conducted this performance audit from January 2019 to June 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

NNSA's Missions and Organization

NNSA's nuclear stockpile missions are largely executed at eight sites that are managed by seven M&O contractors and that comprise the nuclear security enterprise.[16] These eight sites include:

- three national security laboratories—Lawrence Livermore National Laboratory in California, Los Alamos National Laboratory in New Mexico, and Sandia National Laboratories in New Mexico and other locations;
- four nuclear weapons production plants—the Pantex Plant in Texas, the Y-12 National Security Complex in Tennessee, the Kansas City National Security Campus in Missouri, and tritium operations at DOE's Savannah River Site in South Carolina;[17] and
- the Nevada National Security Site, formerly known as the Nevada Test Site.

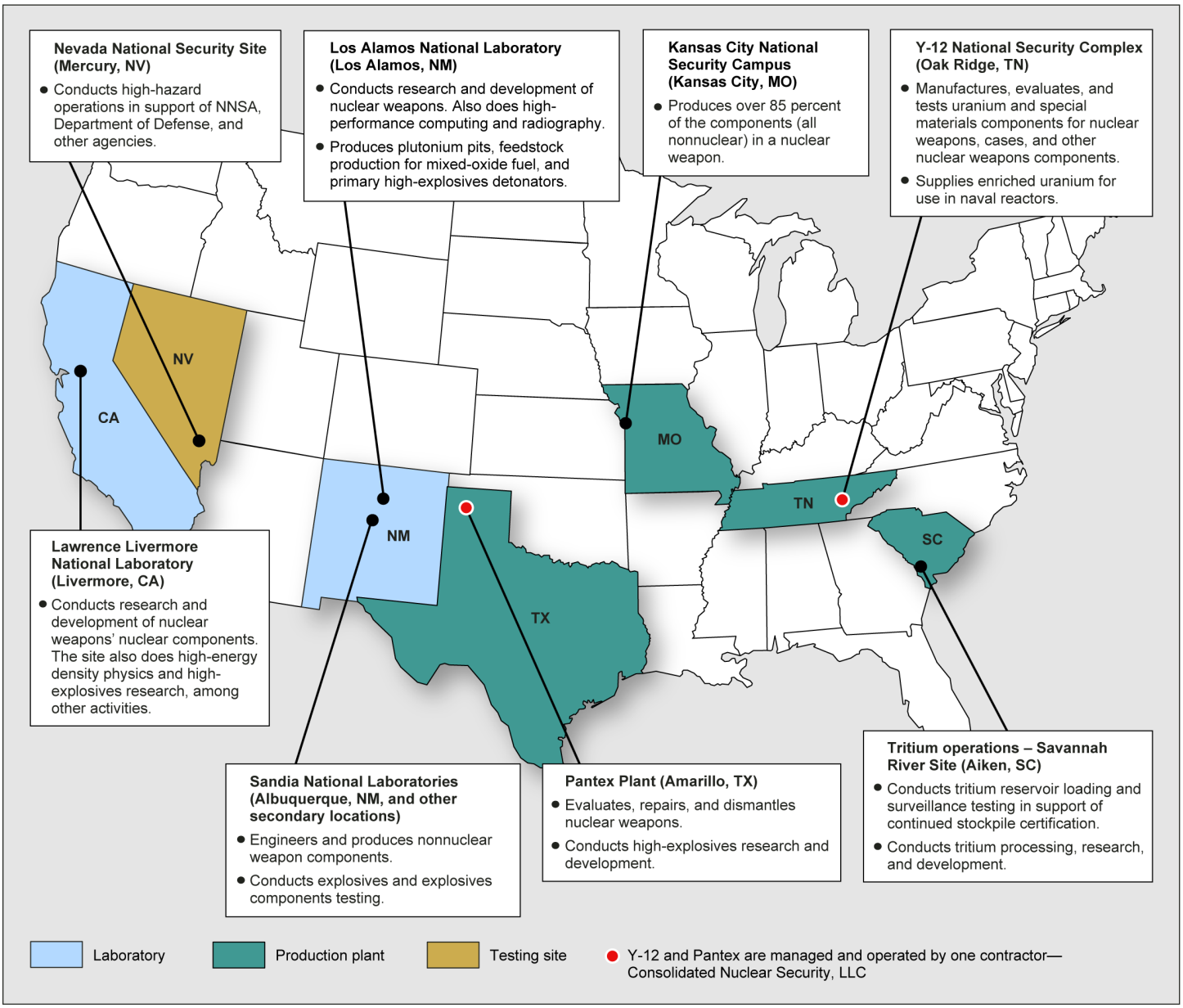
[15]According to the contract, a certain portion of verified cost savings from the Cost Savings Program is designated to go back into contract activities, such as site reinvestment projects, which can include improving site infrastructure or purchasing machinery to improve or automate processes. Though these funds can also be used for certain other purposes, such as implementation costs for future cost savings initiatives, NNSA refers broadly to these activities as site reinvestment activities, as we will throughout this report.

[16]Because Y-12 and Pantex are now managed by one contractor—CNS—the eight sites are managed by seven contractors.

[17]The M&O contract for the Savannah River Site is managed by the DOE Office of Environmental Management, but the contractor also performs work for NNSA and the site is part of the nuclear security enterprise. 50 U.S.C. § 2501.

As shown in figure 1, each of NNSA's eight sites has specific responsibilities within the nuclear security enterprise.

Figure 1: National Nuclear Security Administration's (NNSA) National Security Laboratories, Production Plants, and Testing Sites



Sources: GAO presentation of NNSA information; Map Resources (map). | GAO-20-451

NNSA's sites are owned by the federal government but managed and operated by M&O contractors. According to DOE, the use of M&O contracts is supported by an underlying principle: the federal government employs highly capable companies and educational institutions to manage and operate government-owned or government-controlled scientific, engineering, and production facilities because these companies and educational institutions have greater flexibility in bringing scientific and technical skills to bear than the government. As we previously found, an M&O contract is characterized by, among other things, a close relationship between the government and the contractor for conducting work of a long-term and continuing nature.[18]

To support its missions, NNSA is organized into program offices that oversee the agency's numerous programs, such as the B61-12 Life Extension Program[19]—overseen by the Office of Defense Programs—and the Nuclear Smuggling Detection and Deterrence Program—overseen by the Office of Defense Nuclear Nonproliferation. Mission-related activities are primarily overseen by these program offices, which are responsible for integrating the activities across the multiple sites performing work. NNSA's program offices are:

- Counterterrorism and Counterproliferation;
- Defense Nuclear Nonproliferation;
- Defense Nuclear Security;
- Defense Programs;
- Emergency Operations;
- Naval Reactors; and
- Safety, Infrastructure, and Operations.

NNSA receives four different appropriations, which it is responsible for allocating to programs that are managed by the program offices. The

[18]GAO, *National Nuclear Security Administration: Reports on the Benefits and Costs of Competing Management and Operating Contracts Need to Be Clearer and More Complete*, GAO-15-331 (Washington, D.C.: Mar. 23, 2015).

[19]The B61 nuclear bomb is the oldest nuclear weapon type in the United States' active stockpile, and critical components of these bombs are approaching the end of their operational lives. To maintain the safety, security, and effectiveness of B61 bombs, NNSA and the Department of Defense are undertaking a life extension program that will result in a bomb known as the B61-12.

program offices obligate these funds to the M&O contracts to execute specific program functions. Obligated funds that are not "costed," or expended, by the contractor at the end of the fiscal year can carry over for expenditure in a subsequent fiscal year, or the program offices can deobligate the funds and obligate them to a different contract for work in that same program area.[20] In order for funds to be reallocated to a different program, NNSA may need to reprogram funds; such reprogramming may be subject to congressional notice and approval requirements.

NNSA headquarters offices generally are to provide leadership, develop policy and budgets, or provide other functional support across NNSA. NNSA headquarters offices include the offices of:

- the Administrator,
- Acquisition and Project Management,
- Cost Estimating and Program Evaluation,
- External Affairs,
- General Counsel,
- Information Management and Chief Information Officer,
- Management and Budget, and
- Policy.

NNSA has seven field offices across the country. Field office managers report directly to the NNSA Administrator. NNSA field offices, such as NPO, are collocated at the laboratory, plant, and testing sites and are responsible for overseeing NNSA's M&O contractors, including ensuring compliance with federal contracts. To provide oversight of the M&O contractors, each field office employs subject matter experts in areas such as emergency management, physical security, cybersecurity, safety, nuclear facility operations, environmental protection and stewardship, radioactive waste management, quality assurance, business and contract

[20]The terms "costed" and "expended" are used interchangeably by NNSA, but there are minor technical differences between them. Specifically, funds are costed after the invoice for work has been received, the work has been completed, and the invoice is approved for payment. Expenditures, or outlays, refer to when an obligation is actually liquidated through issuance of a check, electronic transfer of funds, or disbursement of cash.

administration, public affairs, and project management. NNSA's field offices are:

- Kansas City Field Office in Missouri,
- Livermore Field Office in California,
- Los Alamos Field Office in New Mexico,
- Nevada Field Office,
- NPO in Tennessee and Texas,
- Sandia Field Office in New Mexico, and
- Savannah River Field Office in South Carolina.

Before awarding the consolidated contract at Y-12 and Pantex, NNSA took steps to consolidate its field offices that oversee the contractor at these two sites. Specifically, NNSA combined the former Y-12 Site Office and former Pantex Site Office into the NPO Field Office in 2012. One NPO manager oversees both the Y-12 and Pantex sites, and each site has a deputy manager. The deputy managers oversee their respective sites as well as certain programs at both sites. The NPO Cost Savings Program Manager provides overall administration of the Cost Savings Program. As of fiscal year 2018, NPO had about 130 federal full-time equivalent employees at both sites, according to an NPO official. According to CNS officials, the contractor employs over 9,000 employees at Y-12 and Pantex.[21] According to an NPO official, NPO acts as a single office because the two sites are closely integrated.

Consolidated Contract History and Requirements

In December 2011, NNSA issued a request for proposals for a consolidated M&O contract for the Y-12 and Pantex sites. NNSA awarded the M&O contract to CNS in January 2013. However, the award was the

[21]This number includes construction craft and employees at the Uranium Processing Facility, according to CNS officials. CNS is building the Uranium Processing Facility at Y-12, which will be a multi-building complex for enriched uranium operations related to nuclear security.

subject of three protests to GAO under our bid protest authority.[22] NNSA ultimately reaffirmed its award of the contract to CNS, and CNS began contract performance in July 2014. The consolidated contract includes a total of 10 years, including the base period and all option terms.[23] The contract requires CNS to meet certain performance requirements, and NNSA is to evaluate CNS's accomplishment of these performance requirements before exercising each option term.

During the first 2 full fiscal years of the contract, CNS focused on merger and consolidation activities—that is, merging the two sites under one contractor—and on achieving savings from those activities, according to CNS's Merger Transformation Plan.[24] Merger savings are associated with efficiencies and reductions in the workforce resulting from the consolidation of the contract. During the third and fourth fiscal years of the contract, CNS focused on transformation savings—or savings based on changing underlying processes to increase standardization, and improve quality and efficiency within and across the organization. From the third full fiscal year of the contract onward, CNS focused on continuous

[22]GAO adjudicates bid protests to resolve disputes concerning the award of federal contracts; this adjudication is an independent GAO function from our audit process. NNSA's award of this M&O contract to CNS was the subject of three GAO bid protests. In January 2013, two unsuccessful offerors filed protests challenging the award, and NNSA issued a stay of performance of the contract until resolution of the protest process. In April 2013, GAO issued a decision partially sustaining the protests. In June 2013, one of the protesters filed another protest challenging the agency's then-ongoing corrective action; in September 2013, GAO issued a decision dismissing and denying that protest. In November 2013, after NNSA reaffirmed its award of the contract to CNS, the same offeror filed another protest challenging the NNSA's decision to re-award the contract to CNS following completion of the corrective action; in February 2014, GAO denied this protest and NNSA lifted the stay of performance, permitting CNS to proceed with performance of the contract. See GAO decisions: Nuclear Production Partners LLC; Integrated Nuclear Production Solutions LLC, B-407948 et al., Apr. 29, 2013, 2013 CPD ¶ 112; Nuclear Production Partners LLC, B-407948.9, Sept. 24, 2013, 2013 CPD ¶ 228; and Nuclear Production Partners LLC, B-407948.10, B-407948.11, Feb. 27, 2014, 2014 CPD ¶ 86.

[23]The consolidated contract uses the phrase "option terms." Other agencies use "award term" to describe an incentive that enables a contractor to earn additional periods of performance under a current contract by achieving prescribed performance criteria under that contract.

[24]The contract requires CNS to submit a Merger Transformation Plan, which is the overall plan CNS used to identify a series of actions that are projected to save the government $2.9 billion over the 10-year contract period, including the base and option terms. The Merger Transformation Plan outlines basic assumptions, the contractor's overall approach to reducing costs, and a timeline for achieving cost savings.

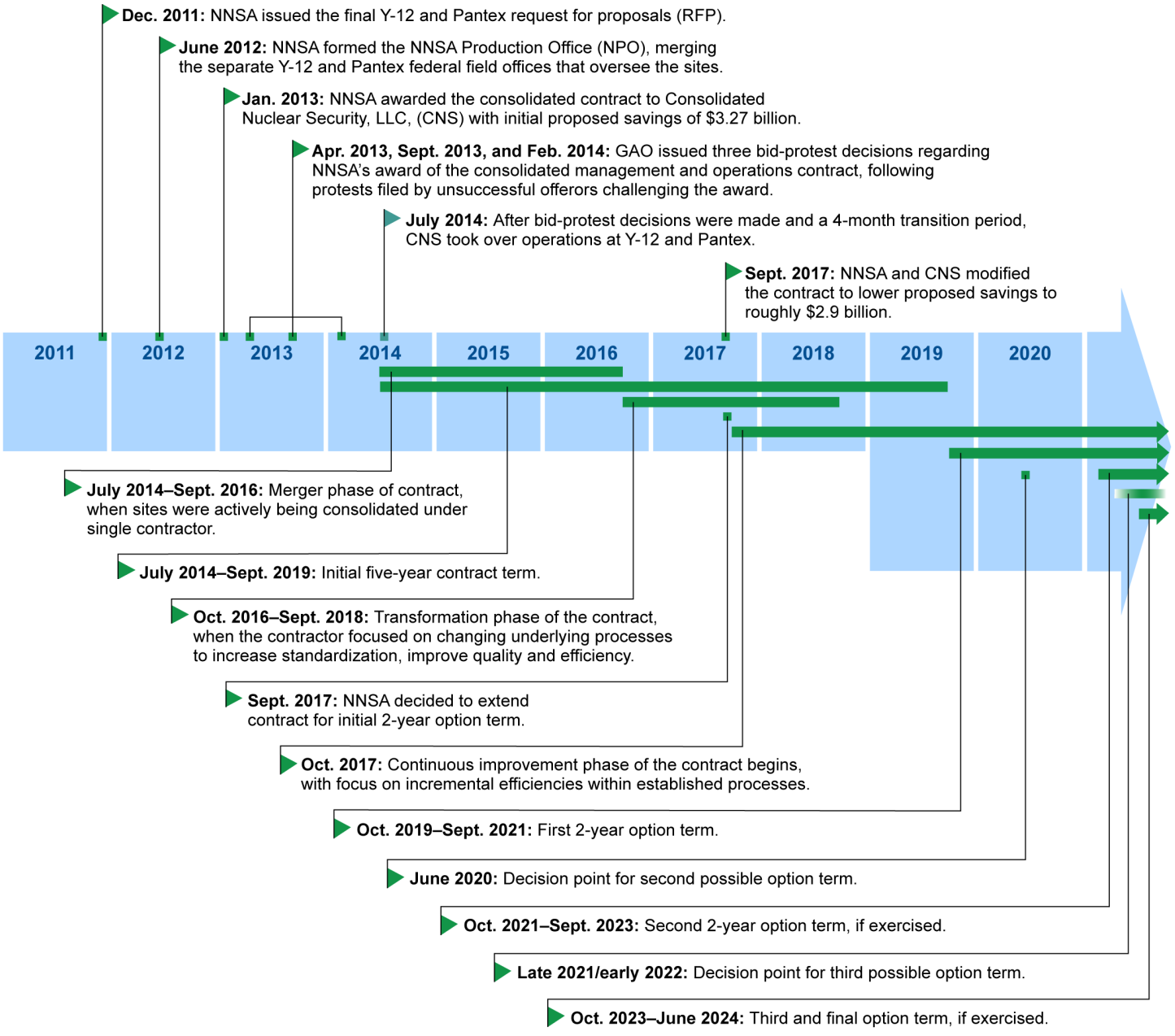
improvement, which constitutes incremental efficiency within established processes.

The original contract required CNS to achieve at least 80 percent of its proposed savings and score 80 percent or higher on its performance evaluations in order to have additional option terms exercised. In September 2017, however, NNSA and CNS modified the contract so that delivery of cost savings is only taken into consideration in conjunction with CNS's performance, as documented in NNSA's annual Performance Evaluation Reports, when deciding whether to extend CNS additional option terms, also known as gateway decision points.[25] NNSA officials told us they made this modification prior to the first gateway decision in September 2017 because CNS was very close to achieving 80 percent of its proposed cost savings, but it was unclear if CNS would achieve 80 percent.[26] In addition, the initial contract requirements placed equal emphasis on cost savings and the contractor's performance in meeting the mission, but NNSA officials said they do not view those two goals as equal. Cost savings in and of themselves are only helpful—and only creditable under the contract—if they do not negatively affect the mission, and therefore NNSA officials do not view achieving cost savings as equal to the contractor's performance in meeting the mission. Following the contract modification in September 2017, NNSA exercised the first 2-year option term, ensuring the contractor will manage and operate Y-12 and Pantex through fiscal year 2021. The gateway decision for the second 2-year option term will occur by the end of June 2020, according to NNSA officials (see fig. 2).

[25]Performance Evaluation Reports cover a wide range of contractor activities due to the significant size and scope of M&O contracts. These reports help form the basis of a contractor's performance record, which NNSA and other agencies consider in awarding future option terms and contracts. Further, when an M&O contract has reached the end of its contract term, FAR and DOE policy require DOE to consider the contractor's technical, administrative, and cost performance before deciding whether to extend the contract or open it up for competitive bids. NNSA evaluates CNS's performance on its ability to (1) manage the nuclear weapons mission; (2) reduce nuclear security threats; (3) achieve its DOE and strategic partnership projects mission; on (4) science, technology, and engineering; (5) operations and infrastructure; and (6) leadership. For gateway decisions two and three in June 2020 and late 2021 or early 2022, respectively, if CNS does not achieve an overall score of "very good" or above for each of the performance years evaluated ahead of a gateway decision, NNSA may decide not to extend the option term.

[26]Ultimately, CNS achieved 87.1 percent of its proposed savings, which exceeded the original 80 percent criteria for the applicable period at the time the gateway decision was made.

Figure 2: Timeline of Key Events in NNSA's Consolidated Contract for the Y-12 National Security Complex (Y-12) and Pantex Plant (Pantex), since 2011



Sources: GAO; National Nuclear Security Administration (NNSA). | GAO-20-451

Cost Savings Program's Structure

Implementation and oversight of the Cost Savings Program involves contractor representatives and NNSA officials at several levels. CNS manages the Cost Savings Program using a matrixed organization that includes several executives such as vice presidents of the Business Management and Transformation and Program Integration departments, according to CNS officials. Throughout each fiscal year, these officials lead various efforts associated with developing and implementing cost reduction initiatives as well as other key aspects of the Cost Savings Program. One CNS Cost Savings Director is responsible for overseeing much of the company's cost savings efforts, including coordinating between different program offices.

Within NNSA, NPO conducts much of the oversight of the Cost Savings Program while NNSA's Offices of Management and Budget, and Acquisition and Project Management also have some oversight functions. Within NPO, the Cost Savings Program Manager coordinates among different NPO program offices that help review and conduct oversight of the cost reduction initiatives throughout the year as well as with NNSA headquarters offices. NNSA's Office of Management and Budget provides NNSA with administrative, human resources, and financial support. NNSA's Office of Acquisition and Project Management is responsible for acquisition support and contracting oversight for the agency throughout the acquisition lifecycle.

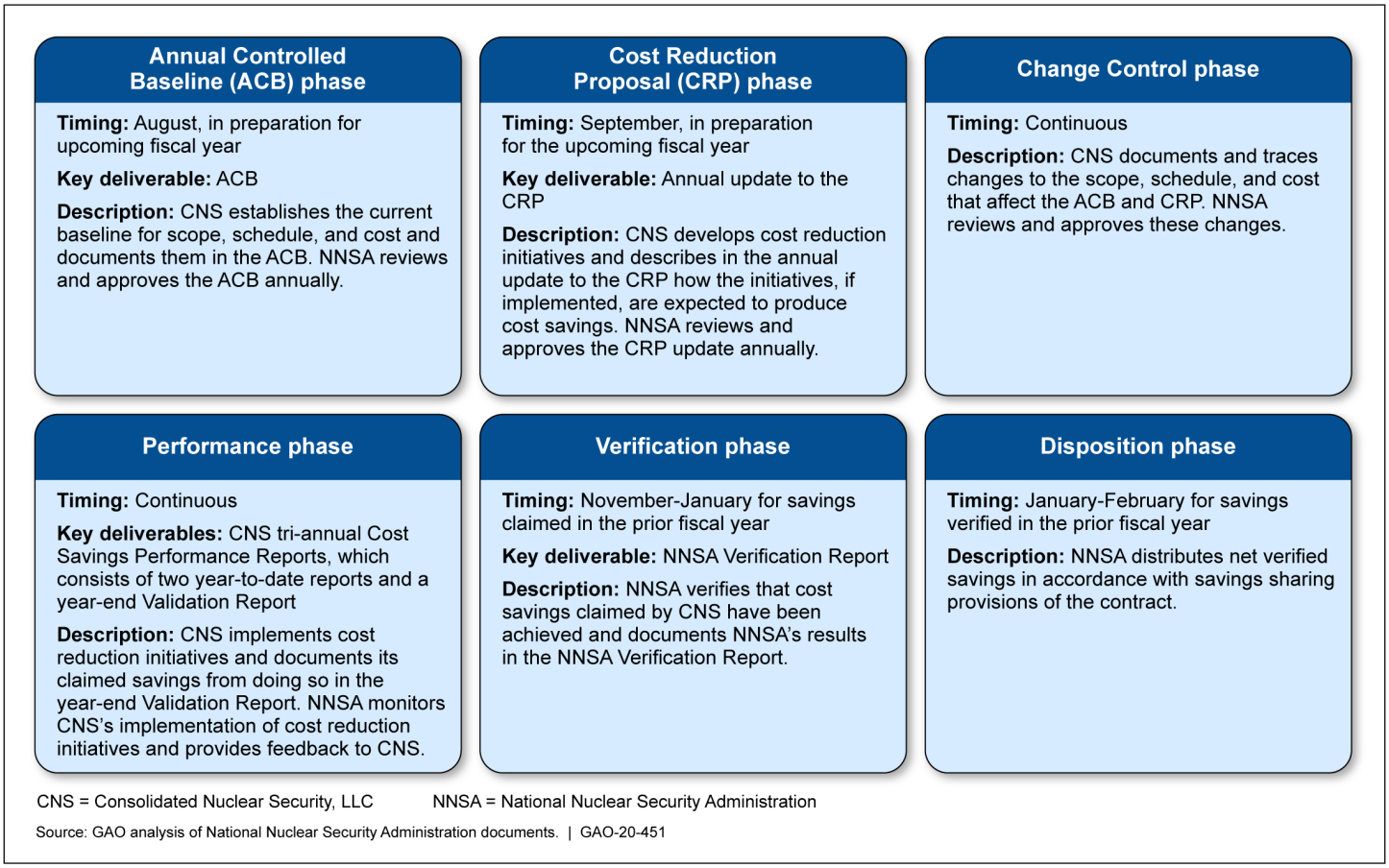
NNSA established an Executive Steering Committee, comprised of high-ranking officials from different NNSA program areas, as well as the NNSA Associate Principal Deputy Administrator, the NPO Manager, and the NPO Cost Savings Program Manager (as a non-voting member), to provide leadership and guidance for the governance of the cost savings element of the CNS contract.[27] The steering committee members are to set cost savings policy; resolve disputes; and recommend and approve the cost savings amounts to be shared between the government, the contractor (through a cost-savings incentive fee), and site reinvestment projects.

The Cost Savings Program is divided into six processes or phases that CNS and NNSA implement and oversee (see fig. 3):

[27]The steering committee membership includes the heads of NNSA's Offices of Acquisition and Project Management, and Management and Budget and five program offices: Defense Nuclear Nonproliferation; Defense Nuclear Security; Defense Programs; Information Management; and Safety, Infrastructure, and Operations.

- the Annual Controlled Baseline phase,
- the Cost Reduction Proposal phase,
- the Change Control phase,
- the Performance phase,
- the Verification phase, and
- the Disposition phase.

Figure 3: Consolidated Nuclear Security's, LLC, and National Nuclear Security Administration's Phases for Implementing and Overseeing the Cost Savings Program



Annual Controlled Baseline phase. CNS develops and maintains the Annual Controlled Baseline, which is a document that describes the

current scope of work and its cost and schedule.[28] Among other things, NNSA uses the Annual Controlled Baseline to evaluate whether CNS achieved savings from implementation of prior years' cost reduction initiatives. CNS is expected to submit the Annual Controlled Baseline no later than August 15 prior to the upcoming fiscal year, and NNSA reviews and approves the document.

Cost Reduction Proposal phase. CNS develops cost reduction initiatives and updates the Cost Reduction Proposal, which describes CNS's proposed cost reduction initiatives for the upcoming fiscal year and the expected cost savings to be validated from activities within the current fiscal year. The Cost Reduction Proposal is to be updated annually, no later than September 1 prior to the upcoming fiscal year. Each cost reduction initiative has a defined lifecycle, from identification and development to validation and sustainment. NNSA reviews and approves the document; approval authorizes CNS to begin implementing the initiatives.

Change control phase. The change control phase is continuous throughout the fiscal year and allows CNS and NNSA to document and trace changes to the scope, schedule, and cost that affect the Annual Controlled Baseline and the Cost Reduction Proposal. Changes made during this phase to the Annual Controlled Baseline and the Cost Reduction Proposal are generally limited to changes outside of the control of the contractor, including congressional direction or reprogramming, changes to the programmatic mission, additional contractual requirements, and any NNSA-directed or approved changes.

Performance phase. During the performance phase, which is also continuous throughout the year, the contractor is to report interim performance against the approved cost reduction initiatives for NNSA to evaluate accordingly, according to NNSA Cost Savings Program procedures. This interim reporting allows NNSA to monitor potential effects on the mission and offer feedback and course correction as needed. NNSA and CNS officials responsible for the Cost Savings Program collaborate regularly via biweekly meetings and tri-annual reviews to monitor CNS's progress on cost reduction initiatives throughout the fiscal year. CNS generates a year-end Validation Report, which is the final of three tri-annual reports provided throughout the fiscal

[28]NNSA and CNS discussed the number to use as the starting staff level for the development of baselines and calculation of cost savings for nearly a year.

year. These reports detail the performance of the M&O contractor and progress made against proposed cost savings targets, and list the amount of savings CNS is claiming to have achieved in that fiscal year, to include both annual new savings and savings sustained from prior years. CNS is to submit the Validation Report for each previous fiscal year no later than November 15.

Verification phase. After the end of the fiscal year, between November and January, NNSA uses verification checklists to review and verify CNS's claimed savings for each cost reduction initiative. NNSA can use these verification checklists to record, among other evidence, any observations, interviews, document reviews, analyses, and measurements that NNSA has undertaken to confirm the savings claimed by CNS in the Validation Report. For each cost reduction initiative, NNSA is to verify, among other things, that CNS implemented the initiative, that the initiative resulted in efficiencies that produced cost savings, and that the initiative did not negatively affect the mission. NNSA is also to verify that CNS set aside the claimed savings.[29] Additionally, NNSA is to verify that CNS sustained savings claimed in prior years. NNSA documents its determination of verified annual new and sustained savings in a Verification Report.[30]

Disposition phase. Upon completion of the verification phase, in January and February, the distribution, or disposition, of net savings occurs in accordance with the contract. Net savings are verified savings after

[29]Net savings are to revert to DOE control and may be available for deobligation. 48 C.F.R. § 970.5215-4. As part of the validation and verification process, CNS provides information on the funding sources from which savings were derived and NNSA's federal cost accountants verify the money has been set aside and is available for distribution under the cost-savings sharing arrangement.

[30]According to CNS's Merger Transformation Plan, CNS is to document in the annual update to the Cost Reduction Proposal all cost reduction initiatives for which it intends to claim savings. NNSA would then need to approve each cost reduction initiative before CNS implements it. As a result, all savings verified by NNSA should be tied to an approved cost reduction initiative. The savings have to be legitimate, measurable, and permanent, according to CNS officials. If, for example, CNS were able to complete more construction work earlier than planned due to good weather, CNS would not be able to claim these labor hours as cost savings if they were not associated with an approved cost reduction initiative, CNS officials said.

accounting for execution costs.[31] The contract allows those verified net savings to be shared among the government, the contractor, and site reinvestment projects to improve Y-12 and Pantex.

Under the contract provisions, NNSA is to verify and distribute only those savings that remain after deducting the execution costs required to administer, develop, or implement the cost reduction initiatives. For example, the cost of purchasing a machine to automate a process that will, in turn, save labor hours from the previous non-automated process would be an execution cost. Therefore, NNSA-verified savings for each cost reduction initiative should reflect net savings from having implemented the initiative—that is, the gross savings minus the execution costs associated with the initiative.

Verified net savings are to be distributed to the contractor, the government, and for site reinvestment projects.

- **Contractor**. The contractor is generally to receive a cost-savings incentive fee of about 35 percent of the verified net savings. For new savings related to employee benefits, however, the contractor is not to receive a share, and the savings are to be split between the government (50 percent) and site reinvestment projects (50

[31]Execution costs include administrative, development, and implementation costs. As described in CNS's fiscal year 2017 Validation Report, administrative costs refer to contractor costs and effort for developing certain deliverables and responding to questions pertaining to the content of those documents. Development costs refer to contractor costs of up-front planning, engineering, prototyping, and testing of a design, process, or method. Implementation costs refer to contractor costs such as tooling, facilities, documentation, and products required to affect a design, process, or method change once it has been tested and approved, as well as relocation, training, severance, and any other costs required to affect the merger or continuous improvement activities. Other costs related to DOE or NNSA implementation costs necessary for CNS to claim a savings would also be included in execution costs, according to the contract. However, no DOE or NNSA costs have been identified by CNS or NNSA to date, according to NNSA officials.

percent).[32] The contractor's cost-savings incentive fee is to be paid out of cost savings that NNSA has verified. The contract requires CNS to reimburse the government for the cost-savings incentive fee in the event that CNS does not sustain the savings for the remainder of the contract performance period. According to CNS's proposed savings estimates, CNS planned to earn approximately $222 million in cost-savings incentive fees over the potential 10-year contract. Per the contract, the contractor may also receive award fees annually based on NNSA's evaluation of its performance.[33] The available award fee for each potential year of the contract ranges from approximately $20 million to approximately $40 million.

- **Government**. The government generally is to receive 35 percent of the verified net savings. For new savings related to employee benefits, however, the government is to receive 50 percent of the verified net savings. The portion of verified savings that is available for the government allows NNSA to return those savings to the programs for which funds were originally obligated, and the funds can be spent within the same program at Y-12, Pantex, or another site within the nuclear security enterprise.
- **Site reinvestment**. The remaining approximately 30 percent of the verified net savings is for site reinvestment projects. As noted above, however, the site reinvestment share for savings related to employee benefits is 50 percent. Site reinvestment projects may include: projects (such as a parking structure, an office building or a cafeteria) that serve the M&O site as a whole rather than a discrete program or implementation costs for future cost savings initiatives, among other things.

[32]According to an NNSA official, CNS proposed a fee sharing agreement in which the contractor did not receive a share of the savings for reshaping employee benefits packages to more closely align to the marketplace; NNSA adopted this approach, so CNS does not receive a share of benefits savings. For supply chain transactional savings (savings realized through purchase orders placed through the Kansas City Supply Chain Management Center, vendor catalogs, and procurement cards) and sustained benefits savings (previously implemented benefits changes that have been sustained from previous years), no savings are distributed to any party. For supply chain one-time procurement savings (savings achieved through internal sourcing initiatives and external procurement tools that do not recur year-over-year), the government receives 35 percent of the savings, site reinvestment projects receive 40 percent, and the contractor receives 25 percent. According to NNSA officials, these savings shares are negotiated and documented in the approved Cost Reduction Proposal updates in accordance with the contract.

[33]CNS was paid a fixed fee of approximately $30 million in the first year of the base term of the contract, but the contract stipulates that no other fixed fees will be paid in any remaining years of the contract.

Types of potential savings associated with the Cost Savings Program include, for example:

- **Annual new savings**. In each fiscal year, CNS validates and NNSA verifies annual new savings for the cost reduction initiatives implemented in that year. Examples of annual new savings include positions that were reduced in a certain program area, in a given fiscal year. As discussed previously, cost savings are only creditable under the contract if they do not negatively affect the mission.
- **Sustained savings**. In each fiscal year, CNS validates and NNSA verifies sustained savings resulting from cost reduction initiatives implemented in prior years. For example, CNS can claim sustained savings for each year it does not hire back employees into positions that were reduced in a prior year and for which CNS claimed savings.
- **Cumulative contract savings**. Cumulative contract savings is the sum of all contract savings that have accumulated from annual new savings and the sustainment of savings produced in prior years. For example, annual new savings verified in fiscal year 2015 would be multiplied by 10 if they are sustained through the life of the potential 10-year contract. Likewise, annual new savings verified in fiscal year 2016 would be multiplied by 9 if they are sustained through the life of the potential 10-year contract, and so forth. These cumulative contract savings are also known as "gateway savings" because NNSA considers the verified cumulative contract savings when making gateway decisions on whether or not to extend the contract for possible option terms. Table 1 shows how CNS proposed it could achieve approximately $2.9 billion over the life of the 10-year contract using this method of calculating cumulative contract savings.

Table 1: Consolidated Nuclear Security's, LLC, Proposed Annual New Savings and Cumulative Contract Savings over the Life of the Potential 10-Year Contract (Dollars in Millions)

Proposed savings	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Annual new savings total	0[a]	66.7	53.3	64.3	84.5	41.4	27.8	28.3	26.8	27.3	25.6
FY 2015 sustained savings	—	—	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
FY 2016 sustained savings	—	—	—	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
FY 2017 sustained savings	—	—	—	—	64.3	64.3	64.3	64.3	64.3	64.3	64.3

Proposed savings	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
FY 2018 sustained savings	—	—	—	—	—	84.5	84.5	84.5	84.5	84.5	84.5
FY 2019 sustained savings	—	—	—	—	—	—	41.4	41.4	41.4	41.4	41.4
FY 2020 sustained savings	—	—	—	—	—	—	—	27.8	27.8	27.8	27.8
FY 2021 sustained savings	—	—	—	—	—	—	—	—	28.3	28.3	28.3
FY 2022 sustained savings	—	—	—	—	—	—	—	—	—	26.8	26.8
FY 2023 sustained savings	—	—	—	—	—	—	—	—	—	—	27.3
Savings verified in the fiscal year[b]	0	66.7	120.0	184.3	268.8	310.2	338.0	366.3	393.1	420.4	446.0
Cumulative contract savings[c]	0	66.7	186.7	371.0	639.8	950.0	1,288.0	1,654.3	2,047.5	2,467.9	2,913.9

Legend: FY: fiscal year

— : no applicable savings

Source: GAO analysis of Consolidated Nuclear Security, LLC information. | GAO-20-451

Notes: The figures in this table represent savings Consolidated Nuclear Security, LLC, (CNS) proposed that it could achieve over the life of the contract; the figures do not represent CNS-claimed or National Nuclear Security Administration (NNSA)-verified savings. Annual new savings represent savings achieved in a given fiscal year from cost reduction initiatives implemented in that year. Those savings will continue to accumulate in each subsequent year that NNSA verifies they are sustained. Cumulative contract savings is the sum of all contract savings that have accumulated from annual new savings and the sustainment of savings produced in prior years. Figures in this table show how CNS proposed it could achieve approximately $2.9 billion in savings over the life of the 10-year contract. To achieve the total $2.9 billion in proposed cost savings, CNS would need to sustain all annual new savings in all subsequent years of its contract (i.e., it could not fail to sustain any cost savings previously achieved).

Totals may not sum due to rounding.

[a]CNS did not plan to achieve any savings in fiscal year 2014.

[b]Savings verified in any given fiscal year include both the annual new savings generated from that year's cost reduction initiatives, as well as any savings that NNSA verified as being sustained from prior years.

[c]Savings verified in a fiscal year are added to the prior year's cumulative contract savings to determine the current year's cumulative contract savings.

Hard Savings Categories

1. **Labor**: Labor savings are generated through reduced workforce, reduced labor hours resulting from operational efficiencies, and reduced labor rates. For example, in fiscal year 2014, CNS eliminated 270 positions at the Y-12 National Security Complex and the Pantex Plant. CNS noted in its fiscal year 2014 Validation Report that it was able to realize efficiencies in merging the two sites that allowed it to complete the same scope with fewer people.
2. **Benefits**: Benefits savings are generated through changes to employee benefits such as healthcare, disability, and pension benefits. For example, in fiscal year 2015, CNS increased employees' cost share for healthcare and pension benefits, resulting in contract savings. CNS officials said the savings were realized through plan consolidation and standardization, among other things.
3. **Supply chain**: Supply chain savings are generated by leveraging collective buying power agreements, utilizing competitive sourcing tools, and taking other actions to reduce the price of goods purchased. For example, in fiscal year 2016, CNS noted in its Validation Report that it used strategic sourcing to realize procurement savings.
4. **Non-labor**: Non-labor savings—also known as demand management savings—are savings generated through reductions in purchased materials quantities, subcontract costs, or licenses. For example, in fiscal year 2016, CNS assumed responsibility for some information technology work—including, among others, help desk support and network administration—that had been previously handled by subcontractors. Doing so reduced contract costs because CNS was able to perform the work at a lower cost than the subcontractor.

Source: National Nuclear Security Administration and Consolidated Nuclear Security, LLC (CNS) information. | GAO-20-451

Hard savings—savings that directly reduce the overall cost of operations—are the only creditable type of savings under the contract. NNSA is only to verify savings if they do not negatively affect the mission. Examples of hard savings include a reduced number of personnel working to conduct the same scope of work or fewer labor hours required to complete a process due to operational efficiencies achieved, as well as savings in benefits packages (e.g., by requiring employees contribute more to their benefits).[34] NNSA and CNS classify hard savings into four categories: (1) labor, (2) benefits, (3) supply chain, and (4) non-labor (see sidebar).

Soft savings, which are not creditable savings under the contract, include

- savings that cannot be demonstrated to reduce the bottom line operating costs including, for example, labor efficiency improvements that increase productivity but do not reduce total hours worked;
- savings that are intangible and consequently difficult to measure such as, for example, a wellness plan that is intended to reduce absenteeism, turnover, or insurance costs; or
- cost avoidances that cannot be demonstrated to lower the cost of products or services such as, for example, slowing the rate of a cost increase. NNSA officials said another example of a cost avoidance would be if the contractor has the option to buy more expensive airplane tickets for travel between the two sites but chooses to buy less expensive airplane tickets; the difference between the most expensive option and the actual tickets purchased is a cost avoidance and not considered hard savings that would be creditable under the contract.

[34]CNS officials said requiring employees to contribute more to their benefits was commensurate with industry benchmarks and that the contractor redesigned healthcare plans, a step that reduced administrative costs and overall healthcare costs benefiting both the government and employees.

CNS Has Achieved Most of Its Proposed Savings, and Changes to Oversight and Methodologies Have Addressed Some Problems That May Affect Actual Savings

NNSA verified approximately $170 million in annual new savings and approximately $515 million in cumulative contract savings from fiscal year 2014 through fiscal year 2018. The $515 million in cumulative contract savings that NNSA verified from fiscal year 2014 through fiscal year 2018 is about 80 percent of the approximately $640 million CNS proposed it would save through that fiscal year. NNSA's oversight of the Cost Savings Program has improved and methods for calculating and verifying cost savings have evolved to address some problems encountered in the early years of the contract that may affect actual contract savings.

NNSA Has Verified Hundreds of Millions of Dollars of CNS's Claimed Savings

NNSA verified between approximately $8 million and $63 million in annual new savings each year from fiscal year 2014 through fiscal year 2018, totaling approximately $170 million in annual new savings over this period. Of the $170 million in NNSA-verified annual new savings for fiscal years 2014 through 2018, roughly 10 percent (approximately $17 million) is attributed to the merging of the Y-12 and Pantex sites into a consolidated management structure, according to CNS and NNSA documentation. The remaining roughly 90 percent (approximately $153 million) is attributed to transforming site operations to create a more efficient and sustainable enterprise.

Under the contract, savings from the previous year that have been sustained, and for which sustainment has been verified by NNSA, are added to the current year's verified annual new savings amount, resulting in cumulative contract savings. As of the end of fiscal year 2018, NNSA verified approximately $515 million in cumulative contract savings (see table 2).[35]

[35]NNSA was in the process of reviewing the fiscal year 2019 savings at the time we were completing our review. Therefore, we excluded fiscal year 2019 data from our review.

Table 2: Annual New, Sustained, and Cumulative Contract Savings the National Nuclear Security Administration (NNSA) Verified for the Y-12 and Pantex Consolidated Contract, Fiscal Years 2014 through 2018

Fiscal Year	Amount of Annual New Savings NNSA Verified (dollars)	Amount of Sustained Savings NNSA Verified (dollars)	Amount of Cumulative Contract Savings NNSA Verified (dollars)
2014 (Fourth Quarter)[a]	7,793,218	0	7,793,218
2015	24,098,974	46,585,130	78,477,322
2016	23,821,955	73,069,804	175,369,081
2017	51,541,133	96,090,897	323,001,111
2018	62,605,767	129,223,939	514,830,817
Total	**169,861,047**	**344,969,770**	**514,830,817**

Source: National Nuclear Security Administration | GAO-20-451

Note: Under the contract, savings continue to accumulate each year that NNSA verifies they are sustained from the prior year and count toward cumulative contract savings. Generally, the amount of annual new savings plus the amount of sustained savings for a given fiscal year are added to the previous year's cumulative savings to determine that year's cumulative contract savings. According to NNSA officials, some savings—such as benefits savings and supply chain procurement savings—are recalculated each year to reflect the current year's value rather than applying the value from the prior year. Therefore, the value of the sustained savings for any given year may be different than the sum of annual new savings from prior years, and the cumulative contract savings for a given year cannot be calculated as strictly the sum of the cumulative contract savings for the prior year and the annual new savings for the year.

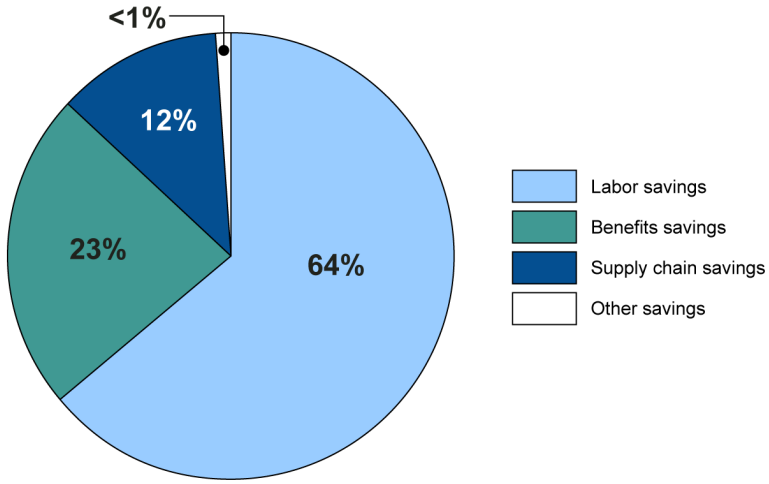
[a]The consolidated contract began on July 1, 2014, so only one quarter of that fiscal year—the fourth quarter—had corresponding verified savings.

We found that this $515 million in cumulative contract savings represents a reasonable estimate of the cumulative savings achieved. As part of our review, we traced information from 22 of about 90 cost reduction initiatives for which CNS claimed savings to source documents and reconciled discrepancies with NNSA and CNS officials to understand how NNSA verified the cost savings. Further, we reviewed NNSA's documented procedures for verifying CNS's reported data and interviewed officials about that process. Additionally, other reviews provide support that NNSA's reported $515 million in cumulative contract savings is a reasonable estimate of savings achieved. Specifically, as part of the savings verification process, NNSA's federal cost accountants ensured that CNS had set aside the money associated with the cost savings and confirmed that the funds were available for distribution under the cost-savings sharing arrangement. DCAA also reviewed CNS's claimed cost savings for fiscal years 2016 through 2018 and NNSA and

DCAA officials said the two entities used similar methods and came to similar conclusions.[36]

Labor savings, which include reductions in positions, comprised the largest portion of savings, at nearly two-thirds of the cumulative contract savings achieved from fiscal year 2014 through fiscal year 2018. Savings through changes to employee benefits comprised nearly a quarter of total cumulative contract savings over the period (see fig. 4).

Figure 4: Amount of Savings NNSA Verified by Savings Category, as a Percentage of Cumulative Contract Savings, Fiscal Year 2014 through Fiscal Year 2018



Source: GAO analysis of National Nuclear Security Administration (NNSA) data. | GAO-20-451

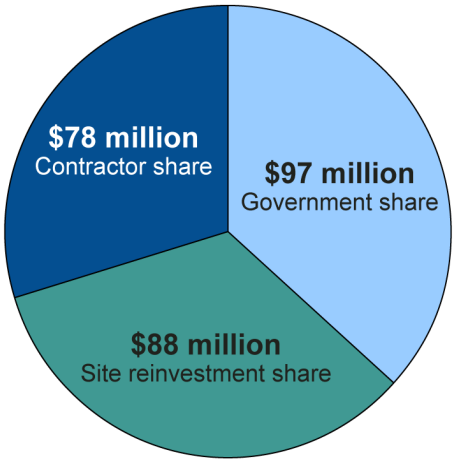
Note: Total percentage does not add up to 100 percent due to rounding.

NNSA documents we examined showed that CNS, the government, and site reinvestment projects received a certain share of the $515 million in cumulative contract savings that NNSA verified from fiscal year 2014 through fiscal year 2018 in accordance with the terms of the contract. According to NNSA, approximately $262 million of the $515 million was available for the three parties to share during this period. The amount available to the three parties is determined by sharing periods of no more than 2 years negotiated for different categories of savings under the contract. According to NNSA documents, CNS earned about $78 million

[36]DCAA and NNSA classified certain supply chain savings differently, resulting in different calculations of these savings between the two organizations. The $515 million in cumulative contract savings reflects NNSA's classification of these savings.

in cost-savings incentive fees, the government received about $97 million in savings, and site reinvestment projects received about $88 million of the available savings from fiscal year 2014 through fiscal year 2018 (see fig. 5).[37] According to NNSA, the remaining approximately $253 million in cumulative savings was not available for sharing between the three parties because it accumulated outside of the savings sharing period.[38]

Figure 5: Savings Shared among the Contractor, Government, and Site Reinvestment Projects from Fiscal Year 2014 through Fiscal Year 2018



Source: National Nuclear Security Administration (NNSA). | GAO-20-451

CNS Has Achieved about 80 Percent of Its Proposed Savings from Fiscal Year 2014 through Fiscal Year 2018

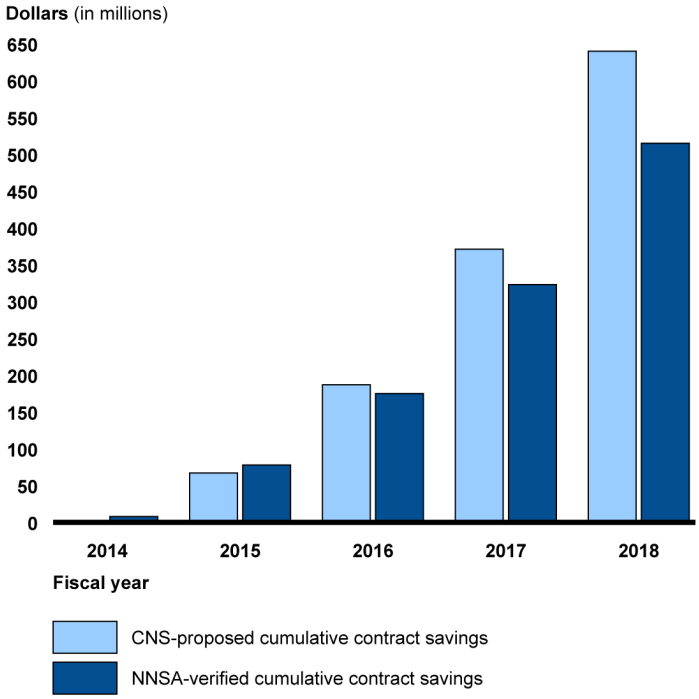
The $515 million in cumulative contract savings that NNSA verified from fiscal year 2014 through fiscal year 2018 is about 80 percent of the approximately $640 million in cumulative contract savings CNS proposed it would save through that fiscal year. CNS achieved more in cumulative contract savings than it proposed through fiscal year 2015. Specifically, CNS proposed approximately $67 million in cumulative contract savings through fiscal year 2015 and NNSA verified approximately $78 million.

[37]The distribution of savings shares noted here adds up to more than $262 million due to rounding.

[38]NNSA officials said the use of funds accumulated outside of the sharing period is not separately tracked, but represents reduced funding necessary to conduct the work. This reduced need is generally taken into account by NNSA's financial planning and management operations, though it is not recognized as due to the Cost Savings Program, the officials said.

From fiscal years 2016 through 2018, however, CNS achieved less in cumulative contract savings than it proposed (see fig. 6).

Figure 6: Comparison of Cumulative Contract Savings Proposed by Consolidated Nuclear Security, LLC (CNS) and Savings Verified by NNSA, Fiscal Years 2014 through 2018



Source: National Nuclear Security Administration (NNSA). | GAO-20-451

Note: The CNS-proposed savings figures in this table represent revisions to proposed savings amounts that NNSA approved in 2017.

As described above, achieving approximately $2.9 billion in savings over the life of the contract assumed meeting all proposed annual new savings targets and fully sustaining those savings in each year of the contract. According to the terms of the contract, NNSA considers achievement of cost savings when evaluating overall contract performance, and therefore, achievement of proposed cost savings may factor into NNSA's decision of whether to exercise further contract option terms.

Two key issues—benefits savings and fiscal year 2016 labor savings—contributed to CNS not meeting its proposed cost savings targets through the end of fiscal year 2018 and may affect CNS's ability to achieve its

proposed cumulative contract savings of approximately $2.9 billion over the life of the contract.

- **Benefits savings**. CNS proposed it could save $594 million over the life of the contract through adjustments to employee benefits, but as of March 2020, CNS officials told us that CNS's projected benefits savings would total $399 million over the entire 10-year contract, a decrease of almost $200 million from its proposal. According to these officials, several factors have contributed to CNS's decreased benefits savings estimate, including delays in bargaining unit transition to benefit plans and rates and a decrease in employee contributions to pensions, among other reasons.
- **Fiscal year 2016 labor savings**. In fiscal year 2016, CNS claimed approximately $30 million in new labor savings based on a claimed reduction of 283 full-time equivalent employees, but NNSA rejected all of those savings. According to the fiscal year 2016 NNSA Verification Report, CNS failed to realize efficiencies that resulted in full-time equivalent growth in other areas, which offset CNS's claim of new labor savings.[39] Rejection of these fiscal year 2016 labor savings could result in a loss of approximately $270 million in cumulative savings through the end of the potential 10-year contract period when factoring in potential sustained savings.

NNSA officials emphasized that any amount of cost savings is beneficial to the government and that NNSA's priority for CNS is safe and secure performance of its mission. NNSA officials noted that if CNS does not implement any additional cost reduction initiatives and sustains the savings from all previously-implemented cost reduction initiatives, CNS will still save about $1.7 billion through fiscal year 2024.[40]

CNS officials told us that CNS will continue to work toward its cumulative proposed savings of approximately $2.9 billion and hopes to meet or exceed that estimate. According to these officials, doing so will allow CNS

[39]According to the fiscal year 2016 NNSA Verification Report, NNSA noted growth of more than 286 full-time equivalents that could not be tied to an approved increase in work scope, and this offset a similar amount of CNS's claimed full-time equivalent efficiencies, or labor savings.

[40]The $1.7 billion in savings represents total expected cumulative contract savings. Savings sharing between CNS, the government, and site reinvestment projects is determined by sharing periods of no more than two years, as negotiated under the contract.

to realize its proposed savings and provide the maximum benefit to the government and taxpayers. To achieve its proposed savings, CNS would need to sustain all previously implemented savings, achieve verified annual new savings of approximately $57 million per year every year, and sustain those additional savings through 2024.[41] However, CNS's proposed annual new savings are substantially lower for fiscal year 2019 through the end of the contract (averaging about $30 million per year) than they were from fiscal year 2014 through fiscal year 2018. This decrease is, in part, because many cost reduction initiatives with high savings potential—such as labor streamlining and changes to employee benefits—have been implemented. For example, CNS eliminated 270 positions and provided voluntary separation severance packages to another 182 employees in fiscal year 2014. This accounted for more than 40 percent ($221 million) of the cumulative contract savings because CNS sustained those savings in fiscal years 2015 through 2018. CNS has already implemented many cost reduction initiatives with high savings potential, so it may be difficult for CNS to meet its proposed cumulative contract savings.

Methodologies for Calculating Cost Savings and NNSA's Oversight of the Program Have Evolved to Address Factors That May Affect Actual Contract Savings

CNS and NNSA initially encountered problems with calculating and verifying cost savings—problems that may affect actual contract savings—but methods for calculating and verifying savings have evolved, and NNSA's oversight of the Cost Savings Program has improved. Specifically, CNS and NNSA initially encountered problems—which have largely been addressed—with:

(1) calculating and verifying execution costs;

(2) calculating and verifying labor savings; and

(3) communicating and collaborating about the Cost Savings Program throughout the year.

Calculating and verifying execution costs. NNSA encountered early problems with verifying execution costs for CNS's cost savings initiatives, but CNS changed its methodology for calculating execution costs each year that ultimately addressed those problems. Since the contract's

[41]According to NNSA officials, some savings—such as benefits savings and supply chain procurement savings—are recalculated each year to reflect the current year's value rather than having the same value applied each year. Additionally, labor savings beyond the sharing period have an escalation factor applied. As a result, these officials said the $57 million value is a simplified estimate.

inception, CNS has relied on a subcontractor to operate much of the Cost Savings Program.[42] In fiscal year 2014, costs for this subcontractor totaled approximately $7 million. CNS believed that approximately $546,000 of the $7 million should be considered execution costs and counted against the cost savings for that year, but NNSA believed the entire $7 million should be considered execution costs.[43] NNSA and CNS reached agreement that a proportional factor—19.3 percent—of the subcontractor's time was spent on activities that would qualify as execution activities under the contract for fiscal years 2014 and 2015. NNSA instructed CNS to capture and report the subcontractor's actual execution costs beginning in fiscal year 2016. CNS began using the subcontract's actual execution costs in fiscal year 2016, according to NNSA officials. However, NNSA officials said CNS used a proportional factor of the subcontract's execution costs from previous years to estimate the execution costs of CNS employees for fiscal year 2016. NNSA noted in its fiscal year 2016 Verification Report that using the proportional factor approach for estimating execution costs may not reflect the actual execution costs. CNS officials said they believe this estimation was conservative because it resulted in higher CNS administrative and development costs than subsequent years.

Additionally, in fiscal years 2015 and 2016, CNS reported estimates for its total execution costs rather than tracking the actual execution costs for each individual cost reduction initiative, which NNSA officials said made it difficult to verify net savings.[44] In fiscal year 2017, CNS developed a methodology for allocating execution costs—administrative costs, implementation costs, and development costs—to individual cost

[42]According to NNSA and CNS officials, the subcontractor handles the day-to-day administration of the Cost Savings Program and produces associated reports and deliverables. These officials said that, as the Cost Savings Program has matured, CNS started performing some of the responsibilities originally performed by the subcontractor, and intends to fully transition away from using the subcontractor by June 2021.

[43]In its fiscal year 2014 Verification Report, NNSA stated that the subcontractor's costs did not exist prior to the merging of the Y-12 and Pantex sites and were not a normal and recurring cost of operating Y-12 and Pantex as independent sites. Because the subcontractor was hired to assist with merger activities and to design and implement a cost reduction program, NNSA considered the associated costs as execution costs.

[44]In fiscal year 2015, CNS reported the total estimated execution costs for CNS and the total estimated execution costs for the subcontractor but did not provide further information on how those costs related to individual cost reduction initiatives. In fiscal year 2016, CNS reported execution costs for CNS and for the subcontractor and further delineated those costs based on the savings category under which they fell—such as labor, supply chain, and benefits—but again did not provide detailed information on how those costs related to individual cost reduction initiatives.

reduction initiatives and began reporting execution costs at this level in the fiscal year 2017 Validation Report. According to NNSA officials, CNS also began reporting execution costs by individual cost reduction initiative for its subcontractor beginning in fiscal year 2017. In fiscal year 2018, CNS developed execution cost charge codes that allowed CNS to report actual hours spent on cost reduction initiative execution activities—including amounts for its subcontractor—for the first time since the contract began. NNSA officials told us that they are generally satisfied with the way CNS is now capturing execution costs and that the use of charge codes has improved their confidence in CNS's reporting of certain execution costs. However, CNS's use of the proportional factor of 19.3 percent of the subcontractor's execution costs, lack of detail on execution costs for individual cost reduction initiatives, and use of estimated—rather than actual—execution costs could mean that the actual execution costs for fiscal years 2014 through 2017 are not fully captured in reported cumulative savings and actual contract savings could be higher or lower than the reported amount. Even if the actual contract savings are higher or lower than the reported amount, we believe $515 million is a reasonable estimate of the savings achieved to date.

Calculating and verifying labor savings. In fiscal years 2014 and 2015, CNS used a headcount methodology to calculate labor savings and demonstrate sustainment of those savings. Using a headcount methodology, CNS could claim labor savings if it could demonstrate and maintain a reduced number of employees to conduct the same scope of work.[45] According to NNSA and CNS officials, one potential problem with using a headcount approach is that CNS could maintain a reduced number of staff but have those staff work overtime. If this occurred, it would result in overall increased contract costs, thereby reducing the net savings from the cost reduction initiative.[46] In fiscal year 2016, CNS modified its methodology for calculating labor savings to use labor hours rather than employee headcounts. Under this modified approach, CNS could claim labor savings if it could demonstrate and maintain reduced labor hours regardless of the number of employees, a method that NNSA and CNS officials said is a better measure of labor savings. However, under this methodology, CNS calculated labor savings based on planned,

[45]The number of employees could have increased if there were an approved, associated increase in scope of work.

[46]We did not independently confirm the labor hours that CNS used to establish a baseline or determine labor cost savings at Y-12 and Pantex.

rather than actual, reductions in labor hours. In fiscal year 2017, CNS modified its methodology again to begin using actual reduced labor hours rather than planned reduced labor hours.[47] However, CNS's use of headcounts and planned, rather than actual, reduction in labor hours could mean that the labor savings for fiscal years 2014 through 2016 are not accurately reflected in the verified cumulative contract savings, and actual contract savings could be higher or lower than the reported amount. As noted above, even if the actual contract savings are higher or lower than the reported amount, we believe $515 million is a reasonable estimate of the savings achieved to date.

Communicating and collaborating about the Cost Savings Program. According to NNSA officials, early years of the contract were marked by limited oversight and poor communication between NNSA and CNS. CNS delegated responsibility for the Cost Savings Program to a subcontractor, and according to NNSA and CNS officials, CNS had limited involvement in the Cost Savings Program and did not communicate with NNSA about cost savings matters. Similarly, NNSA officials told us that one or two individuals at NNSA managed the cost savings component of the contract for the federal government and that communication was poor between those individuals and the technical personnel responsible for evaluating the implementation of CNS's cost reduction initiatives. As a result of this limited oversight and communication, NNSA officials said CNS did not understand NNSA's expectations for cost savings data and had to submit five iterations of its first Validation Report.

In fiscal year 2017, NNSA established a collaborative working team—known as the Integrated Project Team and consisting of personnel from NNSA and CNS—which meets biweekly to discuss issues related to the Cost Savings Program. Also in fiscal year 2017, NNSA began conducting tri-annual reviews of active cost reduction initiatives. For these reviews, CNS submits performance reports and briefs knowledgeable NNSA officials on the status of individual cost reduction initiatives. NNSA uses this information to identify potential gaps in cost-savings reporting data and, among other things, informs CNS of any concerns with its methodology or NNSA's ability to verify the cost savings. NNSA officials

[47]According to the fiscal year 2017 CNS Validation Report, the new methodology consists of a two-step approach that must be satisfied before CNS can claim labor savings. Step one validates the achievement of an approved labor cost reduction initiative and that the initiative did not adversely affect mission performance, among other things. Step two confirms the implementation of the cost reduction initiative by measuring the resulting reduction in actual labor hours. Within this two-step approach, CNS must also ensure that, among other things, the overall hours did not shift to other areas.

stated that the increased collaboration and more frequent communication has resulted in improved Validation Reports and fewer revisions. For example, NNSA stated in its fiscal year 2017 Verification Report that the quality and completeness of CNS's fiscal year 2017 Validation Report "demonstrated substantial improvement" over the fiscal year 2016 report.

While CNS's and NNSA's methods for calculating and verifying savings and conducting oversight evolved in the early years of the contract to improve the accuracy of cost savings calculations, we believe the $515 million in reported cumulative savings represents a reasonable estimate of the contract savings achieved to date for reasons we described earlier.[48]

NNSA Identified Benefits of the Cost Savings Program but Has Not Fully Used Them to Improve M&O Contracts

NNSA Identified Three Key Benefits of the Y-12 and Pantex Cost Savings Program but Has Not Planned on How Best to Use Site Reinvestment Funds

NNSA officials said three key benefits of the Cost Savings Program are

(1) achieving savings;

(2) increasing financial transparency; and

(3) funding site reinvestment projects.

Achieving savings. As discussed previously, the Cost Savings Program resulted in total new annual savings of approximately $170 million and $515 million in cumulative contract savings, from fiscal year 2014 through fiscal year 2018. According to NNSA officials, these cost savings would not have materialized without the Cost Savings Program. We have previously found that DOE could better assess M&O contractors' cost performance—i.e., their performance on spending, budgeting, strategic sourcing, and cost-effectiveness—to help strengthen contractor oversight

[48]NNSA's federal cost accountants verified that CNS set aside the money and that the funds were available for distribution under the cost savings sharing arrangement.

and better inform acquisitions decisions.[49] Demonstrating contractors' efforts to achieve cost savings and NNSA's associated efforts to evaluate contractors' cost effectiveness provides evidence that for the CNS contract, NNSA is placing importance on cost performance while overall resource needs are increasing. For example, NNSA has identified an increasing weapons program workload and a need to recapitalize or replace aging facilities and equipment to meet nuclear weapons modernization programs over the next decades.[50] To help achieve these goals, NNSA's fiscal year 2021 budget request included a 25 percent increase for NNSA's weapons activities appropriation, which funds programs at NNSA sites including Pantex and Y-12.[51] Identifying cost savings could help NNSA minimize budget increases in an era of increasing workload and assure congressional decision-makers that NNSA is working to effectively steward federal resources.

Increasing financial transparency. Because of the Cost Savings Program, which required the establishment of the Annual Controlled Baseline in order to measure potential savings, NNSA has better and more thorough information on the costs of running the two sites, NPO officials said. The Annual Controlled Baseline provides more information because in order to demonstrate savings CNS had to first establish a cost baseline, which required complete information on funding streams as well as how certain rate structures are established, according to NPO officials. Officials from NNSA's Office of Acquisition and Project Management also said this was the first time that NNSA has been able to gain insight into the actual costs of certain activities at Y-12 and Pantex, as a result of the Annual Controlled Baseline being established. None of the other M&O sites have an established site-wide baseline against which to measure costs or cost savings, according to NNSA and M&O officials we interviewed.[52] Officials from the Office of Acquisition and Project Management said having an Annual Controlled Baseline at other sites

[49]GAO, *Department of Energy: Performance Evaluations Could Better Assess Management and Operating Contractor Costs*, GAO-19-5 (Washington, D.C.: Feb. 26, 2019).

[50]Department of Energy, *Fiscal Year 2019 Stockpile Stewardship and Management Plan—Biennial Plan Summary: Report to Congress,* DOE/NA-0072 (Washington, D.C.: October 2018).

[51]Department of Energy, *Fiscal Year 2021 Congressional Budget Request: National Nuclear Security Administration*, DOE/CF-0161 (Washington, D.C.: February 2020).

[52]NNSA officials said the other M&O contractors in the enterprise monitor cost performance using programmatic performance tools, which can include baselines. However, these are program-specific baselines and not site-wide baselines.

would give them additional insight into the cost of certain activities, as opposed to the traditional budget-based view they have into M&O activities. At other M&O sites, NNSA uses a budget-based model, which consists of the government obligating a certain amount of money and getting as much product or service for that amount of money as the sites will provide, NNSA officials said. Instead, NNSA is employing a cost-based model at Y-12 and Pantex, which involves determining the cost to produce a certain amount of product, NNSA officials explained.

Funding site reinvestment projects. As part of the Cost Savings Program, a certain percentage of the achieved savings is reinvested back into the sites. According to NNSA officials, this process has allowed NNSA to allocate funds to site reinvestment projects to improve the Y-12 and Pantex sites' aging infrastructure. As of fiscal year 2019, NNSA reported about a $4.8 billion deferred maintenance backlog throughout the nuclear security enterprise.[53] We previously found that facilities considered not mission dependent—such as cafeterias, parking structures and excess facilities—comprised about 40 percent of the deferred maintenance backlog.[54] NNSA officials said addressing deferred maintenance at these types of facilities is low priority, beyond keeping facilities in a safe condition, because the agency targets scarce budgetary resources to mission critical facilities. According to NNSA officials, NNSA would not likely have allocated funds for these site reinvestment projects at Y-12 and Pantex without the Cost Savings Program because they are often considered lower priority projects. As a result, the nuclear security enterprise as a whole potentially benefits from these site reinvestment projects at Y-12 and Pantex since those reinvestment projects serve to reduce overall deferred maintenance and potentially make funds available for projects to address aging infrastructure at other sites.

Site reinvestment projects may lead to additional cost savings as well, NNSA officials said, if, for example, NNSA uses site reinvestment funds to purchase a machine that automates a process and saves labor hours as a result. For example, NNSA invested in a machine to replace three different machines that were previously required to produce a screw. This

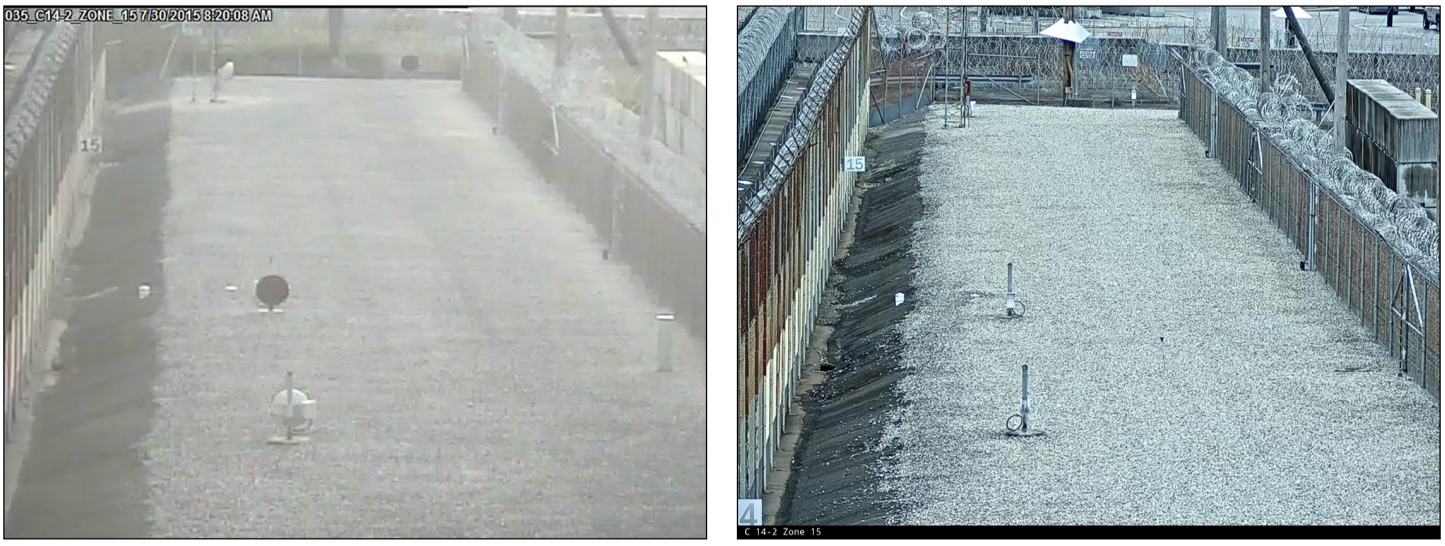
[53]DOE/CF-0161.

[54]GAO, *Modernizing the Nuclear Security Enterprise: NNSA Increased Its Budget Estimates, but Estimates for Key Stockpile and Infrastructure Programs Need Improvement*, GAO-15-499 (Washington, D.C.: Aug. 6, 2015). DOE defines mission dependency as the value of an asset's specific contribution to the performance of mission.

improved throughput and turnaround time and saved labor hours, according to NNSA documentation.

NNSA approved a total of 80 site reinvestment projects at Y-12 and Pantex as of April 2020, for a total of approximately $75 million that was available for reinvestment into the sites. For example, CNS used about $1.2 million in site reinvestment funds to replace analog cameras along Y-12's perimeter fencing with digital cameras (see fig. 7). This site reinvestment project improved physical security and reduced camera maintenance costs, as well as the security team's ability to assess alarms and manage alarm response, according to NPO documentation. Because the analog cameras were still functioning, they may have otherwise been a lower priority to replace without the site reinvestment funding, NPO officials said.

Figure 7: Comparison of Analog and Digital Security Camera Footage at Y-12 National Security Complex in Oak Ridge, Tennessee, a Site Reinvestment Project



The picture on the left was taken by the old analog security cameras, while the picture on the right was taken by the new digital security cameras.

Source: National Nuclear Security Administration. | GAO-20-451

In addition, the John C. Drummond Center, a new administrative support complex at Pantex, was partially built with savings from the Cost Savings Program (see fig. 8). According to NNSA documentation, the new facility helps eliminate approximately $20 million in deferred maintenance costs of the older administrative buildings it replaced.

Figure 8: John C. Drummond Center at the Pantex Plant near Amarillo, Texas, Was Partially Built with Site Reinvestment Funds in 2018

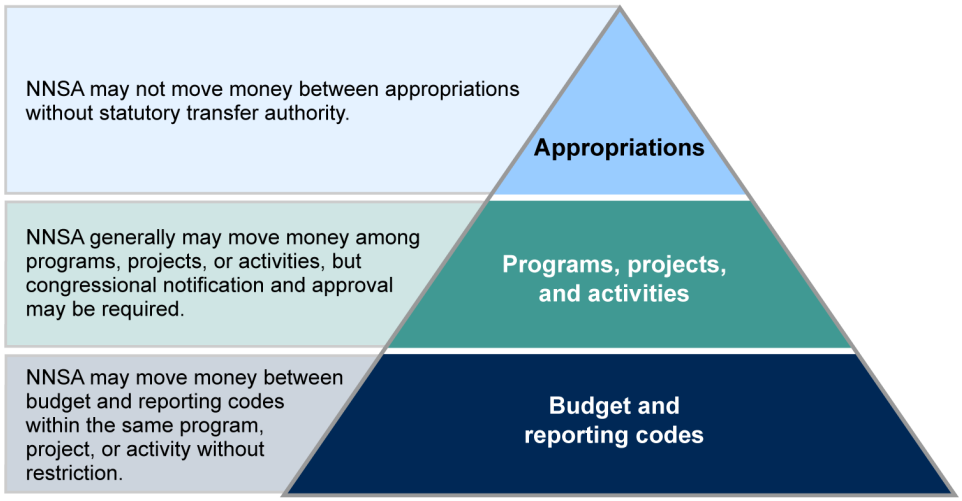
Source: National Nuclear Security Administration. | GAO-20-451

Although NNSA identified site reinvestment projects as one of the key benefits of the Cost Savings Program, NNSA and CNS had not committed approximately $13 million of site reinvestment funds available at Y-12 and Pantex as of April 2020. NNSA and CNS had not yet committed the site reinvestment funds to specific project efforts, in part because they have not evaluated how best to use the remaining available site reinvestment funds or developed a plan for doing so. The $13 million is currently distributed across several different layers of accounts, in some cases in amounts too small to execute a site reinvestment project. To aggregate the funds in amounts large enough for certain projects, NNSA may need to move funding from one account to another.

The funds for site reinvestment projects are distributed in accordance with the terms of the contract and are spread across different programs,

projects, or activities (PPA).[55] Beneath the PPA is the DOE budget and reporting code level, which DOE also tracks in its official accounting system (see fig. 9).

Figure 9: Overview of National Nuclear Security Administration's Budget Structure and Authority to Move Funds



Source: GAO presentation of National Nuclear Security Administration (NNSA) information. | GAO-20-451

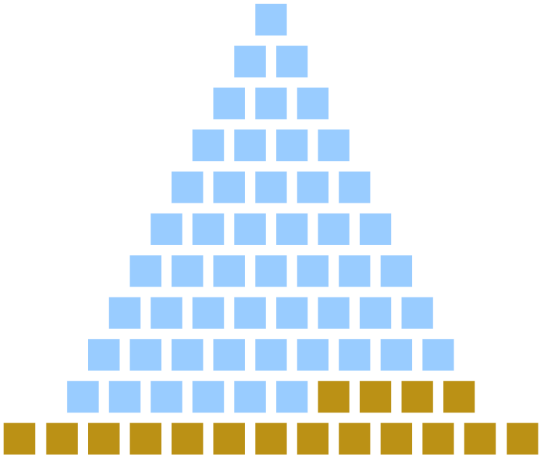
According to NNSA officials, there were 68 PPAs with 97 budget and reporting codes underneath them that, as of April 2020, had funds available for site reinvestment. According to NNSA officials and CNS representatives, this distribution makes it difficult to use all of the site reinvestment funds. This difficulty is because a given site reinvestment project may require funds to be aggregated across budget and reporting codes in order to have enough funds for executing the project, and while NNSA can move funds between budget and reporting codes that are

[55]A PPA is an element within a budget account. For annually appropriated accounts, the Office of Management and Budget and agencies identify a PPA by reference to committee reports and budget justifications; for permanent appropriations, the Office of Management and Budget and agencies identify a PPA by the program and financing schedules that the President provides in the "Detailed Budget Estimates" in the budget submission for the relevant fiscal year. Program activity structures are intended to provide a meaningful representation of the operations financed by a specific budget account—usually by project, activity, or organization. GAO, *A Glossary of Terms Used in the Federal Budget Process*, GAO-05-734SP (Washington, D.C.: September 2005).

within the same PPA, movement of funds among PPAs (reprogramming) could require congressional approval.[56]

As of April 2020, of the 68 PPAs with available funds for site reinvestment, 17 (or about 25 percent) had multiple budget and reporting codes underneath them, according to NNSA officials. Those 17 PPAs had between 2 to 6 budget and reporting codes underneath them, according to those officials (see fig. 10).

Figure 10: Number of Programs, Projects, and Activities and Budget and Reporting Codes with Funds Available for Y-12 National Security Complex's and Pantex Plant's Site Reinvestment Projects



Source: National Nuclear Security Administration. | GAO-20-451

We have previously found that comprehensive plans can help organizations identify potential problems before they occur and target

[56]Generally, agencies may shift funds from one program, project, or activity level within an appropriation account to another, but it often involves some form of notification to the congressional appropriations committees, or authorizing committees, or both. Sometimes committee oversight requires formal notification of one or more committees before a reprogramming action may be implemented. For example, DOE's most recent appropriation provides that amounts can be reprogrammed for any program, project, or activity, but that DOE shall notify, and obtain the prior approval of, the appropriations committees prior to any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than $5 million or 10 percent, whichever is less, during the time period covered by the act. Further Consolidated Appropriations Act, 2020, Pub. L No. 115-244 div. A, title III, § 301(e) (2019).

limited resources.[57] A comprehensive plan can also detail milestones and key goals, which provide meaningful guidance for planning and measuring progress. Such plans can establish deadlines for achieving objectives and assign responsibility for any implementation. Most of NNSA's appropriations are "no-year funds" and are, therefore, available for obligation until expended.[58] Without evaluating and developing a plan for how best to use funds for site reinvestment projects—to include determining whether to reprogram funds—NNSA and CNS are not fully utilizing available site reinvestment funds, and the funds could be rescinded from NNSA's appropriations in later years if the unspent balances persist.

NNSA has not sought congressional approval to combine site reinvestment money across different PPAs in order to aggregate these funds to execute larger site reinvestment projects, officials said.[59] Also, while NNSA moves funds weekly between budget and reporting codes that are within the same PPA to execute its work, officials said NNSA has not moved any site reinvestment funds from different budget and reporting codes within the same PPA to fund site reinvestment projects. Once NNSA develops a plan on how best to aggregate or use the remaining and potential future site reinvestment funds, it would be better positioned to:

- move some funds between budget and reporting codes within the same PPA, or
- reprogram funds between PPAs, including seeking congressional approval where it may be required.

[57]GAO, *Digital Television Transition: Increased Federal Planning and Risk Management Could Further Facilitate the DTV Transition*, GAO-08-43 (Washington, D.C.: Nov. 19, 2007).

[58]The only time-limited funds are for Federal Salaries and Expenses. For example, see Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019, Pub. L. No. 115-244, div. C, title III, 132 Stat. 2987, 2911-2912 (2018).

[59]NNSA officials told us that they reprogrammed funds across PPAs to partially pay for the John C. Drummond Center administrative building at Pantex. According to the officials, this action did not require congressional approval because the amount did not exceed the threshold to do so, which is $5 million or 10 percent of the PPA, whichever is less.

NNSA Is Not Fully Using Information on the Benefits of the Cost Savings Program to Improve M&O Contracts

NNSA Has Not Analyzed Whether to Implement the Cost Savings Program in Other Existing or Future M&O Contracts

NNSA officials identified the achievement of cost savings as a benefit of the Cost Savings Program that could be useful at other sites and to the nuclear security enterprise generally; however, the officials said they are not planning to implement the Cost Savings Program as part of other future or existing M&O contracts. Most existing NNSA M&O contracts include a "Cost Reduction" clause, under which sites could implement a Cost Savings Program with some attributes of the program at Y-12 and Pantex. According to GAO's *Framework for Assessing the Acquisition Function at Federal Agencies*, leading organizations gather and analyze data to identify opportunities to reduce costs, among other reasons.[60] Further, the framework states that incomplete data can prevent an agency from maximizing information tools for strategic acquisition planning and analysis.

According to officials from the Office of Acquisition and Project Management, they do not plan to implement the Cost Savings Program or anything similar to it as part of future M&O contracts because of uncertainties regarding (1) the opportunities for similar savings at other sites and (2) the federal costs involved in implementing and overseeing the Cost Savings Program—including the time and effort needed to verify cost savings—and how these costs affect the overall net savings.

NNSA site officials and contractor representatives we interviewed also raised questions about these issues. For example, according to NNSA officials and representatives at two sites, the Cost Savings Program may not be exportable to other sites, in part because other sites may not be able to identify cost savings initiatives that would yield the same level of savings as at Y-12 and Pantex. The officials believed that much of the savings identified at those sites resulted from merger savings—savings stemming from consolidating the two sites—that would not be possible without combining two sites under one contract. However, as mentioned

[60]GAO, *Framework for Assessing the Acquisition Function at Federal Agencies*, GAO-05-218G (Washington, D.C.: September 2005).

previously, our analysis found that the majority—about 90 percent—of annual savings at Y-12 and Pantex resulted from transformation initiatives, or savings based on improving standardization, quality, and efficiency. Merger savings contributed only about 10 percent of the total new annual savings identified from fiscal year 2014 through fiscal year 2018.

NNSA officials and contractor representatives at other NNSA sites also raised questions about whether the cost of implementing and maintaining a formal cost savings program might outweigh the benefits at a site. According to NNSA officials, a large number of government employees are involved in implementing and overseeing the Cost Savings Program. According to an official from the Office of Acquisition and Project Management, NNSA has not analyzed the total costs of implementing the Cost Savings Program, including the costs associated with the government effort to oversee the program. For the Cost Savings Program, NNSA verifies net savings after accounting for CNS's execution costs. However, the verified savings do not take into consideration federal costs for implementing, maintaining, and overseeing the Cost Savings Program. To provide a sense of the scope of the oversight effort, NPO officials said about 100 of the approximately 130 employees at NPO at the end of fiscal year 2018 had some role in the Cost Savings Program, although only one full-time position is dedicated to the Cost Savings Program.

Further, NNSA is likely to start its acquisition planning for some M&O contracts in 2022 and 2023.[61] However, NNSA officials, as well as site officials, were uncertain about whether the Cost Savings Program could be exported to other existing or future contracts, including the cost effectiveness of the program, because NNSA has not gathered information on and documented analysis of the costs and potential benefits of the Cost Savings Program. By gathering information on and documenting the analysis of data on the costs and benefits of the Cost Savings Program, NNSA officials and contractor representatives could

[61]The FAR defines acquisition planning as the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling the agency need in a timely manner and at a reasonable cost. It includes developing the overall strategy for managing the acquisition. 48 C.F.R. § 2.101. The current contracts for all of the NNSA sites will expire between 2024 and 2028, if all contract option terms are exercised. According to officials from the Office of Acquisition and Project Management, NNSA typically starts planning an acquisition for an M&O contract about 2 years prior to the expiration of the current contract.

make better-informed decisions about whether to implement aspects of the Cost Savings Program at other sites.

NNSA Has Not Evaluated or Shared Information on Specific Benefits of the Cost Savings Program That Could Be Applied Elsewhere

CNS achieved cost savings at Y-12 and Pantex by implementing a variety of cost savings initiatives. Even without a formal Cost Savings Program in place, some efficiencies may be applicable at other sites as a way to save money across the enterprise, according to officials we interviewed from NPO. For example, at Pantex, the contractor discovered it could conduct fewer recurring injections of treatment wells but still achieve the same technical results and comply with standards, according to NNSA officials. This initiative saved over $500,000, according to NNSA's Verification Report. If other sites experience similar recurring costs, then sharing this initiative might lead to cost savings at those sites.

According to DOE's Order 210.2A on the DOE Corporate Operating Experience Program, each DOE organization is required to submit lessons learned to the DOE Corporate Lessons Learned Database when the operating experience has relevance to other DOE sites and the information has the potential for cost savings.[62] Although NPO did not enter information about lessons learned from the Cost Savings Program into the database, NPO officials said they shared lessons learned with the Executive Steering Committee and that they presumed the Committee had passed information along to other sites. Contractor representatives and NNSA officials from all five of the other NNSA sites we interviewed noted that NNSA has not shared any information about specific successful cost savings initiatives from Y-12 and Pantex that could be applicable to them. Almost half of the NNSA officials and contractor representatives from other sites we interviewed said they were not very familiar with the Cost Savings Program. However, officials at Y-12 and Pantex told us they believe there are certain initiatives that could be useful at other sites and that other sites have asked for information about certain initiatives.

Officials from the Office of Acquisition and Project Management said they believe there will be a request for a lessons learned evaluation from NNSA headquarters once the current Y-12 and Pantex contract expires; however, such an effort would begin in several years—as late as 2024 if all option terms are exercised and NNSA began this evaluation immediately. According to NNSA officials, the Cost Savings Program was

[62]Department of Energy, *DOE Corporate Operating Experience Program*, DOE O 210.2A (Washington, D.C.: April 8, 2011).

a new concept and required maturity and proven concepts before sharing any lessons learned. However, by sharing information on potentially beneficial efficiencies and lessons learned from the Cost Savings Program at Y-12 and Pantex throughout the enterprise, NNSA could help achieve cost savings enterprise-wide even without implementing formal cost savings programs at other sites.

NNSA Has Not Evaluated Whether an Annual Controlled Baseline May Be Beneficial at Other Sites

The Annual Controlled Baseline is another specific aspect of the Cost Savings Program that could be beneficial to implement at other sites, or programs at a site, NNSA officials said. Currently, none of the other NNSA sites have an established site-wide baseline that would allow NNSA to understand the costs involved in running those sites or implementing their programs, according to officials from NNSA's Office of Acquisition and Project Management. According to NPO officials, the Annual Controlled Baseline provides NNSA with better and more thorough information on the costs of running the two sites.

As discussed previously, employing a cost-based model at Y-12 and Pantex—as opposed to the budget-based model at other sites—allows NNSA to understand the contractor's cost to produce a certain amount of product. Although officials from NNSA's Office of Acquisition and Project Management said it would be beneficial to have the Annual Controlled Baseline at other sites in order to gain additional insight into the cost of certain activities, they believed a drawback to requiring other sites to institute such a baseline would be deploying the considerable effort and resources to establish the baseline similar to those that were required at Y-12 and Pantex.

NNSA has not evaluated whether to require the other sites to have an Annual Controlled Baseline, either for the entire site or for certain programs at different sites. The 2019 DOE Acquisition Guide states that in the context of acquisition planning, good technical, schedule, and cost baselines are essential for developing realistic and measureable targets. By evaluating whether to require all sites to implement an Annual Controlled Baseline, either for the entire site or for certain programs at the different sites, NNSA may be in a better position to achieve greater financial transparency at sites across the nuclear security enterprise. This action, in turn, could potentially identify opportunities for cost savings, help NNSA better understand their contractors' cost performance, and help the agency administer its sites more efficiently.

Conclusions

In recent years, the Cost Savings Program at Y-12 and Pantex has realized hundreds of millions in savings to the nuclear security enterprise,

dozens of site reinvestment projects, and increased financial transparency. Although NNSA has identified site reinvestment projects as one of the key benefits of the Cost Savings Program, NNSA and CNS have not committed approximately $13 million of site reinvestment funds available at Y-12 and Pantex, in part because they have not evaluated and developed a plan on how best to aggregate and use the funds. If NNSA develops a plan on how best to use the remaining and potential future available site reinvestment funds, it would be better positioned to aggregate funds for site reinvestment projects. Further, if funds for site reinvestment projects persist in PPAs for too long, NNSA risks their rescission in future years' appropriations.

NNSA officials were uncertain about whether the Cost Savings Program could be exported to other existing or future contracts, including the cost effectiveness of the program, because NNSA has not gathered information on and documented its analysis of the costs and potential benefits of the Cost Savings Program. By gathering information on and documenting its analysis of the results of the Cost Savings Program, NNSA officials and contractor representatives could make a better-informed decision about whether to implement aspects of the Cost Savings Program under existing contracts or as part of future M&O contracts.

NNSA has not shared information on specific efficiencies that could be applicable to other sites because NNSA officials have not submitted such lessons learned to DOE's Corporate Lessons Learned Database. By sharing information on potentially beneficial efficiencies and lessons learned from the Cost Savings Program at Y-12 and Pantex throughout the enterprise, NNSA could help achieve cost savings enterprise-wide even without implementing formal cost savings programs at other sites.

Additionally, none of the other NNSA sites have an established site-wide baseline. NNSA has not evaluated whether it should require the other sites to have such a baseline. By evaluating whether to require other sites to institute a baseline—either in whole or in part for certain programs at the different sites—NNSA could increase financial transparency agency-wide.

Recommendations for Executive Action

We are making the following four recommendations to NNSA:

The NPO Cost Savings Program Manager should work with CNS to evaluate the remaining site reinvestment funds and develop and

implement a plan for how best to aggregate and use them. (Recommendation 1)

The Associate Administrator for Acquisition and Project Management should gather data on and document an analysis of the Cost Savings Program, including its cost effectiveness, to determine whether it is exportable to existing or future contracts. (Recommendation 2)

The NPO Cost Savings Program Manager should share relevant lessons learned with other NNSA sites so that those sites can determine if efficiencies CNS has achieved can be implemented at other sites. (Recommendation 3)

The Associate Administrator for Acquisition and Project Management should evaluate whether to require all other sites to institute an Annual Controlled Baseline. (Recommendation 4)

Agency Comments

We provided a draft of this report to NNSA for review and comment. The agency provided written comments, which are reproduced in appendix I; the agency also provided technical comments that we incorporated in the report as appropriate. NNSA agreed with three of the recommendations and agreed in principle with the fourth.

Regarding our second recommendation that NNSA gather data on and document an analysis of the Cost Savings Program, including its cost effectiveness, to determine its exportability to existing or future contracts, NNSA agreed that the potential benefits of a Cost Savings Program should be considered for future contracts, as applicable. However, in its written comments, NNSA stated that the Cost Savings Program was uniquely intertwined with the consolidation of the two sites, Y-12 and Pantex, under one contract. As we discussed in the report, roughly 90 percent of the savings from the Cost Savings Program were attributed to transforming site operations to create a more efficient and sustainable enterprise, and not associated with merging the two sites. We continue to believe that by gathering data and documenting an analysis of the Cost Savings Program for its exportability, NNSA will be able to make better-informed decisions about whether to implement the program at other existing or future contracts.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Energy, the Administrator of NNSA, and other interested parties. In addition, this report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or bawdena@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made significant contributions to this report are listed in appendix II.

Allison Bawden
Director, Natural Resources and Environment

List of Committees

The Honorable James M. Inhofe
Chairman
The Honorable Jack Reed
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Lamar Alexander
Chairman
The Honorable Dianne Feinstein
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
United States Senate

The Honorable Adam Smith
Chairman
The Honorable Mac Thornberry
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Marcy Kaptur
Chairwoman
The Honorable Mike Simpson
Ranking Member
Subcommittee on Energy and Water Development
Committee on Appropriations
House of Representative

Appendix I: Comments from the National Nuclear Security Administration

Department of Energy
Under Secretary for Nuclear Security
Administrator, National Nuclear Security Administration
Washington, DC 20585

June 05, 2020

Ms. Allison B. Bawden
Director, Natural Resources
and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Ms. Bawden:

Thank you for the opportunity to review the Government Accountability Office (GAO) draft report "National Nuclear Security Administration: Analyzing Cost Savings Program Could Result in Wider Use and Additional Contractor Efficiencies" (GAO-20-451). Consolidating the contracts for managing and operating the Y-12 National Security Complex in Tennessee and the Pantex Plant in Texas was a first-of-its-kind undertaking for the Department of Energy's National Nuclear Security Administration (NNSA). As with any new venture, the consolidation posed unique challenges, which we have addressed through enhanced communication and collaboration, and continuous improvement in our processes and validation methodologies.

NNSA appreciates the auditors' validation of the reasonableness of our reported $515 million in cumulative cost savings through fiscal year 2018. We also agree with GAO's four recommendations that support continuous improvement through a focus on evaluating cost savings reinvestments and assessing the potential applicability of cost savings program elements at other sites.

The attached Management Decision provides NNSA's specific response to each recommendation, along with timelines for completion. Our subject matter experts have also separately provided technical and general comments to enhance the clarity and accuracy of the report. If you have any questions about this response, please contact Dean Childs, Director, Audits and Internal Affairs, at (301) 903-1341.

Sincerely,

Lisa E. Gordon-Hagerty

Enclosure

Enclosure

NATIONAL NUCLEAR SECURITY ADMINISTRATION (NNSA)
Management Decision

"National Nuclear Security Administration: Analyzing Cost Savings Program Could Result in Wider Use and Additional Contractor Efficiencies" (GAO-20-451)

The Government Accountability Office (GAO) recommends:

Recommendation 1: The NNSA Production Office (NPO) Cost Savings Program Manager work with Consolidated Nuclear Security, LLC, (CNS) to evaluate the remaining site reinvestment funds and develop and implement a plan for how best to aggregate and use them.

Management Response: Concur. NPO will work with CNS on a disposition plan for any remaining reinvestment funds. The estimated completion for this action is December 31, 2020.

Recommendation 2: The Associate Administrator for Acquisition and Project Management gather information on and document its analysis of data on the Cost Savings Program to determine whether it is exportable, including its cost effectiveness, to existing or future contracts.

Management Response: Concur in Principle. NNSA agrees the potential benefits of a cost savings program, such as the one implemented at CNS, should be considered for future contracts as applicable. The cost savings program at CNS, however, is unique as it is intertwined with a site consolidation initiative. NNSA continuously evaluates the results of contract transitions and factors lessons learned into subsequent contracts, including cost savings and reduction opportunities, as well as the oversight cost associated with those activities. Each contract transition is unique as well, and the exportability of the CNS Cost Savings Program model has to be evaluated on a case by case basis, as existing contracts are re-competed. Individual cost savings and reduction opportunities, not linked to consolidation, would be covered in sharing and evaluating lessons learned in response to Recommendation 3. Cost baselines are addressed in our response to Recommendation 4. NNSA will consider this recommendation closed with the completion of actions to address Recommendations 3 and 4.

Recommendation 3: The NPO Cost Savings Program Manager share relevant lessons learned with other NNSA sites so that those sites can determine if efficiencies CNS has achieved can be implemented at other sites.

Management Response: Concur. NPO will upload key lessons learned into the DOE Corporate Lessons Learned Database so results may be shared with and considered by other sites. The estimated completion for this action is December 31, 2020.

Recommendation 4: The Associate Administrator for Acquisition and Project Management evaluate whether to require all other sites to institute an Annual Controlled Baseline.

Enclosure

Management Response: Concur. NNSA Acquisition and Project Management will evaluate whether to further expand use of Annual Controlled Baselines. The estimated completion for this action is December 31, 2020.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Allison B. Bawden, (202) 512-3841, or bawdena@gao.gov.

Staff Acknowledgments

In addition to the individual named above, key contributors to this report included Hilary Benedict (Assistant Director), Jessica Lewis (Analyst in Charge), Antoinette Capaccio, Cindy Gilbert, Dan Royer, Holly Sasso, Sheryl Stein, Breanna Trexler, and Monique Williams.