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NUCLEAR SECURITY ENTERPRISE

Strategic Partnership Projects Can Support Mission, Operations, and Research



Strategic Partnership Projects Can Support Mission, Operations, and Research

GAO-26-108229

September 2026

A report to congressional committees

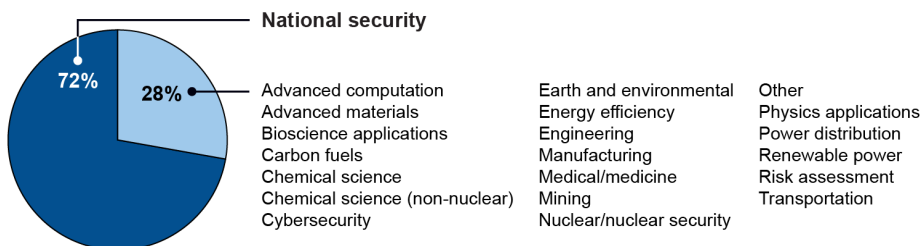
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What GAO Found

The National Nuclear Security Administration (NNSA)—a separately organized agency within the Department of Energy (DOE)—and its eight contractor-managed and -operated sites engage in Strategic Partnership Projects (SPP). These projects allow NNSA sites to perform work for other federal agencies and nonfederal entities and for those entities to benefit from the significant public investment in the specialized facilities and scientific and technical expertise of NNSA sites. DOE requires NNSA sites to recover the full cost of the SPP through reimbursement from partners.

SPP work was generally steady in fiscal years 2019 through 2024, with total reimbursed costs of almost \$15 billion in constant fiscal year 2024 dollars. SPP at Sandia National Laboratories accounted for more than half of the total reimbursed costs of NNSA's SPP, while Kansas City National Security Campus experienced the most growth in SPP during this period, both in costs and the number of SPP. The Department of Defense sponsored the most SPP, and NNSA categorized most SPP as related to national security.

Strategic Partnership Projects by Project Type, Fiscal Years 2019 Through 2024



Source: GAO analysis of National Nuclear Security Administration data. | GAO-26-108229

NNSA sites conduct SPP based on capabilities or statute, providing support for mission work or additional benefits. NNSA's capabilities provide unique opportunities, sometimes otherwise unavailable, to SPP partners. NNSA sites also conduct some SPP due to statutory authorization or the special nature of the relationship between NNSA and the partner organization. SPP can also provide benefits either directly to mission work, operations, or through research insights. Specifically, SPP can provide opportunities for technical staff to enhance their skillsets and SPP partners contribute to facilities and capabilities maintenance.

Decreases in NNSA sites' capacity for SPP could impact NNSA's and its partners' ability to achieve their missions and result in NNSA paying more in indirect costs. For example, all nine SPP federal partners GAO interviewed said SPP was essential to their ability to complete their mission. They also said that, in many cases, NNSA's sites are the only places for specific capabilities. In addition, SPP partners' funds reduce the indirect costs NNSA must pay for its programs and related facilities. If NNSA needed to decrease its SPP work, NNSA's costs would increase without the partners' contributions, site representatives said, because NNSA would carry more of the costs to operate and maintain facilities and infrastructure. Representatives from some sites said they believed they have additional capacity for increases in SPP, while other sites have limited capacity.

Why GAO Did This Study

NNSA's eight national laboratories, plants, and sites perform reimbursable work for outside entities through SPP. SPP provide value to both NNSA and its partners by leveraging capabilities that can result in mission-related scientific achievements.

In recent years, NNSA's workload for maintaining and modernizing the nation's nuclear weapons stockpile has grown substantially, raising concerns about how much capacity NNSA has to conduct SPP.

The Senate committee report accompanying the National Defense Authorization Act for Fiscal Year 2025 includes a provision for GAO to review SPP. GAO's report examines (1) the extent to which NNSA sites have engaged in SPP and how this work may have changed in recent years, (2) why SPP work is conducted at NNSA sites and the impact of SPP activities on the execution of NNSA's missions, and (3) the potential effects on NNSA facilities and SPP partners should NNSA need to rebalance SPP partnerships.

GAO reviewed and analyzed NNSA and contractor data on SPP projects and documentation of SPP processes to determine the extent and nature of recent SPP. GAO conducted five site visits to understand the capabilities used by SPP at the sites. GAO also interviewed NNSA officials, contractor representatives, and SPP partners to discuss the types of SPP and the work's connection to NNSA's mission.

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Abbreviations

DOD	Department of Defense
DOE	Department of Energy
DHS	Department of Homeland Security
IAEA	International Atomic Energy Agency
Kansas City	Kansas City National Security Campus
Livermore	Lawrence Livermore National Laboratory
Los Alamos	Los Alamos National Laboratory
M&O	management and operating
MESA	Microsystems Engineering, Science and Applications
NASA	National Aeronautics and Space Administration
NIF	National Ignition Facility
NNSA	National Nuclear Security Administration
Nevada	Nevada Nuclear Security Site
Pantex	Pantex Plant
Sandia	Sandia National Laboratories
SIPP	Strategic Intelligence Partnership Projects
SPP	Strategic Partnership Projects
WFO	Work for Others
Y-12	Y-12 National Security Complex

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September 10, 2026

Congressional Committees

As one of the largest research agencies in the federal government, the Department of Energy (DOE) spends billions of dollars each year on research to support its diverse missions, including advancing scientific research and technology development, ensuring efficient and secure energy, and ensuring national security through the military application of nuclear science. To allow non-DOE entities to benefit from the significant public investment in DOE's laboratories with their unique, highly specialized facilities, and scientific and technical expertise, DOE coordinates Strategic Partnership Projects (SPP), formerly known as the Work for Others (WFO) program. These projects allow work to be performed by DOE's laboratories, plants, and sites for both federal agencies and nonfederal entities, provided several requirements are met. Such requirements include that SPP projects do not hinder DOE's core mission or put laboratories, plants, and sites in competition with the private sector.

The National Nuclear Security Administration (NNSA)—a separately organized agency within DOE—is responsible for the nuclear weapons stockpile; the nuclear security enterprise; naval nuclear propulsion; international nuclear safety and nonproliferation; counterterrorism and counterproliferation; and science and technology leadership. NNSA's eight government-owned, contractor-operated laboratories, plants, and sites all conduct SPP to varying degrees.¹ From fiscal year 2019 through fiscal year 2024, NNSA performed almost \$15 billion in SPP.² NNSA's

¹NNSA's eight laboratories, plants, and sites are the (1) Kansas City National Security Campus (Kansas City) in Kansas City, Missouri; (2) Lawrence Livermore National Laboratory (Livermore) in Livermore, California; (3) Los Alamos National Laboratory (Los Alamos) in Los Alamos, New Mexico; (4) Nevada National Security Site (Nevada) in Mercury, Nevada; (5) Pantex Plant (Pantex) in Amarillo, Texas; (6) Sandia National Laboratories (Sandia) in New Mexico and California, among other locations; (7) Savannah River Site in Aiken, South Carolina; and (8) the Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee. NNSA relies on management and operating (M&O) contractors to operate, maintain, or support its laboratories, plants, and sites. We refer to the eight laboratories, plants, and sites as NNSA sites throughout this report.

²Throughout this report, we report costs for all fiscal years in constant fiscal year 2024 dollars to account for inflation.

Office of Strategic Partnership Projects is responsible for managing SPP enterprise-wide.

In October 2013, we found that DOE officials had not ensured that WFO program requirements were consistently met.³ For example, at that time, DOE officials did not take steps to independently verify whether a proposed WFO project had met DOE requirements prior to approving the work. Since that time, DOE has taken steps to improve management of SPP, including establishing its Office of Strategic Partnership Projects as a centralized office with oversight over SPP enterprise-wide. In recent years, however, NNSA's workload for maintaining and modernizing the nation's nuclear weapons stockpile has grown substantially, raising concerns about how much capacity NNSA has to conduct SPP.

Senate Report 118-188 accompanying the National Defense Authorization Act for Fiscal Year 2025 includes a provision for GAO to assess NNSA's Strategic Partnership Projects. Our report examines (1) the extent to which NNSA facilities have engaged in SPP in recent years and how this work has changed over time; (2) why SPP work is conducted at NNSA sites and how SPP activities impact NNSA mission work; and (3) the potential effects on NNSA facilities and SPP partners should NNSA facilities need to rebalance SPP partnerships.

To address all three objectives, we conducted site visits to five of the eight NNSA sites—Kansas City, Livermore, Los Alamos, Nevada, and Sandia. We selected these sites because they represent the majority (over 95 percent) of NNSA's SPP agreements and reimbursed costs enterprise-wide. We interviewed NNSA and contractor representatives on these site visits and in follow-up meetings about NNSA and contractor SPP activities, the relationship between SPP and NNSA's mission at those sites, significant SPP partners at those sites, NNSA and contractor

³GAO, *National Laboratories: DOE Needs to Improve Oversight of Work Performed for Non-DOE Entities*, [GAO-14-78](#) (Washington, D.C.: Oct. 25, 2013). We made six recommendations including for DOE to take steps to ensure compliance with project approval requirements and require laboratories to establish written procedures for charging costs to projects. DOE generally agreed with the report and its recommendations but only implemented four of the six recommendations. For the last two recommendations to (1) ensure annual summary reports were prepared, and (2) establish performance measures, the agency revised its WFO order to remove the requirement for annual summary reports and said their revised order addressed performance measures. We maintained that having annual summary reports would be beneficial for both oversight and users of the data, and the order did not identify specific performance measures, which would have helped DOE and decision-makers track the program's progress in meeting its objectives.

SPP processes, and the overall management of NNSA's SPP activities. We reviewed NNSA and contractor processes and systems for accepting, conducting, and prioritizing SPP work. We also toured site facilities where SPP activities are conducted to better understand the capabilities NNSA sites have available to meet SPP partners' needs.

To describe the extent to which NNSA facilities have engaged in SPP in recent years and how this work has changed over time, we reviewed and analyzed data on the amount of work performed under the SPP program in total and by site for fiscal years 2019 through 2024 (the most recent and consistent data available, according to NNSA officials). Specifically, we analyzed the data to determine the total number of SPP agreements, total reimbursed costs, site-specific data, SPP partners, as well as any trends in the data. We analyzed the data to determine the number of projects across 21 NNSA-generated project categories by number of agreements in total and by site. We adjusted all data into constant fiscal year 2024 dollars to account for inflation. We assessed the reliability of the data through documentation reviews, interviews with knowledgeable officials, and electronic testing for missing data or obvious errors. We determined that the data were sufficiently reliable to describe the SPP work performed at the sites.

To assess why SPP work is conducted at NNSA sites and how SPP activities impact the execution of NNSA's core mission activities, we reviewed documentation on unique capabilities at the different NNSA sites. We interviewed NNSA officials and contractor representatives to determine why SPP partners choose their sites, the extent to which SPP work impacts NNSA mission activities, and to determine other benefits or challenges from SPP work. We selected a nongeneralizable sample of 13 SPP agreements across different categories, project size, and type of partner organization to determine how the projects are consistent with or complementary to NNSA missions and why they were conducted at NNSA sites.

To assess the potential effects on NNSA facilities and SPP partners should NNSA facilities need to rebalance SPP partnerships, we interviewed NNSA officials to determine the extent to which changes in the amount of SPP work would affect the NNSA sites' ability to perform their mission. Because NNSA sites are required to fully recover the costs associated with conducting SPP work, we reviewed and analyzed data on the indirect costs SPP partners provide NNSA to determine the extent to which NNSA's costs could increase without SPP funding. We also interviewed selected SPP partners to determine any benefits or

challenges SPP work presents for them. For more information on our objectives, scope, and methodology, see appendix I.

We conducted this performance audit from April 2025 to September 2026 in accordance with generally accepted government auditing standards. These 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 Offices Responsible for SPP Activities

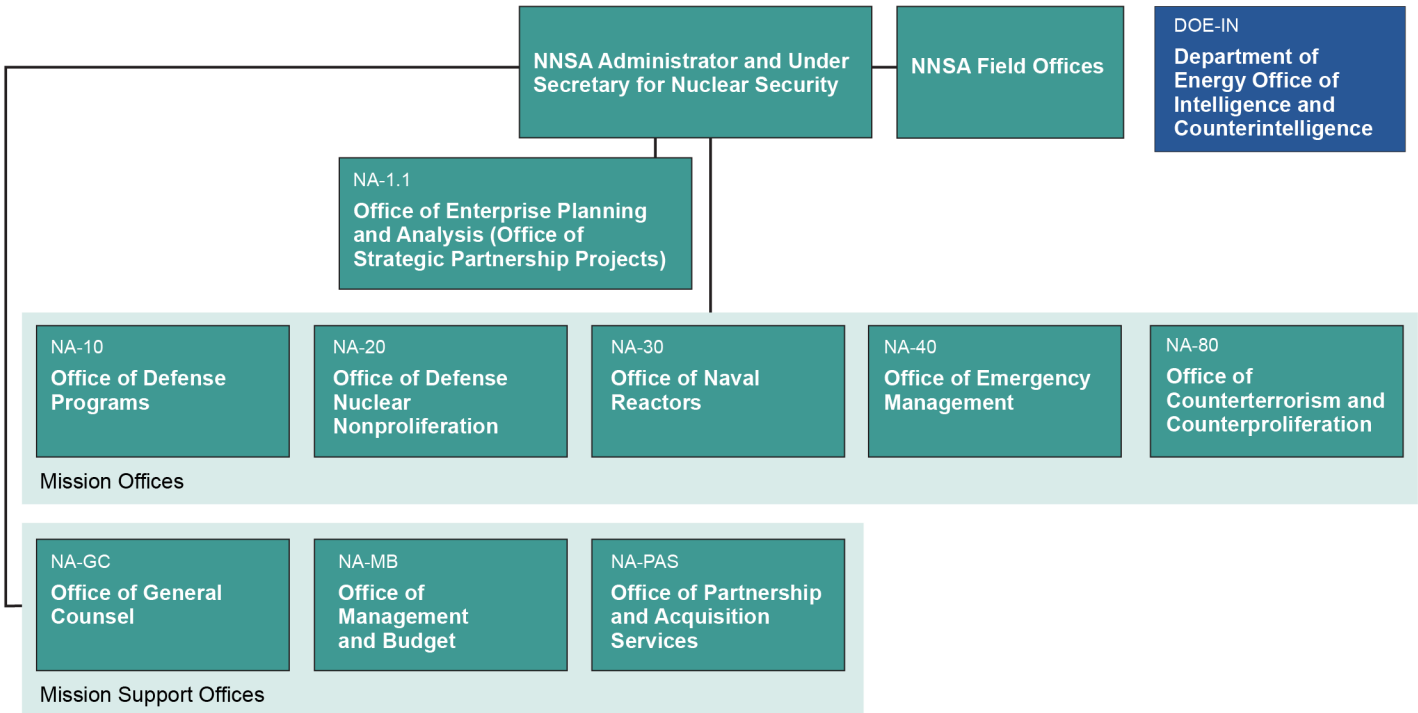
NNSA's Office of Strategic Partnership Projects is responsible for policy development, oversight, information dissemination, and tracking information on SPP across the enterprise, according to NNSA documentation and officials. The Office of Strategic Partnership Projects is located within the Office of Enterprise Planning and Analysis (NA-1.1), which reports directly to the NNSA Administrator, who is also the Under Secretary for Nuclear Security (see fig. 1).⁴ The SPP office also annually reviews the SPP program for efficiencies, duplication of effort, and other improvement measures, according to DOE's SPP Order.⁵ Separately, DOE's Office of Intelligence and Counterintelligence is responsible for managing, reviewing, and approving proposed Strategic Intelligence Partnership Projects (SIPP)—classified work conducted for outside entities—in coordination with field office intelligence elements. SIPP work is performed at NNSA's sites.⁶

⁴For the period of our review, the Office of Strategic Partnership Projects was located within the Office of Enterprise Planning and Analysis (NA-1.1), directly under the NNSA Administrator and Under Secretary for Nuclear Security. However, as of June 2026, NNSA officials confirmed the Office of Strategic Partnership Projects would move to a different office but did not yet know where.

⁵DOE, *Strategic Partnership Projects (SPP) [Formerly Known as Work for Others (Non-Department of Energy Funded Work)]*, Chg. 2 (LtdChg), DOE Order 481.1E (Washington, D.C.: Oct. 28, 2024).

⁶Throughout this report, we refer to SPP as being inclusive of SIPP unless otherwise noted.

Figure 1: Department of Energy and National Nuclear Security Administration (NNSA) Offices Involved in Strategic Partnership Project Administration and Oversight



Source: GAO presentation of National Nuclear Security Administration (NNSA) information. | GAO-26-108229

Note: As of February 2026, the Office of Strategic Partnership Projects was located within the Office of Enterprise Planning and Analysis (NA-1.1), directly under the NNSA Administrator and Under Secretary for Nuclear Security. However, as of June 2026, NNSA officials confirmed the Office of Enterprise Planning and Analysis was being eliminated and the Office of Strategic Partnership Projects would move to a different office as a result, but officials did not yet know where.

NNSA’s mission work is generally directed by headquarters-based federal program offices. For example, the Office of Defense Programs carries out NNSA’s mission to maintain and modernize the nuclear stockpile. The Office of Defense Nuclear Nonproliferation works globally to prevent state and non-state actors from developing nuclear weapons. The Office of Naval Reactors works jointly with the U.S. Navy to research, design, test, construct, operate, maintain, and dispose of nuclear propulsion plants for U.S. Navy submarines and aircraft carriers. The Office of Emergency Management combines efforts of multiple program offices across the nuclear security enterprise to ensure response capabilities for all-hazards events and continuity operations. The Office of Counterterrorism and Counterproliferation plays a key role in the U.S. government’s layered defense against nuclear terrorism and nuclear proliferation by preparing

for, preventing, and responding to nuclear or radiological incidents, accidents, or threats worldwide.

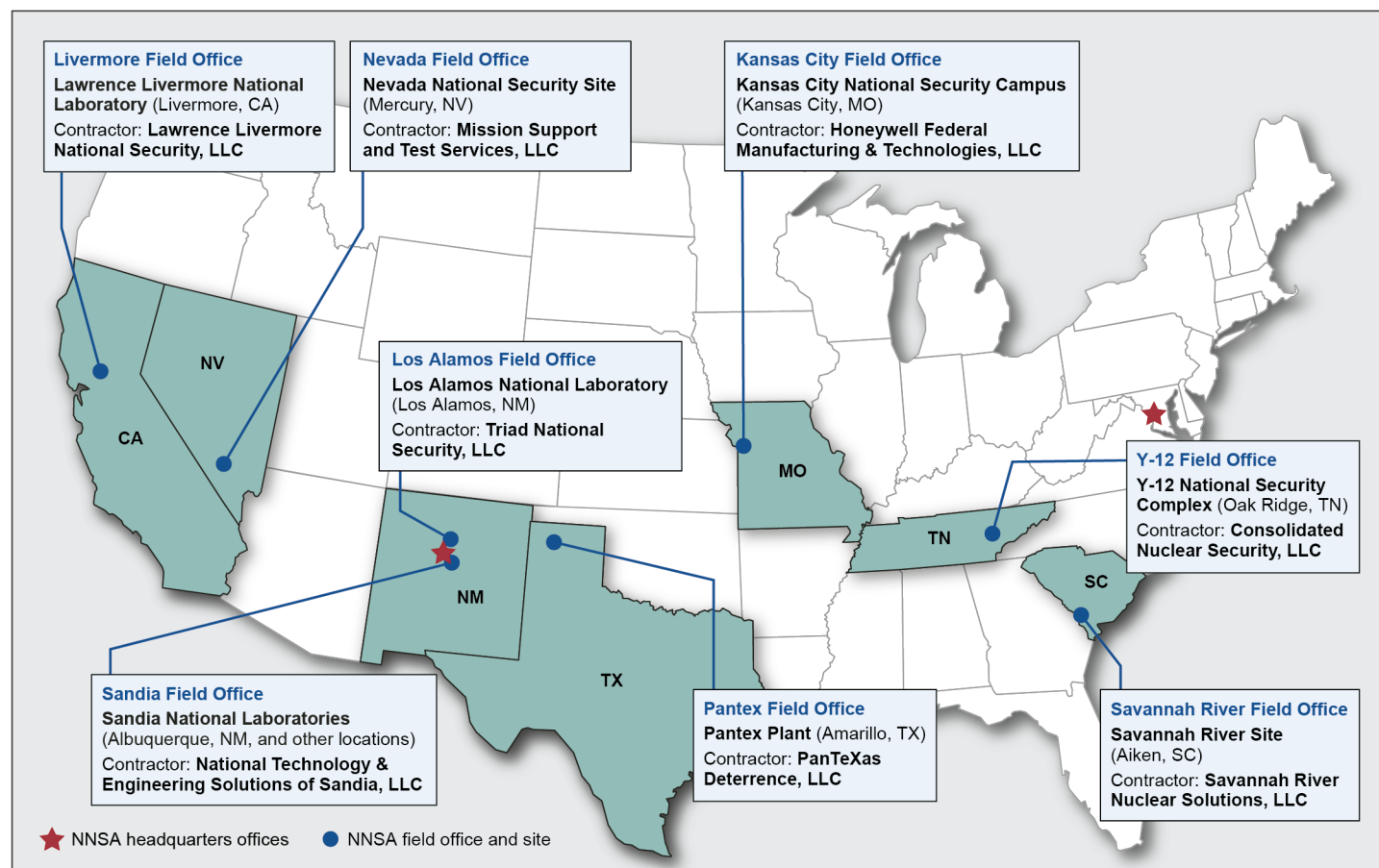
These program offices also play various roles in administering and overseeing SPP enterprise-wide, and the Office of Strategic Partnership Projects and NNSA field offices collaborate with these program offices on mission areas with relevant SPPs. For example, the Office of Counterterrorism and Counterproliferation reviews and provides concurrence on SPP agreements involving improvised nuclear devices, radiological dispersal devices, and radiological exposure devices.

Several mission support offices contribute to the management and oversight of SPP. For example, the Office of General Counsel provides legal advice on the patent and technical data clauses of contracts. NNSA's Office of Management and Budget ensures the availability of reimbursable budget authority and certifies all funding, according to NNSA documentation and officials. The Office of Partnership and Acquisition Services supports both headquarters and multi-site contracting officers with contracting and acquisition for SPP, according to NNSA officials. The Office of Partnership and Acquisition Services also approves SPP facility construction that exceeds the DOE-approved minor construction threshold.⁷

NNSA oversees eight sites run by M&O contractors, which constitute the nuclear security enterprise (see fig. 2). NNSA sites conduct a wide variety of research, development, testing, and evaluation missions as well as production missions.

⁷GAO, *National Nuclear Security Administration: Better Performance Tracking and Documentation Needed for Minor Construction Projects*, [GAO-24-105848](#) (Washington, D.C.: Jan. 25, 2024).

Figure 2: Location of National Nuclear Security Administration Sites



Sources: GAO presentation of National Nuclear Security Administration (NNSA) information; Map Resources (map). | GAO-26-108229

NNSA's field offices, co-located at the sites, are responsible for oversight and management of all SPP activities conducted at their sites. Field office managers are also responsible for developing and implementing procedures for SPP review, acceptance, authorization, monitoring, and closeout consistent with NNSA policies and procedures. Both the M&O contractors and field offices at the eight NNSA sites have site-specific procedures or systems for reviewing, accepting, authorizing, and monitoring SPP.

Legal Framework and General NNSA Process for Accepting SPP Work

Several statutes, regulations, and executive orders form the basis for how NNSA conducts SPP for other federal and nonfederal entities at their sites. Generally, the Economy Act of 1932 allows federal agencies to obtain goods and services from other agencies as long as the work cannot be performed as conveniently or cheaply by the private sector and is in the best interests of the federal government.⁸

The Atomic Energy Act of 1954 provides DOE the primary legal authority to perform SPP for other federal agencies, as well as for state and local governments, private-sector organizations, academic institutions, and foreign entities, if private-sector facilities or laboratories are not adequate for the purpose.⁹ Further, the Atomic Energy Act authorizes DOE to make arrangements for conducting research and development activities related to special nuclear material for private and public institutions. Under agreements with the National Aeronautics and Space Administration (NASA), DOE maintains the nation's capability to support the development, production, and safety of radioisotope power systems NASA uses, formalizing a relationship between the two departments for this purpose.¹⁰

Later acts and an executive order formalize relationships between DOE and other agencies to conduct SPP. Specifically, the Energy Reorganization Act of 1974 gives the Nuclear Regulatory Commission special access to DOE research and development capabilities.¹¹ Executive Order 12333 established responsibilities for DOE to support the U.S. intelligence community by providing expert technical, analytical, and research capability to others within the intelligence community and by anticipating how DOE can contribute to the formulation of intelligence collection and analysis requirements.¹² Further, the Homeland Security Act of 2002 provides the Department of Homeland Security (DHS) with

⁸31 U.S.C. § 1535.

⁹Pub. L. No. 83-703, § 1, 68 Stat. 919, 928, *amending* Act of Aug. 1, 1946, ch. 724, tit. I, ch. 4, § 33 (codified as amended at 42 U.S.C. § 2053).

¹⁰NASA has long used radioisotope systems to generate reliable electrical power and heat energy for long-duration space missions.

¹¹See Pub. L. No. 93-438, § 205(c), 88 Stat. 1233, 1246 (codified as amended at 42 U.S.C. § 5845).

¹²Exec. Order No. 12333, 46 Fed. Reg. 59941 (Dec. 4, 1981), *as amended by* Exec. Order No. 13284, 68 Fed. Reg. 4075 (Jan. 28, 2003); Exec. Order No. 13355, 69 Fed. Reg. 53593 (Sept. 1, 2004); and Exec. Order No. 13470, 73 Fed. Reg. 45325 (Aug. 4, 2008). As of August 2026, this executive order was still in effect.

special access to DOE and NNSA facilities, and most notably, holds that DHS mission work is considered to have equal status with DOE mission work.¹³

In addition, a 1977 treaty called the United States-International Atomic Energy Agency (IAEA) Safeguards Agreement established a relationship between the U.S. government and the IAEA for the application of international safeguards (technical measures and activities such as inspections and environmental sampling at nuclear facilities) on nuclear material at facilities in the United States.¹⁴ Also in 1977, the United States established the United States Support Program to provide technical assistance, equipment, and training to the IAEA for international safeguards. Congress further codified this relationship with the Nuclear Non-Proliferation Act of 1978.¹⁵ DOE also requires that all SPP activities be performed consistent with the Federal Acquisition Regulation and the DOE Acquisition Regulation.¹⁶

There are four pathways for SPP work to flow from outside entities through NNSA. Specifically:

- **Statutory requirement or authorization.** Specific statutes authorize NNSA to conduct work for outside entities if those entities have work that can only be done at NNSA or cannot be done economically in the private sector.
- **Outside entities approach NNSA.** Sometimes outside entities will directly approach NNSA or its sites after learning about a unique capability the agency has that could directly benefit the outside entity. For example, Kansas City contractor representatives said while they

¹³Pub. L. No. 107-296, § 309(a)(2), 118 Stat. 2135, 2172 (codified at 6 U.S.C. § 189(a)(2)).

¹⁴IAEA, *The Text of the Agreement of 18 November 1977 Between the United States of America and the Agency for the Application of Safeguards in the United States of America* (Vienna, Austria: Nov. 18, 1977). IAEA is an autonomous international organization affiliated with the United Nations and based in Vienna, Austria.

¹⁵Pub. L. No. 95-242, tit. II, 92 Stat. 120, 124-125.

¹⁶DOE, *DOE's Policy Re Laboratories, Plants and Sites Engaging in Strategic Partnership Projects with Other Federal Agencies, Independent Organizations, and the Private Sector*, DOE Policy 481.1 (Washington, D.C.: Dec. 17, 2014). DOE issued a class deviation to the Federal Acquisition Regulation pursuant to Executive Order 14275. Restoring Common Sense to Federal Procurement, Exec. Order No. 14275, reprinted in 90 Fed. Reg. 16447 (Apr. 18, 2025). DOE contracting officers are directed to follow the deviations in lieu of the Federal Acquisition Regulation.

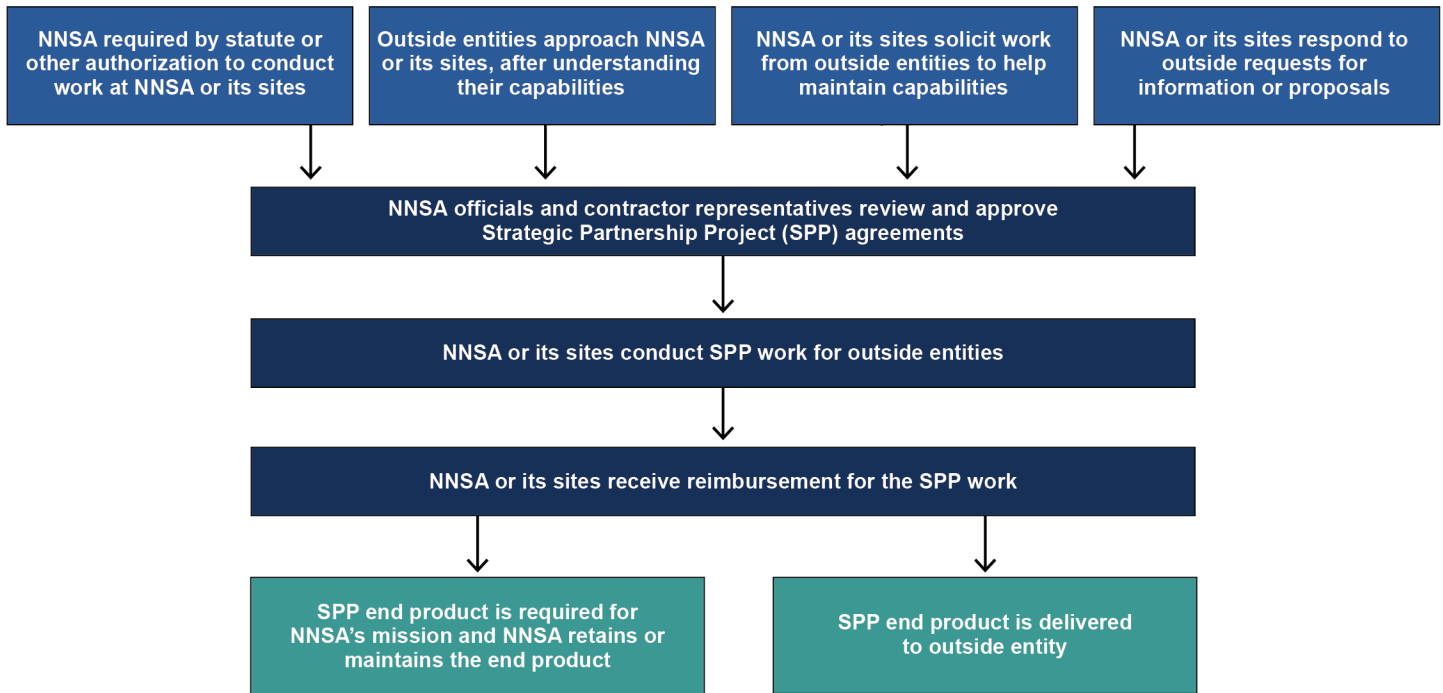
do not explicitly advertise their capabilities to attract more SPP work, they host client meetings in a sensitive compartmented information facility that may result in attendees learning more about their capabilities and then bring in more SPP work. In addition, Pantex representatives said they do not do much advertising for their available SPP resources, but they have existing relationships with project sponsors and accept SPP work by word of mouth.

- **Soliciting work from outside entities.** NNSA sites will sometimes reach out to outside entities if they know a unique NNSA capability could support another agency's mission. For example, Nevada contractor representatives said they will sometimes discuss unique site capabilities with potential partner organizations proactively to highlight how these capabilities could support SPP.
- **Responding to outside requests for information or proposals.** NNSA sites said they will sometimes respond to requests for information, requests for proposals, or federal opportunity announcements if a capability at their site is appropriate to meet that request. For example, Livermore contractor representatives said Livermore will respond to some open calls from other agencies, which is more typical than Livermore "shopping" its capabilities to outside entities.

Once a potential project has been identified, representatives of the entity (i.e., the sponsor) and the laboratory, plant, or site begin to negotiate the work to be performed and the estimated costs. When the site and sponsor have agreed to the terms of work, NNSA field office officials review the proposed SPP agreement. Finally, if the terms are approved by NNSA and the sponsor has provided certification of funding or advance payment for the work, an NNSA contracting officer certifies that the requirements have been met for the laboratory to conduct the work.

SPP end products (which can be physical products, such as components, or written products, such as research) can contribute directly to the mission of NNSA, in which case the technology or end product may be retained or maintained by NNSA. Otherwise, the product is delivered to the SPP partner for its end use (see fig. 3). Historically, the laboratories, plants, and sites have made important contributions via SPP that range from providing instrumentation for lunar landing missions to state-of-the-art security tools at the Olympics to advances in biofuels and hydrogen storage.

Figure 3: General Flow of Strategic Partnership Project Work from Outside Entities Through NNSA



Source: GAO presentation of National Nuclear Security Administration (NNSA) information. | GAO-26-108229

Note: Depending on the circumstance, NNSA or its sites may receive partial or complete funding from an SPP partner up front rather than being reimbursed in total after the work is complete.

NNSA SPP Policies and Orders

DOE has established program and financial management orders, policies, and procedures for SPP that are contained in several DOE directives.¹⁷

- **DOE Order 481.1E.**¹⁸ This order, last updated October 2024, defines SPP objectives, requirements, and responsibilities. It also establishes the requirement that SPP cannot adversely impact NNSA mission work and that DOE must recover the full cost for its work through reimbursement from partners. Full cost recovery includes the direct costs of the work (including labor and materials) and indirect costs

¹⁷For the most part, DOE policies and orders apply to both SPP and SIPP. Review, acceptance, authorization, monitoring, and closeout processes are similar for both SPP and SIPP, with a few additional steps for SIPP, including that DOE's Office of Intelligence and Counterintelligence manages, reviews, and approves proposed intelligence and intelligence-related SIPP. Throughout this report, we refer to SPP as being inclusive of SIPP unless otherwise noted.

¹⁸DOE Order 481.1E.

such as overhead (general and administrative expenses and other allocated overhead charges), as well as other costs (e.g., a 1 percent federal administrative charge), unless waived under other department guidelines.¹⁹ These costs are referred to as reimbursed costs. Throughout this report, we refer to this as the SPP Order.

- **DOE Order 484.1.**²⁰ This order, last updated October 2024, establishes that DOE resources will be made available to DHS consistent with the Homeland Security Act of 2002, which describes policies and procedures for DHS to access the capabilities of DOE's laboratories and other sites to further DHS mission objectives.
- **DOE Order 443.1C.**²¹ This order, last updated November 2024, establishes DOE-specific policy and principles for the protection of human subjects involved in DOE research, and DOE procedures and responsibilities for implementing policy and requirements set forth in federal law and policies.
- **DOE Order 522.1A.**²² This order, last updated in October 2024, establishes requirements for prices and charges for materials and services sold or provided to outside entities either directly or through the department's management and operating contractors, including for SPP.
- **DOE Policy 481.1.**²³ This policy, last approved December 2014, sets the context in which DOE and its sites should pursue SPP with other federal government agencies, state and local institutions, universities, foreign entities, and private companies. In this policy, DOE stated its commitment to the maximum use of, and engagement with, the national assets at the DOE laboratories, plants, and sites for the benefit of other federal agencies, private companies, universities, state and local institutions, and international entities, within the limits set by statutes, regulations, and DOE policy. However, the policy states that DOE will pay close attention to the overall amount of SPP relative to the sites' total budgets and to any exceedingly large or

¹⁹DOE, *Pricing of Departmental Materials and Services*, Chg.1 (LtdChg), DOE Order 522.1A (Washington, D.C.: Oct. 28, 2024).

²⁰DOE, *Reimbursable Work for the Department of Homeland Security*, Chg. 4 (LtdChg), DOE Order 484.1 (Washington, D.C.: Oct. 28, 2024).

²¹DOE, *Protection of Human Research Subjects*, Chg. 1, DOE Order 443.1C (Washington, D.C.: Nov. 23, 2024).

²²DOE Order 522.1A.

²³DOE Policy 481.1.

unusual projects. The policy also encourages the sites to develop and maintain a strategic approach to their SPP portfolios to maximize their contributions to the core strengths of the specific NNSA site.

- **DOE Policy 485.1A.**²⁴ This policy, approved December 2019, establishes criteria for how DOE ensures proposed engagements with foreign entities align with the strategic interests and foreign policy of the United States, are legally sound, address any national security considerations, and consider the risks associated with the sharing of DOE research and technologies.

NNSA Engaged in \$2 Billion to \$3 Billion in Strategic Partnership Projects Annually, with Steady Levels of Work in Fiscal Years 2019 Through 2024

NNSA engaged in Strategic Partnership Projects that resulted in \$2 billion to \$3 billion in annual reimbursements from outside entities in fiscal years 2019 through fiscal year 2024. Sandia conducted the highest number of SPP agreements, constituting about half of all NNSA's reimbursed funds during that time. Kansas City was responsible for most of the enterprise's SPP growth during that time. The Department of Defense (DOD) sponsored the most SPP agreements, and NNSA categorized most agreements as related to national security.

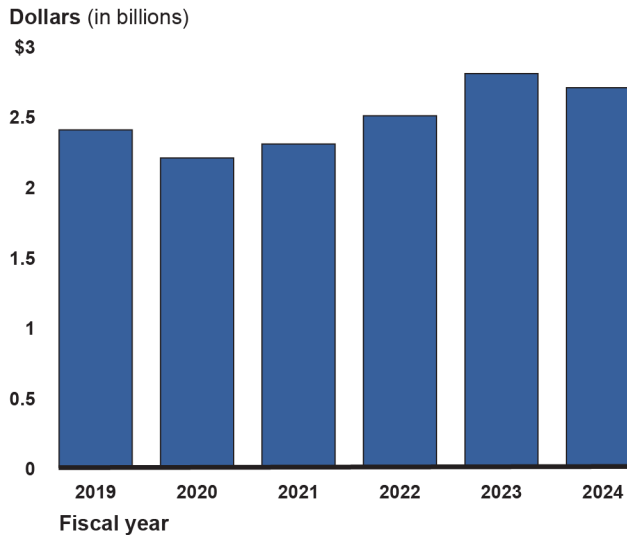
NNSA Sites Performed Between \$2 Billion and \$3 Billion in Strategic Partnership Projects Annually in Fiscal Years 2019 Through 2024

NNSA sites performed between \$2 billion and \$3 billion in SPP annually in fiscal years 2019 through 2024 (see fig. 4).²⁵

²⁴DOE, *Foreign Engagements with DOE National Laboratories*, DOE Policy 485.1A (Washington, D.C.: Dec. 13, 2019).

²⁵NNSA provided data that combined both detailed unclassified SPP data and selected unclassified data on classified SIPP projects, including the number of SIPP agreements and the total costs associated with SIPP. We have combined information on both unclassified and classified projects, including the number of agreements and total costs, for the purposes of our report. All reimbursed costs are in constant fiscal year 2024 dollars to account for inflation.

Figure 4: Total Annual Reimbursed Strategic Partnership Project Costs for NNSA, Fiscal Years 2019 Through 2024



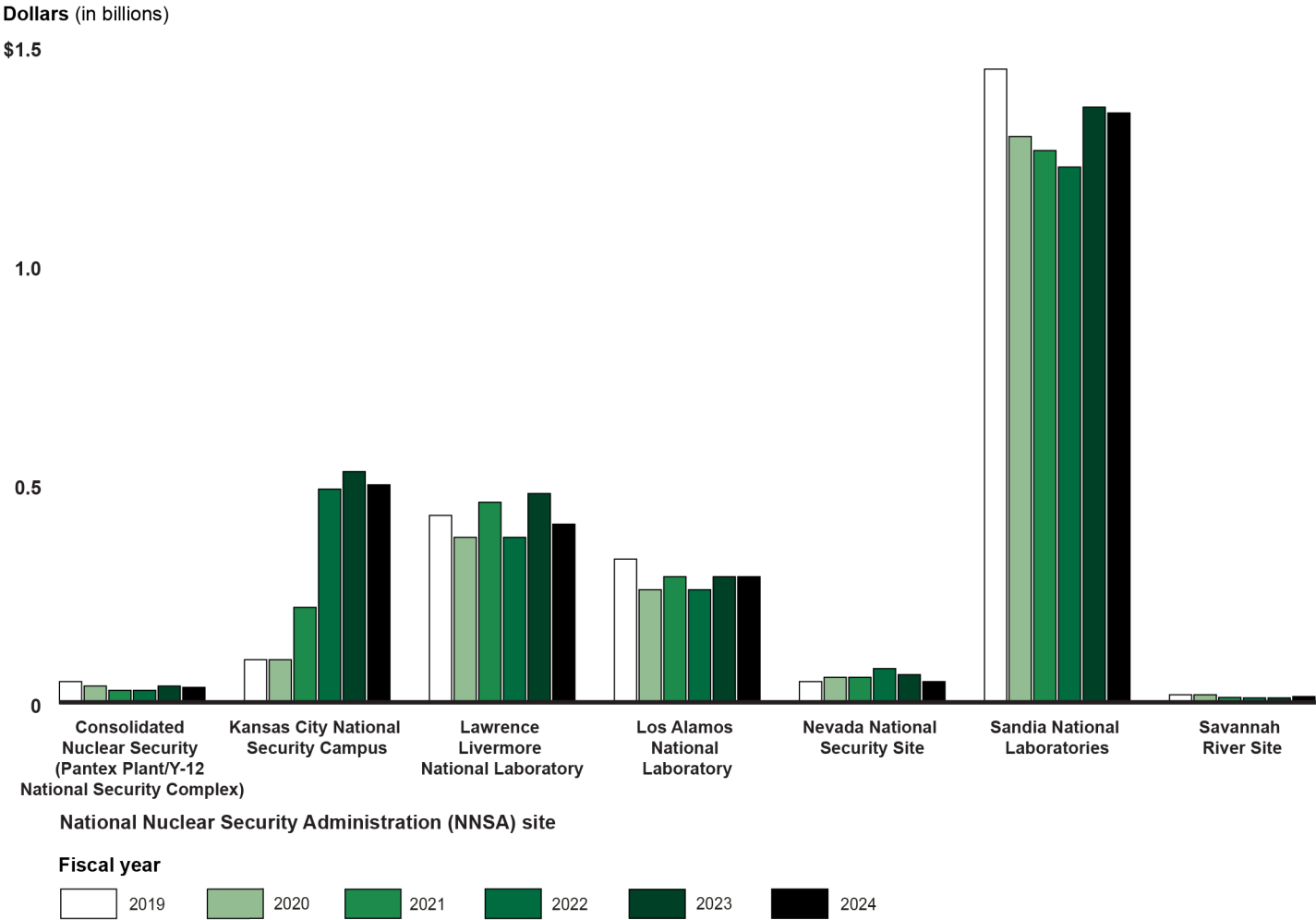
Source: GAO analysis of National Nuclear Security Administration (NNSA) data. | GAO-26-108229

Note: Dollars are in constant fiscal year 2024 dollars for all years to account for inflation.

All eight NNSA sites conducted at least some SPP in fiscal years 2019 through 2024, with annual reimbursed costs totals ranging from \$13 million at Savannah River in 2023 to over \$1.4 billion at Sandia in 2019 (see fig. 5).²⁶

²⁶Consolidated Nuclear Security was the M&O contractor for both Y-12 and Pantex from fiscal year 2014 through October 31, 2024, when the two contracts were split, and PanTeXas Deterrence became the M&O contractor for Pantex, while Consolidated Nuclear Security remained the contractor at Y-12. For ease of presentation, we have kept their data together throughout this report. For more information, see GAO, *National Nuclear Security Administration: Analyzing Cost Savings Program Could Result in Wider Use and Additional Contractor Efficiencies*, [GAO-20-451](#) (Washington, D.C.: June 24, 2020).

Figure 5: Total Annual Reimbursed Strategic Partnership Project Costs by NNSA Site, Fiscal Years 2019 Through 2024



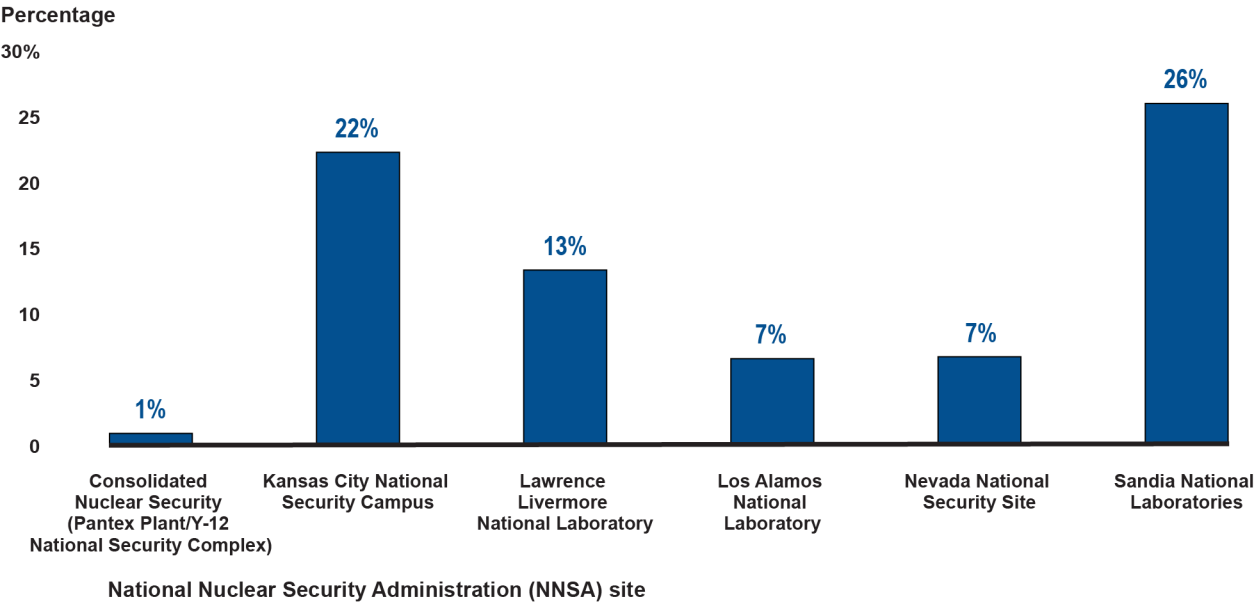
Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Dollars are in fiscal year 2024 dollars for all years to account for inflation. Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

Across the enterprise, SPP constitutes a larger part of some sites' total activities and costs (see fig. 6). SPP constituted the largest percentage of

total site work at Sandia (about 26 percent) and Kansas City (about 22 percent) in fiscal years 2021 through 2024.²⁷

Figure 6: Strategic Partnership Projects’ Average Percentage of Total NNSA Site Costs, Fiscal Years 2021 through 2024



Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Dollars are in fiscal year 2024 dollars to account for inflation. NNSA did not provide data on total site costs for the Savannah River Site because it was managed by DOE’s Office of Environmental Management until September 30, 2024. Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites’ data together.

With regard to SPP workforce and staffing, NNSA site representatives noted that they generally do not hire staff specifically for SPP, and most staff rotate on and off SPP work or split time between NNSA and SPP projects. Therefore, sites generally report the amount of staff time spent on SPP in terms of full-time equivalents.²⁸ Sandia representatives said they had about 3,400 full-time equivalents working on various SPP in fiscal year 2024, which amounted to about 20 percent of the site’s total

²⁷NNSA did not provide data on total site costs for the Savannah River Site as it was managed by DOE’s Office of Environmental Management until September 30, 2024.

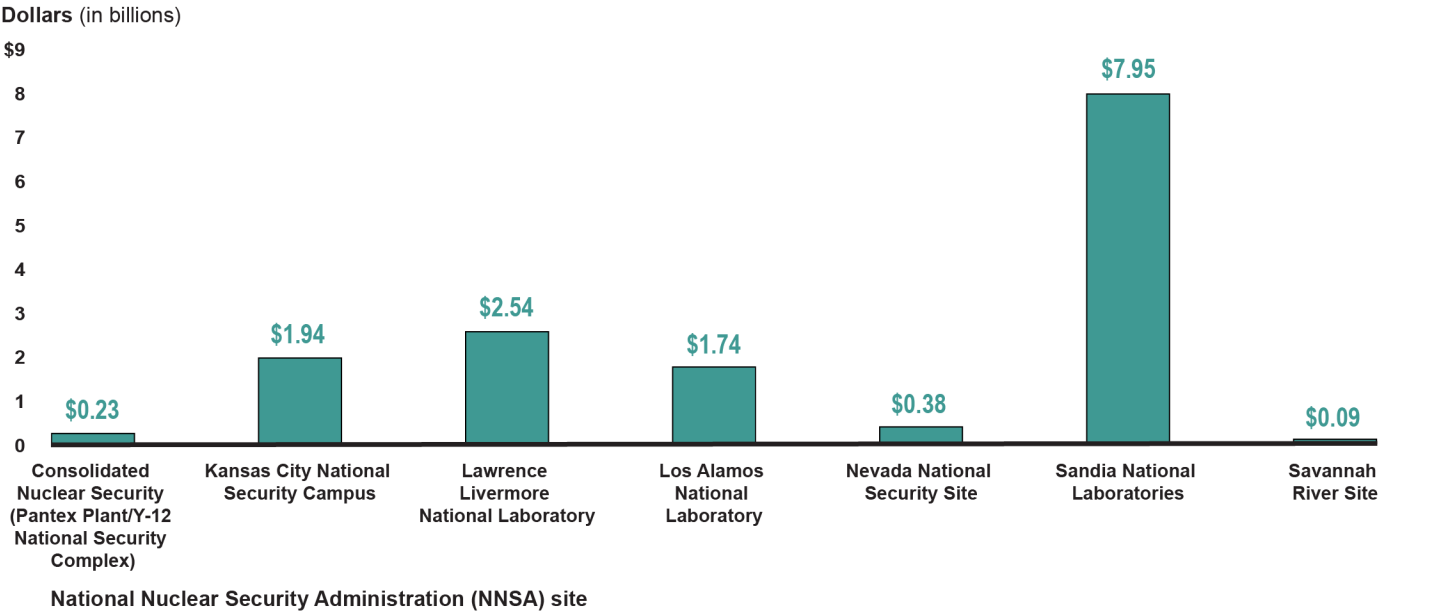
²⁸Full-time equivalents reflect the total number of regular, straight-time hours (i.e., hours that exclude overtime and holiday hours) worked by employees, divided by the number of compensable hours applicable to each fiscal year. One full-time equivalent is about 2,080 hours of work.

full-time equivalents. Officials from other sites reported a range from zero (at Savannah River Site) to 755 full-time equivalents (at Kansas City), representing zero percent (at Savannah River Site) to 11 percent (at Kansas City) of total full-time equivalents at those sites during fiscal years 2024 or 2025.

Sandia Performed Work That Accounted for More Than Half of NNSA's Reimbursed Costs in Fiscal Years 2019 Through 2024

Sandia conducted almost \$8 billion in SPP in fiscal years 2019 through 2024, more than half of the enterprise's nearly \$15 billion in total reimbursed costs for SPP during that time (see fig. 7).

Figure 7: Total Reimbursed Strategic Partnership Project Costs by NNSA Site, Fiscal Years 2019 Through 2024



Source: GAO analysis of NNSA data. | GAO-26-108229

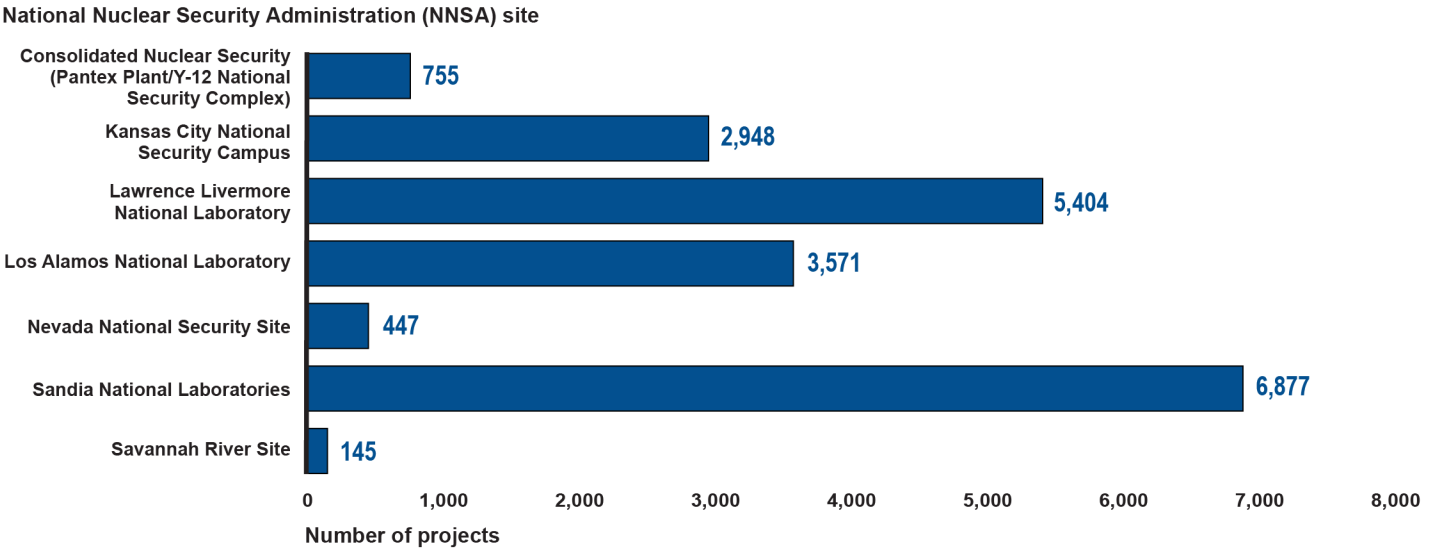
Notes: Dollars are in fiscal year 2024 dollars to account for inflation. Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

Each year, SPP at Sandia accounted for 49 to 60 percent of NNSA's total reimbursed SPP costs in fiscal years 2019 through 2024. As described above, Sandia's reimbursed SPP costs also constitute the largest percentage of any site's total work costs—almost 30 percent of the site's

total work costs. According to NNSA officials, the variation in the amount of SPP performed at each site is due in large part to differences in the core mission capabilities of each laboratory. According to Sandia contractor representatives and NNSA officials, Sandia has extensive expertise in systems engineering and systems integration, a capability that is heavily utilized by NNSA and other federal agencies, especially DOD.

Sandia also had the highest number of SPP agreements—about a third of the enterprise-wide total—each year in fiscal years 2019 through 2024 (see fig. 8). The number of SPP agreements (several agreements may be related to a single overarching project) ranged widely at each site in recent years. For example, there were 15 SPP agreements at Savannah River Site in 2019 and 1,196 at Sandia in 2024.

Figure 8: Total Number of Strategic Partnership Agreements by NNSA Site, Fiscal Years 2019 Through 2024

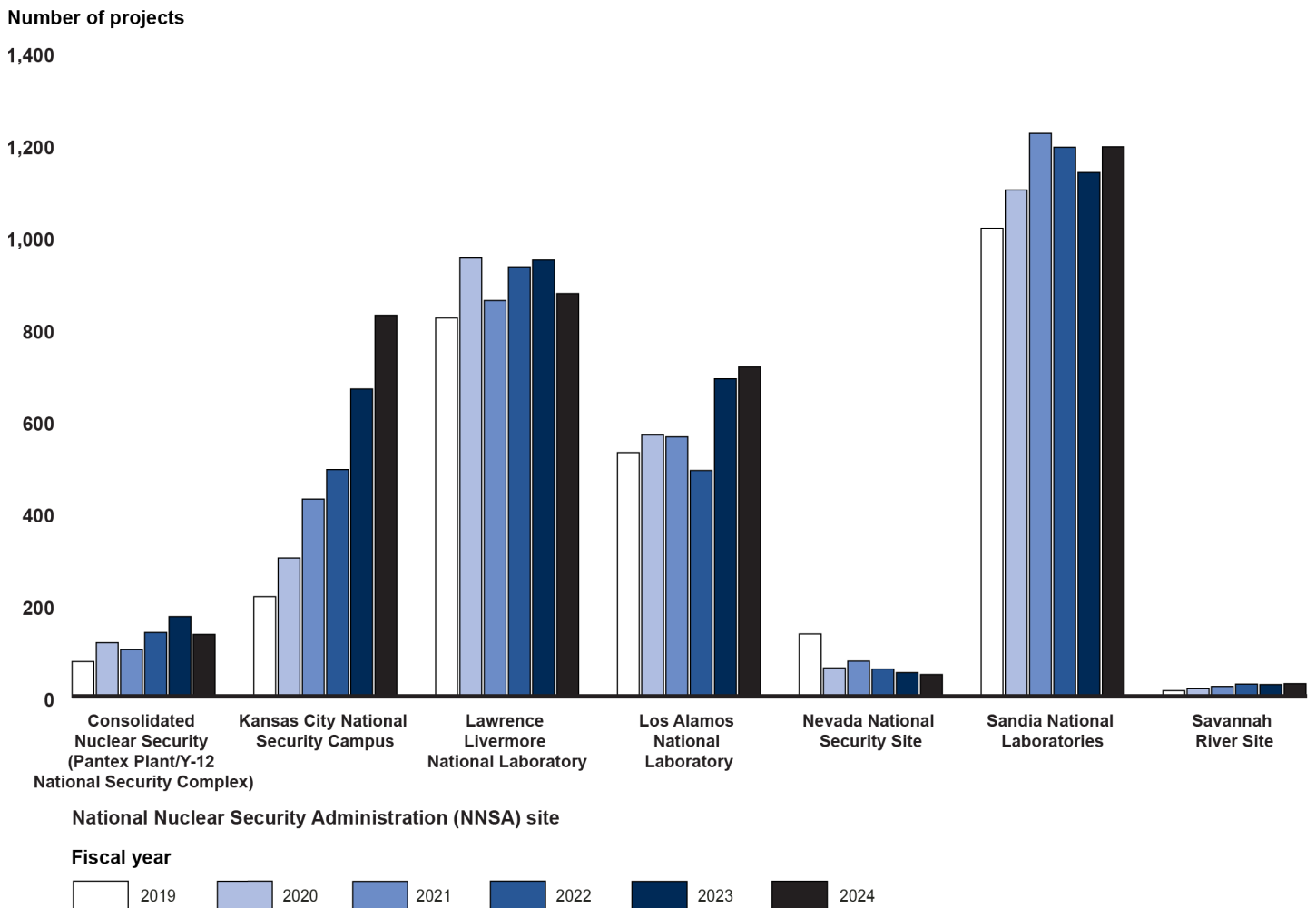


Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

Enterprise-wide, there were between 2,000 to 4,000 SPP agreements each year. Livermore consistently had the second-most behind Sandia, with 23 to 31 percent of the number of agreements enterprise-wide each year in fiscal years 2019 through 2024 (see fig. 9).

Figure 9: Annual Number of Strategic Partnership Agreements by NNSA Site, Fiscal Years 2019 Through 2024

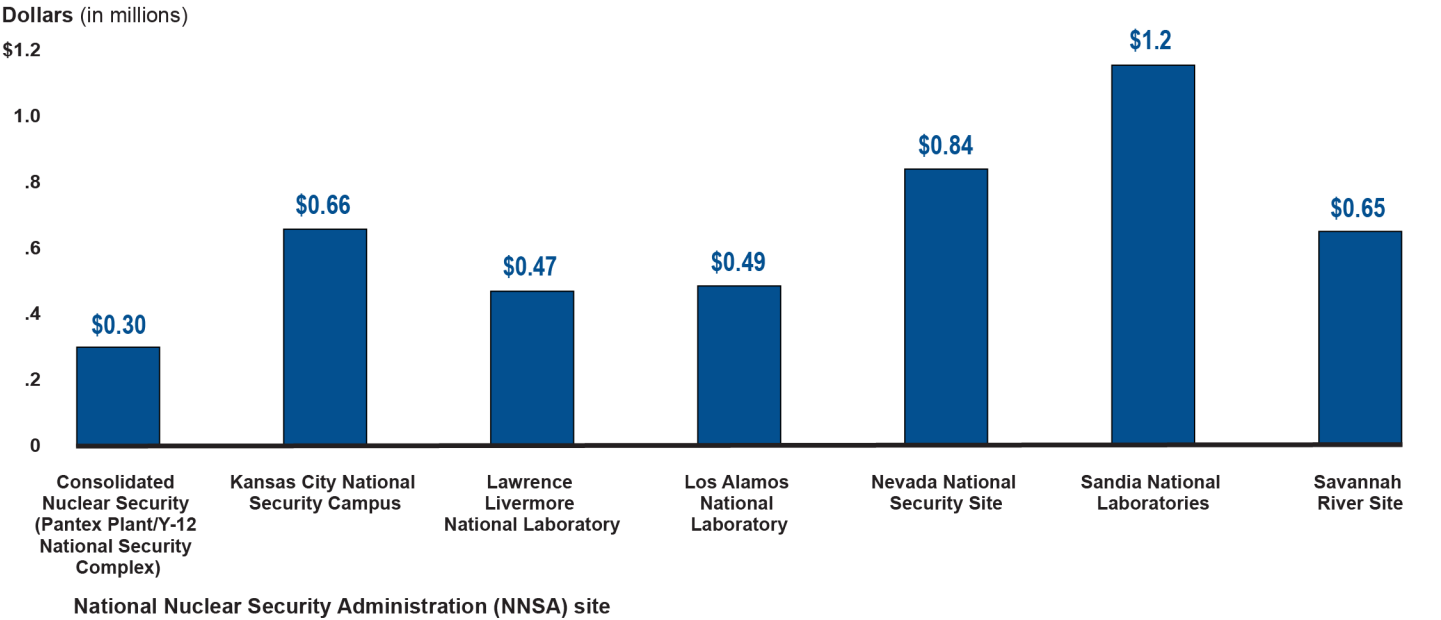


Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together. Officials from the Nevada Field Office said they processed a backlog of deobligations in 2019 for projects that had been completed in prior years, contributing to a higher number of agreements in the data for 2019 and leading to a larger decline in subsequent years.

Sandia also had the highest average reimbursed costs per SPP agreement. From fiscal year 2019 through 2024, Sandia had an average reimbursed cost per agreement above \$1 million each year (see fig. 10).

Figure 10: Average Reimbursed Strategic Partnership Project Cost per Agreement by NNSA Site, Fiscal Years 2019 Through 2024



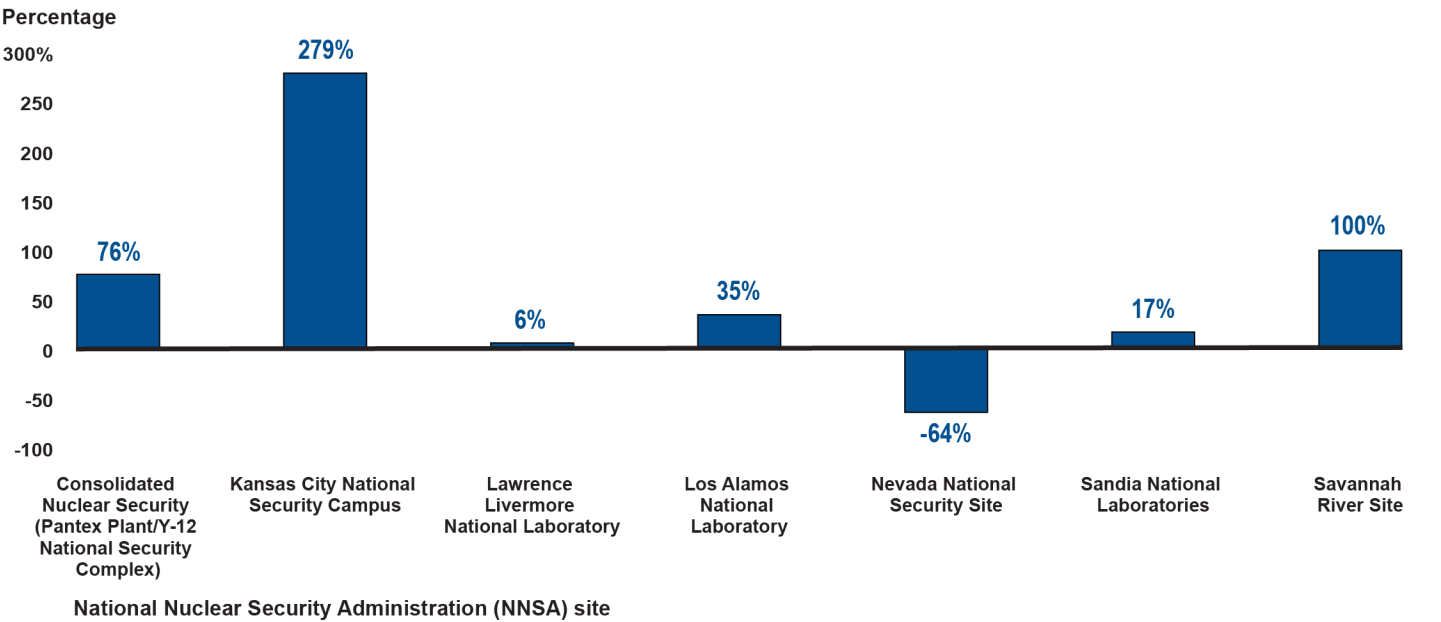
Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Dollars are in constant fiscal year 2024 dollars to account for inflation. Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

Kansas City Strategic Partnership Projects Grew While Other NNSA Sites Experienced Moderate or No Growth Compared with Mission Work

Kansas City experienced the most growth in SPP agreements and reimbursed costs since fiscal year 2019. From fiscal year 2019 through fiscal year 2024, Kansas City saw the most growth in the number of SPP agreements, with an increase of 279 percent from 219 agreements in fiscal year 2019 to 830 in fiscal year 2024. The Savannah River Site and combined Y-12 and Pantex sites were next with 100 and 76 percent growth, respectively (see fig. 11). During that time, NNSA experienced about 60 percent growth in its enterprise-wide budget, attributable in part to its increase in mission work.

Figure 11: Percentage Change in Number of Strategic Partnership Agreements at NNSA Sites, from Fiscal Year 2019 Through Fiscal Year 2024



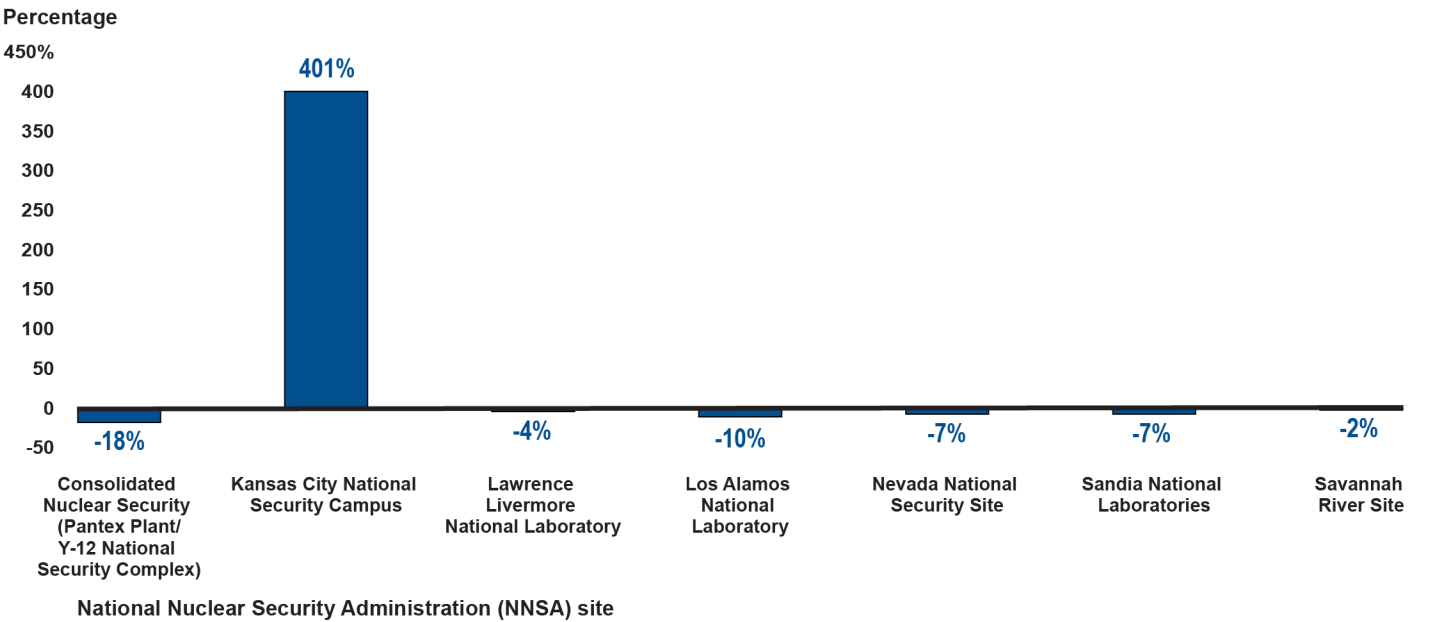
Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report the sites' data together. Officials from the Nevada Field Office said they processed a backlog of deobligations in 2019 for projects that had been completed in prior years, contributing to a higher number of agreements in the data for 2019 and leading to a larger decline in agreements in subsequent years. According to their calculations, without the deobligations, their decline for this period would have been 37 percent.

While the number of agreements at Nevada declined 64 percent, Nevada Field Office officials said they processed a backlog of deobligations in fiscal year 2019 for projects that had been completed in prior years. This contributed to a higher number of agreements in the data for 2019 and led to a larger decline in agreements in subsequent years. According to their calculations, without the deobligations, their decline through fiscal year 2024 would have been 37 percent.

Kansas City also saw the largest growth in the amount of reimbursed costs from fiscal year 2019 through fiscal year 2024 (see fig. 12). Kansas City performed work that resulted in an over 400 percent increase in reimbursed costs during that time. Other sites experienced a decrease in SPP reimbursed costs, when accounting for inflation.

Figure 12: Percentage Change in Strategic Partnership Projects’ Reimbursed Costs by NNSA Site, from Fiscal Year 2019 Through Fiscal Year 2024



Source: GAO analysis of NNSA data. | GAO-26-108229

Note: Dollars are in constant fiscal year 2024 dollars to account for inflation. Until October 31, 2024, the Pantex Plant (Pantex) and Y-12 National Security Complex (Y-12) were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites’ data together.

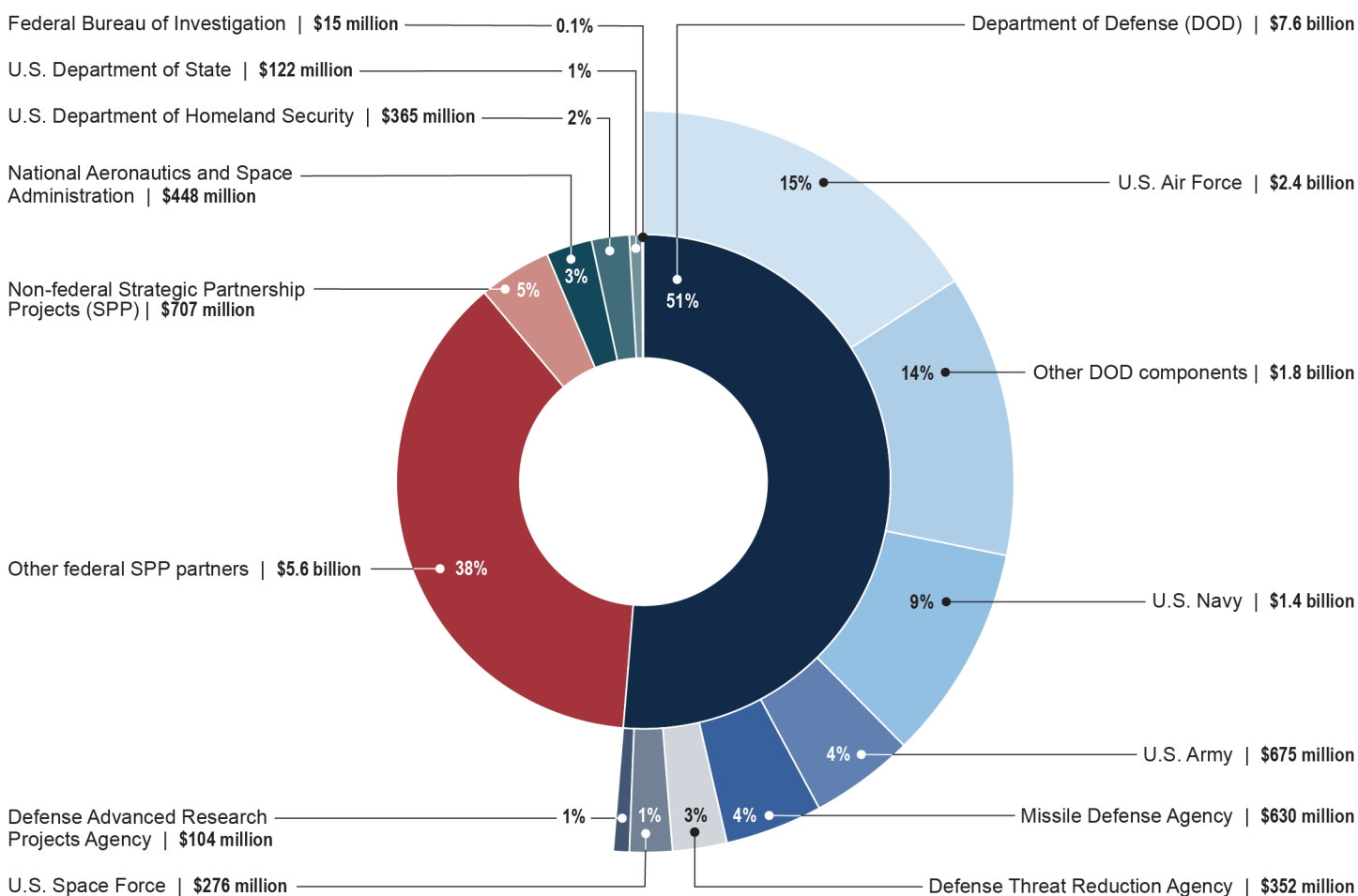
Kansas City officials and contractor representatives said SPP work has increased steadily at the plant over the last 2 decades, and they characterized the growth as controlled and moderate in comparison to the growth of the plant’s mission work. However, Kansas City’s funding from NNSA grew about 70 percent from fiscal year 2019 through fiscal year 2024. For example, Kansas City contractor representatives and NNSA officials said Kansas City provides sustainment support to the Air Force and Navy, ensuring systems achieve continued operational effectiveness and remain capable of meeting evolving mission requirements.

In addition, initial SPP work can often grow into larger orders from SPP partners, according to Kansas City officials and contractor representatives. For example, they had an SPP order that began as \$150,000 worth of work for a partner that eventually became over \$300 million in work in later years. Kansas City officials and contractor representatives said there is SPP work ongoing in weapons production and in the sensitive compartmented information facility.

DOD Sponsored the Most SPP Agreements, and NNSA Categorized Most SPP as Related to National Security

Of the more than 20,000 SPP agreements in fiscal years 2019 through 2024, DOD was the largest sponsor of SPP enterprise-wide, contributing \$7.6 billion, or about 51 percent, of the total value of SPP reimbursed costs (see fig. 13).

Figure 13: National Nuclear Security Administration Strategic Partnership Projects by Partner, Fiscal Years 2019 Through 2024

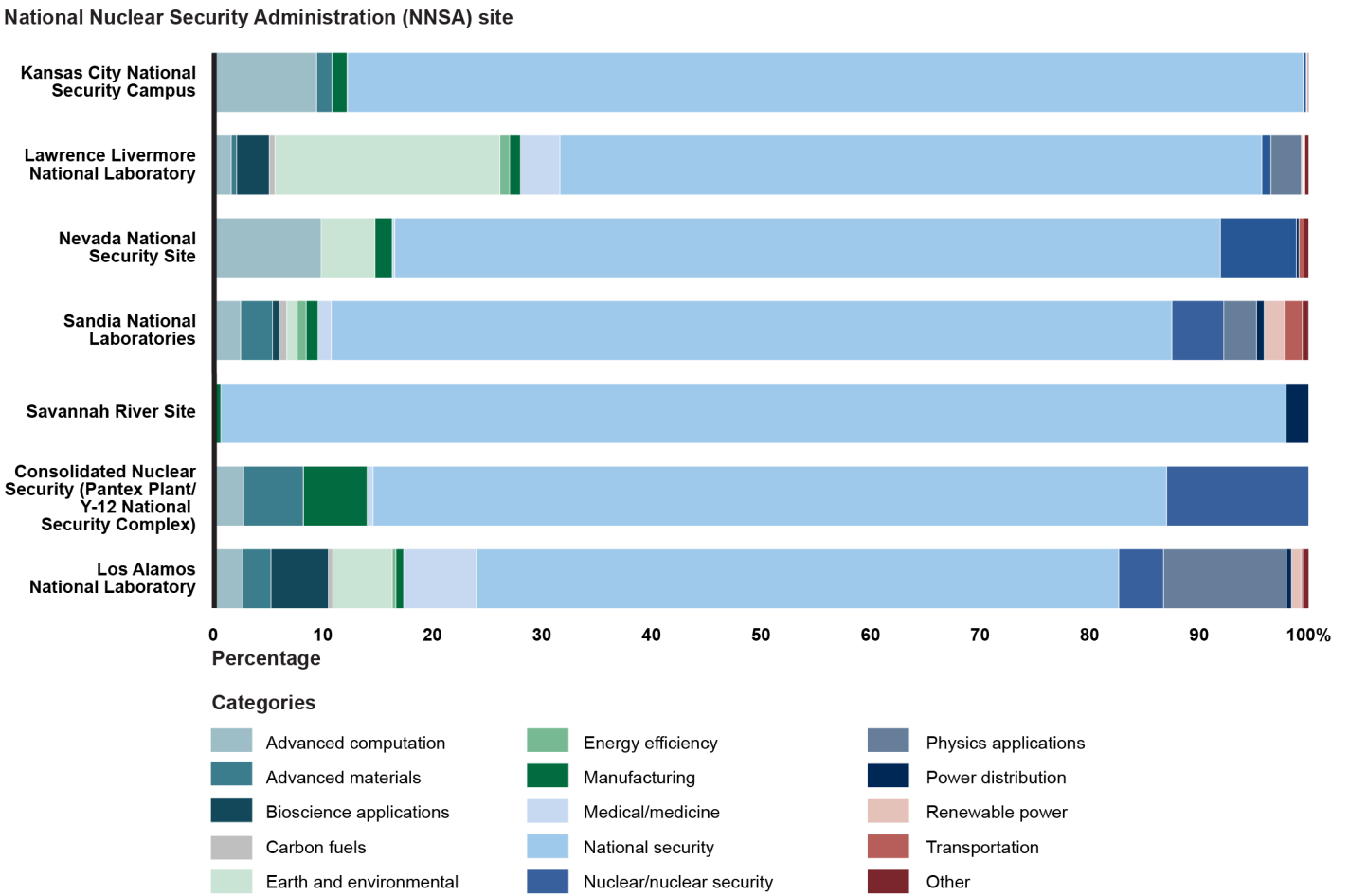


Source: GAO analysis of National Nuclear Security Administration information. | GAO-26-108229

Note: Dollars are in constant fiscal year 2024 dollars to account for inflation.

NNSA categorized most SPP agreements as related to national security (see fig. 14 for the full list of categories).²⁹ NNSA personnel at the sites apply categories to SPP projects based on their determinations of the SPP's scope.

Figure 14: Strategic Partnership Projects (SPP) by Category and Site, Fiscal Years 2019 Through 2024



Source: GAO analysis of NNSA data. | GAO-26-108229

²⁹NNSA assigns one of 21 categories to each SPP agreement, which allows SPP administrators to quantify the different types of SPP performed by NNSA. The categories include Advanced Computation, Earth and Environmental, Manufacturing, and Nuclear/Nuclear Security, among others. According to NNSA officials, the NNSA Office of Technology Transfer within the Office of Defense Programs established these categories to denote the commercial applications of DOE-funded research and development.

Note: We combined the Chemical Science, Cybersecurity, Engineering, Mining, and Risk Assessment categories into one "Other" category due to their small number of SPP. Until October 31, 2024, the Pantex Plant and Y-12 National Security Complex were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

Of the more than 20,000 SPP agreements across NNSA's sites in fiscal years 2019 through 2024, more than 14,400 of them (or approximately 72 percent) were categorized as national security, according to NNSA data we analyzed. Site by site, the amount of SPP categorized as national security can vary but constitutes the largest share of each site's SPP work. In fiscal years 2019 through 2024, NNSA categorized 50 to 87 percent of SPP at each site as related to national security.³⁰

NNSA Sites Conduct SPP Based on Capabilities or Statute, Providing Support for Mission Work or Additional Benefits

NNSA sites conduct SPP in part because NNSA's capabilities provide unique opportunities, sometimes otherwise unavailable, to SPP partners. NNSA sites also conduct some SPP due to statutory authorization, for either the special nuclear material involved or the special nature of the relationship between NNSA and the partner organization. SPP can provide benefits either directly to mission work or through additional opportunities for technical staff to enhance their skillsets, contributions to facilities and capabilities maintenance, and research insights. Any given SPP could exhibit one or more of these attributes, such as one project that uses a unique capability, is authorized by statute, directly supports NNSA's mission, and provides additional complementary benefits.

³⁰We found three SPP agreements at Savannah River Site that were reimbursements from communications infrastructure companies constructing capabilities on the Savannah River Site for electricity drawn from the site and costs associated with providing access to the site. As electricity transmission is excluded in the SPP Order, we asked NNSA about whether these projects were allowable under the order. NNSA headquarters legal counsel ultimately stated electricity transmission was only excluded as SPP if it was electricity generated by NNSA. The electricity for these SPP at Savannah River Site is not generated by NNSA but rather a corporate entity. NNSA officials later said they researched other mechanisms to collect the reimbursement from a non-federal entity and could not find a more suitable mechanism. In addition, NNSA officials also told us these projects were originally approved by the Office of Environmental Management, as NNSA took over management of the Savannah River Site from the Office of Environmental Management on October 1, 2024. NNSA officials and contractor representatives believe these SPP represent an atypical, but not prohibited, use of SPP. As a result, officials and representatives said they will continue to use SPP as a mechanism for collecting reimbursements in these cases going forward, barring their ability to find a different mechanism.

NNSA's Capabilities Provide Unique Opportunities to SPP Partners

NNSA's eight labs, plants, and sites have highly specialized capabilities unavailable elsewhere to SPP partners (see table 1). As a result, some SPP must be done using NNSA's capabilities, and those capabilities provide unique opportunities that attract work from SPP partners, according to SPP partners, NNSA officials, and contractor representatives. In addition, the SPP Order states that one of the objectives of SPP is to provide access to NNSA's highly specialized or unique facilities, services, or technical expertise.

Table 1: Examples of Highly Specialized Capabilities at National Nuclear Security Administration (NNSA) Sites

NNSA site	Example capabilities
Kansas City National Security Campus	Large sensitive compartmented information facility Classified machinery Advanced material manufacturing
Lawrence Livermore National Laboratory	High-energy density science High-performance computing Advanced material manufacturing Biosecurity/defense Munitions prototypes
Los Alamos National Laboratory	Quantum computing Weapons physics engineering Chemistry labs Satellite remote sensing Biosecurity/defense Munitions research Materials science
Nevada National Security Site	Remote sensing and radiological detection Unique emergency response training facility
Pantex Plant	Explosive ordnance disposal expertise High explosives manufacturing and testing High-consequence test equipment Weapon assembly/disassembly operations
Sandia National Laboratories	Microelectronics Radiation-hardened electronics and components Hypersonics Systems engineering and systems integration
Savannah River Site	Glovebox training
Y-12 National Security Complex	Uranium and lithium processing and applications Material supply expertise Training

Source: GAO analysis of NNSA data, documentation, and interviews. | GAO-26-108229

At Sandia, the Microsystems Engineering, Science and Applications (MESA) complex is a highly specialized capability often leveraged for SPP (see fig. 15). MESA integrates the numerous scientific disciplines necessary to produce microsystems technologies and functionality for critical national security platforms. According to Sandia contractor representatives and NNSA officials, MESA's areas of scientific and engineering expertise—for example, in silicon and compounds, device and product design, advanced packaging technologies for 3-D integration, reliability, and failure analysis—benefit other strategic partners and help meet specific microelectronics needs that would not be practical or profitable for industry to produce because, for example, the number of components to be produced is very small.

Figure 15: Aerial View of the Microsystems Engineering, Science and Applications Complex at Sandia National Laboratories

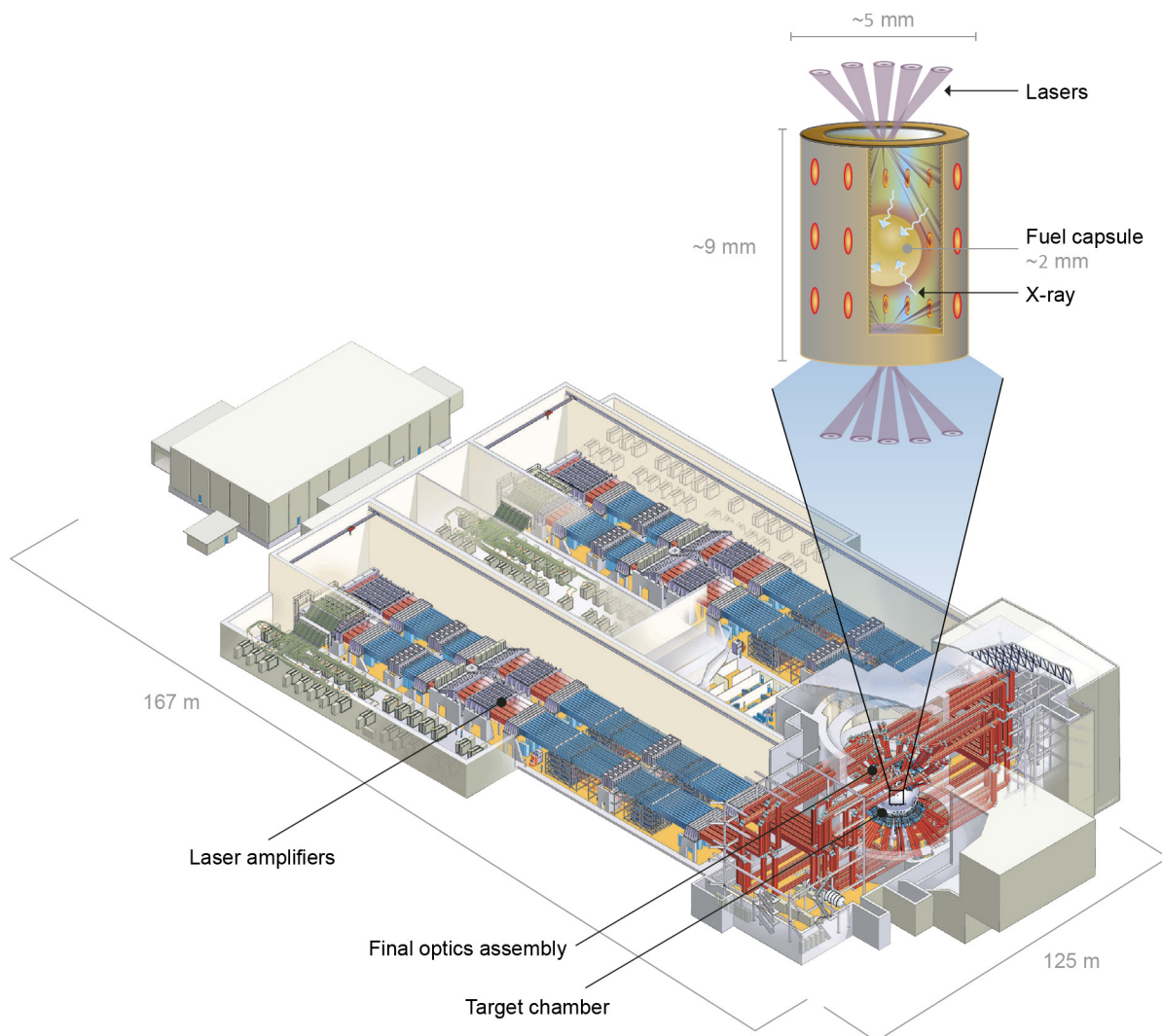


Source: Sandia National Laboratories. | GAO-26-108229

At Livermore, the National Ignition Facility (NIF) & Photon Science capability uses an approach known as laser indirect drive to conduct inertial confinement fusion experiments (see fig. 16). Inertial confinement fusion uses high-power lasers or electrical pulses to compress a small capsule of fusion fuel under extreme temperatures and pressures for a

short time.³¹ NIF is the first and only facility in the world to achieve ignition, where the system creates more energy than that used by the lasers to drive the fusion reaction.

Figure 16: Layout, Key Components, and Technology at the National Ignition Facility, Lawrence Livermore National Laboratory, California



Sources: Lawrence Livermore National Laboratory; National Nuclear Security Administration (facility) and GAO (detail). | GAO-26-108229

³¹GAO, *National Nuclear Security Administration: Improvements Needed for Managing Recapitalization of Fusion Facilities*, [GAO-25-107204](#) (Washington, D.C.: Sept. 5, 2025).

NIF was built to be able to perform nuclear weapons-relevant experiments but also offers unique opportunities to strategic partners for work in materials science and Direct-Laser Impulse.³² Direct-Laser Impulse allows two of NIF's lasers to be redirected simultaneously with a NIF shot to another chamber for further research and has been used by DOD. Livermore contractor representatives said they believe Direct-Laser Impulse is an example of an SPP that perfectly complements NNSA's mission. In addition, a private entity contracted with Livermore to perform capsule simulations to study and optimize target designs for a slightly different laser-driven fusion energy approach (fast ignition). This work scope exercised the codes in a different and creative way, according to Livermore contractor representatives.

NNSA Sites Conduct Some SPP for Statutory Reasons

NNSA is authorized by statute to conduct some SPP at its sites because of either the special nuclear material involved or the special nature of the relationship between NNSA and the partner organization.

For example, as described earlier, the Atomic Energy Act of 1954 authorizes DOE to make arrangements for the conduct of research and development activities related to special nuclear material for private and public institutions. As a result, DOE maintains the nation's capability to support the development, production, and safety of radioisotope power systems used by NASA. Radioisotope power systems produce power by converting heat from the natural radioactive decay of a radioisotope, such as plutonium-238, into electricity.³³ Los Alamos, along with contributions from other labs, designs and develops radioisotope power systems for NASA to generate reliable electrical power and heat energy for long-duration space missions, including missions to Mars. In addition to meeting the agency's statutorily designated role, contractor representatives and NNSA officials noted this work can have a positive impact on NNSA mission work through research insights. Specifically, Los Alamos contractor representatives said that civilian space SPP research can result in a foundational understanding of space weather that can inform core mission work at NNSA.

³²NIF operates 365 days per year and had an average shot rate of 337 shots per year from fiscal year 2020 through 2024. A "shot" is an instance when researchers fire the laser or pulsed power system and release energy into the experimental target chamber.

³³Historically, plutonium-238 was produced domestically or purchased from Russia. Domestic plutonium-238 production ended in 1988 but was restarted in 2011 at DOE's Oak Ridge National Laboratory in Oak Ridge, Tennessee. Oak Ridge National Laboratory ships the plutonium oxide to Los Alamos, which turns it into heat source pellets.

Some statutes have codified special relationships between NNSA and other federal agencies or international organizations. For example, as described earlier, the Homeland Security Act of 2002 provides DHS special access to NNSA nuclear sites to further DHS mission objectives and holds that DHS mission work is considered to have equal status with DOE mission work.³⁴ In fiscal years 2019 through 2024, Kansas City, Los Alamos, Livermore, Nevada, and Sandia all conducted SPP for the Department of Homeland Security. According to NNSA data, these sites conducted about \$323 million in reimbursed costs across 697 SPP agreements during that time. For example, DHS's Federal Emergency Management Agency reimbursed NNSA about \$130 million in fiscal years 2019 through 2024 for work at the Counter Terrorism Operations Support Center to detect and monitor nuclear threats such as radiological dispersal devices and improvised nuclear devices using multiple types of actual radioactive material. Because providing nuclear and radiological emergency response capabilities and training is a core NNSA mission, DHS-funded SPP work that must be done at Nevada because of the special nuclear material involved also supports NNSA's mission work.

The United States-IAEA Safeguards Agreement established a relationship between the U.S. government and the IAEA in the 1970s for the application of international safeguards. Sandia, for example, has provided support via SPP to the IAEA under that agreement. The international community relies on a regimen of monitoring technologies and inspections, called safeguards, to ensure that states honor their commitments to the peaceful use of nuclear materials pursuant to the Treaty on the Non-Proliferation of Nuclear Weapons.³⁵ Sandia's SPP work for the IAEA spans exploratory research, engineering design and development, systems engineering, simulation and modeling, test and evaluation, implementation, assessments, and training, which all also contribute to NNSA's mission of nonproliferation.

SPP Can Benefit NNSA Mission Work Directly

SPP can benefit NNSA mission work directly, according to NNSA data and interviews with officials and contractor representatives. In addition, the SPP Order requires that SPP be consistent with or complementary to NNSA mission work. NNSA officials and contractor representatives we interviewed said they ensure linkages to NNSA's core missions as part of their SPP planning, review, and acceptance processes. We also reviewed

³⁴Pub. L. No. 107-296, § 309(a)(2), 118 Stat. 2135, 2172 (codified at 6 U.S.C. § 189(a)(2)).

³⁵Treaty on the Non-Proliferation of Nuclear Weapons, July 1, 1968, 729 U.N.T.S. 161.

a non-generalizable sample of 13 SPP agreements, and, in each case, we found that SPP partners explicitly linked their projects to NNSA site missions and capabilities.

Many different types of SPP can support NNSA's core national security missions directly, according to NNSA officials and contractor representatives. As described above, NNSA categorized 72 percent of SPP in fiscal years 2019 through 2024 as national security projects, and an additional 3 percent as nuclear or nuclear security projects. NNSA officials and contractor representatives told us that SPP categorized as national security projects have a higher likelihood of being directly connected (i.e., consistent with, rather than just complementary) to NNSA mission work.

For example, in fiscal years 2019 through 2024, Consolidated Nuclear Security (Y-12 and Pantex) performed 755 SPP projects, of which 547 were categorized as national security. Most of those projects were related to construction or testing of nuclear weapons components for which DOD is responsible (such as components for the weapons systems that deliver warheads), training DOD personnel in armament use, and nuclear material recovery.³⁶

Some SPP may also be intertwined with NNSA mission work, thereby directly contributing to NNSA's mission. For example, Air Force SPP funds production of necessary fuzing components for nuclear weapon arming, fuzing, and firing systems at Kansas City. While another defense contractor could potentially produce the fuzing components, it is particularly efficient for Sandia to design and Kansas City to produce an integrated arming, fuzing, and firing system within their classified manufacturing space given the volume and weight requirements, according to Kansas City contractor representatives.

SPP Provide Additional Benefits Through Staff Retention, Facility Maintenance, and Research Insights

NNSA officials and representatives said SPP can also provide benefits through (1) increased staff recruitment, retention, and skillsets; (2) contributions to facility or capability maintenance; (3) by providing new research insights that NNSA can use to further its own mission work; and (4) by reducing NNSA's risk in early-stage research.

³⁶The production and delivery of nuclear weapons is accomplished through a collaborative relationship between NNSA and DOD. NNSA builds the weapons to DOD specifications and DOD builds the delivery platforms. As a result, the two agencies work closely together.

First, SPP contributes to staff recruitment and retention as additional research opportunities are attractive to scientists and researchers, according to contractor representatives and NNSA officials. In some cases, SPP provides relevant unclassified work staff can do while waiting for security clearances to come through. For example, representatives said Los Alamos talent acquisition programs are greatly enhanced by their SPP programs. Specifically, recruiting staff to work on NASA programs provides a way of recruiting for very specific science and technology skills from an uncleared national recruitment pool. That workforce may not have knowledge of national security missions and how their skills support those missions before they get to Los Alamos but after working on SPP, Los Alamos can recruit them for classified programs, representatives said.

Second, SPP funding allows sites to maintain facilities and capabilities that need to be kept continuously operational, even when there may be a lag in core mission work for NNSA. For example, Sandia's MESA facility uses SPP to fill in capacity and keep equipment running that is expensive to shut down and restart, according to Sandia contractor representatives. When SPP sponsors use these unique capabilities, they sometimes also make direct investments in the capabilities themselves, which, in turn, benefits NNSA's mission. For example, DOD invested millions of dollars in forensics lab equipment as part of its SPP work. The equipment eventually transferred to NNSA once the SPP work concluded. NNSA now uses the equipment for mission work.

Third, according to contractor representatives and NNSA officials, SPP drives research innovations that can also inform mission work. For example, at Sandia, SPP provided research insights into semiconductor development that NNSA was then able to use in production of certain components for joint test assemblies used for nuclear weapon flight tests.³⁷

Finally, SPP allows the reduction of risk around certain aspects of nuclear weapons research and development. For example, representatives from several sites said SPP allows sites to find another entity willing to pay for work or research that is risky or expensive, which can help them continue that research beyond initial stages. One official described this as "buying down their risk." Effectively, outside entities pay to conduct early-stage

³⁷Joint test assemblies are electronic units that contain sensors and instrumentation that monitor weapon hardware performance during flight tests to ensure that weapon components will function as designed.

research that may later benefit NNSA. Those benefits may include using technology from that early-stage research, having its researchers gain expertise from that research and later applying it to NNSA-funded research, or gaining experience with manufacturing and production processes that can later be utilized in NNSA programs.

Decreases in Strategic Partnership Projects Could Reduce the Ability to Execute NNSA and Partner Missions and Raise NNSA Costs

Decreases in NNSA sites' capacity for SPP could reduce NNSA's and its partners' ability to achieve their missions and result in NNSA paying more in indirect costs that are currently offset by SPP partners. Site representatives said they weigh potential SPP against their capacity to do the work, so any increases in SPP would be considered in a similar manner. Some site representatives said they believed they have additional capacity for increases in SPP, while other sites have limited capacity.

Decreases in SPP Could Negatively Affect NNSA and Partner Missions

Should NNSA and its sites' capacity to perform SPP decrease, NNSA and partner agency officials said their ability to execute their critical national security missions would be negatively affected. For example, NNSA site personnel said they need to maintain capabilities to support weapons and nonproliferation missions, but those capabilities are not necessarily utilized at all times. NNSA personnel can perform SPP to ensure those capabilities are maintained. Specifically, the MESA facility at Sandia includes equipment that is expensive to shut down and restart, which Sandia can prevent by conducting SPP on it during gaps in NNSA-funded activities, according to contractor representatives.

In cases where SPP directly supports NNSA missions, a decrease in SPP could negatively affect NNSA's ability to complete those missions, NNSA and partner agency officials said. For example, a core mission of NNSA's Office of Counterterrorism and Counterproliferation is responding to nuclear and radiological incidents and accidents worldwide. Through SPP, partners fund interagency nuclear incident response efforts such as nuclear material detection, disposal, and incident response training. One such project at the Nevada National Security Site, funded by the Federal Emergency Management Agency, trains first responders in responding to radiological incidents. This project received \$30,000 in SPP-reimbursed costs in fiscal year 2025, down from \$500,000 in previous years, according to Nevada contractor representatives. According to NNSA officials and contractor representatives, should SPP funding or capacity for nuclear incident response continue to decrease, NNSA would have to

find a new way to fund and provide these mission-critical nuclear incident response trainings and equipment to national security partners or the U.S. government's ability to respond to nuclear incidents could be affected.

Further, all nine SPP federal partners we spoke with said SPP was essential to their ability to complete their mission, and that, in many cases, NNSA's sites are the only providers of specific capabilities. For example, the Missile Defense Agency Advanced Payloads Office uses SPP at Sandia to conduct testing for hypersonic target vehicles, Missile Defense Agency personnel said. Without access to NNSA's equipment and facilities, the Missile Defense Agency's ability to test hypersonic capabilities would be significantly degraded, resulting in a reduction in its capabilities to support the warfighter and achieve its mission, according to agency officials.

Decreases in SPP Would Increase NNSA's Indirect and Maintenance Costs

SPP research and related activities increase the use of existing facilities and systems, reducing periods of inactivity and contributing to improved utilization of federally funded infrastructure, according to NNSA officials. SPP activities are generally conducted in the same specialized facilities and with the same equipment used for NNSA mission work. According to officials, facility maintenance and operational costs are shared across SPP and other DOE programs through site-specific cost allocation processes. The process is intended to ensure that costs at each site are distributed equitably among participating programs and that NNSA facilities remain operational and mission ready for all users, officials said.

These facilities and capabilities would be needed even without SPP work, so the shared funding of overhead helps defray NNSA's costs. SPP projects contribute to facility operation and maintenance. NNSA sites charge SPP customers a percentage of the project costs to pay for indirect costs (i.e., costs not readily attributable to one project but that contribute to the project's success, such as utilities, facility maintenance, and security) because NNSA is required to fully recover the costs of conducting SPP work. NNSA SPP partners paid about \$1.4 billion in indirect costs in fiscal year 2024, or about 52 percent of total SPP reimbursed costs. In fiscal year 2024, according to data provided by

NNSA, seven of the eight NNSA sites recovered 44 to 57 percent of total SPP reimbursed costs as indirect costs from SPP partners (see table 2).³⁸

Table 2: Indirect Costs Reimbursed by NNSA Strategic Partnership Projects (SPP), Fiscal Year 2024

	Total SPP reimbursed costs (sum of individual agreements)	SPP indirect costs	Indirect costs as a percentage of total SPP reimbursed costs
Kansas City National Security Campus	\$500,830,033.12	\$220,000,000	44%
Los Alamos National Laboratory	\$294,533,494.82	\$145,000,000	49%
Lawrence Livermore National Laboratory	\$408,841,652.96	\$184,000,000	45%
Nevada National Security Site	\$53,244,548.73	\$30,000,000	56%
Pantex/Y-12 ^a	\$37,775,634.49	\$20,000,000	53%
Sandia National Laboratories	\$1,349,439,363.06	\$769,000,000	57%
Savannah River Site	\$16,478,901.49	N/A ^b	N/A ^b
Total	\$2,661,143,628.67	\$1,368,000,000	52%

Source: GAO analysis of National Nuclear Security Administration (NNSA) data and documentation. | GAO-26-108229

^aUntil October 31, 2024, the Pantex Plant (Pantex) and Y-12 National Security Complex (Y-12) were managed together under one management and operating contract. After November 1, 2024, they were managed separately. For ease of presentation, we report both sites' data together.

^bNNSA was unable to provide indirect costs for Savannah River Site's SPP because the site was previously managed by DOE's Office of Environmental Management until 2024. As a result, the total percentage of indirect costs does not include the Savannah River Site.

SPP work allows NNSA personnel to recoup indirect costs and utilize their facilities more fully. DOE requires full cost recovery, meaning SPP partners are required to pay for all costs incurred by facilities in which NNSA site personnel conduct the SPP research.³⁹ Those costs include overhead costs (e.g., site support, program support, and administrative support) and safeguards and security, among others. Some of these costs would be incurred regardless of whether SPP projects used the facilities because they may remain active even when NNSA core missions are not using them.

Without SPP partners paying for the indirect costs associated with their research, NNSA would have to pay some of the almost \$1.4 billion in overhead and administrative costs they received from SPP in fiscal year

³⁸NNSA was unable to provide indirect costs for Savannah River Site's SPP because the site was previously managed by DOE's Office of Environmental Management until September 30, 2024. As a result, the total percentage of indirect costs does not include the Savannah River Site.

³⁹DOE Order 522.1A.

2024. As a result, SPP partners' funds reduce the indirect costs paid for NNSA's programs. If NNSA needed to decrease its SPP work, NNSA's costs would increase without the partners' contributions. NNSA officials also stated that SPP research and related activities increase the use of existing facilities and systems, reducing periods of inactivity and contributing to improved utilization of federally funded infrastructure.

Sites Weigh Potential Increases in SPP and the Ability to Advance NNSA and Partner Missions Against Capacity

Site representatives said they carefully weigh their ability to take on new SPP and would continue to do so if there were an increase in SPP. For example, Y-12 representatives said the potential impact of every new project is evaluated to ensure that NNSA's primary missions will not be placed at risk. In addition, Los Alamos representatives said they look at the lab's "credible capacity" to take on SPP work. We found that all sites included quality control checks in their acceptance process for the four main requirements of the SPP Order, which includes checking whether the SPP would place a detrimental future burden on NNSA resources.

Some NNSA officials and site representatives said they would be able to support an increase in SPP work. For example, Pantex contractor representatives said because SPP work is tied to weapons programs activities, if their weapons work increases as expected in the coming years, their ability to support SPP would increase as well, because they have capacity in their facilities.

Other sites suggested they might have to limit or said they have already limited SPP growth in the face of competing ongoing or growing mission work. For example, Livermore personnel told us they have successfully leveraged a certain diagnostic test data capability for SPP sponsors to such an extent that Livermore representatives said they must carefully limit SPP growth and manage sponsor expectations in this area, given future NNSA needs for this capability. Similarly, in response to increased NNSA work at the site, Los Alamos has decreased the rate of SPP acceptance in recent years. In particular, the increase in pit production work stresses infrastructure and personnel, representatives said. As a result, SPP project costs as a percentage of the total site costs at Los Alamos decreased from 8 percent in fiscal year 2020 to 6 percent in fiscal year 2024. Los Alamos representatives said they believe that further reduction in SPP could hurt their relationships with their sponsors, as well as impact their ability to execute core NNSA missions.

Agency Comments

We provided a draft of this report to NNSA, DHS, DOD, the Department of Health and Human Services, the Department of Justice, the Department of State, and NASA for review and comment. NNSA, DHS,

the Department of State, and NASA provided technical comments, which we incorporated as appropriate. DOD, the Department of Health and Human Services, and the Department of Justice did not have any comments.

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

If you or your staff have any questions about this report, please contact me at BawdenA@gao.gov. Contact points for our Offices of Congressional Relations and Media Relations may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.

//SIGNED//

Allison Bawden
Director, Natural Resources and Environment

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Appendix I: Objectives, Scope, and Methodology

This report examines (1) the extent to which National Nuclear Security Administration (NNSA) facilities have engaged in Strategic Partnership Projects (SPP) in recent years and how this work has changed over time; (2) why SPP work is conducted at NNSA sites and how SPP activities impact NNSA mission work; and (3) the potential effects on NNSA facilities and SPP partners should NNSA facilities need to rebalance SPP partnerships.

To address all three objectives, we conducted site visits to five of the eight NNSA sites: (1) the Kansas City National Security Campus in Kansas City, Missouri; (2) the Lawrence Livermore National Laboratory in Livermore, California; (3) the Los Alamos National Laboratory in Los Alamos, New Mexico; (4) the Nevada National Security Site in Mercury, Nevada; and (5) Sandia National Laboratories in Albuquerque, New Mexico. We selected these sites because they represent the majority (over 95 percent) of NNSA's SPP agreements and reimbursed costs enterprise-wide. We interviewed NNSA and contractor representatives on these site visits and in follow-up meetings about NNSA and contractor SPP activities, significant SPP partners at those sites, NNSA and contractor processes, and the overall management of NNSA's SPP activities. We reviewed NNSA and contractor processes and systems for accepting, conducting, and prioritizing SPP work. We also toured site facilities where SPP activities are conducted to better understand the capabilities NNSA sites have available to meet SPP partners' needs.

To describe the extent to which NNSA facilities have engaged in SPP in recent years and how this work has changed over time, we reviewed and analyzed data on the amount of work performed under the SPP program in total and by site in fiscal years 2019 through 2024 (the most recent and consistent data available, according to NNSA officials). Specifically, we analyzed the data to determine the total number of SPP agreements, total costs, site-specific data, SPP partners, as well as any trends in the data. We also obtained total costs incurred for each site in fiscal years 2021 through 2024. We analyzed the data to determine which SPP partners sponsored the largest amount of SPP by number of agreements and costs. We also analyzed the data to determine the number of projects across 21 NNSA project categories by number of agreements in total and by site. We adjusted all data into constant fiscal year 2024 dollars to account for inflation. To assess the reliability of these data, we (1) reviewed key documentation, such as NNSA's SPP handbook; (2) interviewed NNSA officials who oversee the data to understand how the data are collected and reported; and (3) conducted electronic testing for missing data or obvious errors. We also traced a judgmental sample of 13

agreements to their source approval documentation. We determined that the data were sufficiently reliable to describe the SPP performed at the sites.

To assess why SPP work is conducted at NNSA sites and how it impacts NNSA mission work, we reviewed documentation on unique capabilities at the different NNSA sites. We interviewed NNSA officials and contractor representatives to determine why SPP partners are choosing their sites, the extent to which SPP work impacts NNSA mission activities, and to identify other benefits or challenges from SPP work.

In addition, we selected a nongeneralizable sample of 13 SPP agreements across different categories, project size, and type of partner organization to determine how the projects are consistent with or complementary to NNSA missions and why they were conducted at NNSA sites. To do this, we reviewed the over 20,000 SPP project agreements in our data set, sorted the agreements by partner investment amount and identified six distinct categories of SPP project sizes based on reimbursed costs: (1) under \$10,000, (2) between \$10,000 and \$100,000, (3) between \$100,000 and \$1 million, (4) between \$1 million and \$10 million, (5) between \$10 million and \$100 million, and (6) greater than \$100 million. We then reviewed the project categories, statements of work, and partner names to select a diverse sample. The selected project agreements are not generalizable to the total body of SPP projects. However, they do represent various uses of SPP across governmental and nongovernmental partners and across the range of project values. We then reviewed the project approval documentation and interviewed selected SPP partners to determine how the projects are consistent with or complementary to NNSA missions.

To assess the potential effects on NNSA facilities and SPP partners should NNSA facilities need to rebalance SPP partnerships, we interviewed NNSA personnel to determine the extent to which changes in the amount of SPP work would affect the NNSA sites' ability to perform their mission. We reviewed and analyzed data on the indirect costs SPP partners provide NNSA to conduct the SPP work to determine the extent to which NNSA's costs could increase without SPP funding. We also interviewed selected SPP partners from our judgmental sample and other SPP partners to determine any benefits or challenges SPP work presents for them.

We conducted this performance audit from April 2025 to September 2026 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.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Allison Bawden, BawdenA@gao.gov

Staff Acknowledgments

In addition to the contact named above, Ryan Gottschall (Assistant Director), Jessica Lewis (Analyst in Charge), Ava Elaine Hartwell Bagley, Kevin Bray, Frank Garro, Serena Lo, Alec McQuilkin, Gelsey Mehl, and Alicia White made key contributions to this report.

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