U.S. DEPARTMENT OF ENERGY

Office of Inspector General

DOE-OIG-26-24 March 24, 2026

Additional Actions Would Help the National Nuclear Security Administration Realize Guaranteed Savings Through Its Energy Savings Performance Contract With Siemens Government Technologies Inc. at the Pantex Plant

AUDIT REPORT

Department of Energy
Washington, DC 20585

March 24, 2026

MEMORANDUM FOR THE UNDER SECRETARY FOR NUCLEAR SECURITY; AND THE ADMINISTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION

SUBJECT: Audit Report: *Additional Actions Would Help the National Nuclear Security Administration Realize Guaranteed Savings Through Its Energy Savings Performance Contract With Siemens Government Technologies Inc. at the Pantex Plant*

The attached report discusses our audit of whether the National Nuclear Security Administration's Pantex Plant realized the guaranteed savings with Siemens Government Technologies, Inc. under contract No. DE-NA0001628. Management concurred with our recommendations.

We conducted this audit from October 2024 through December 2025 in accordance with generally accepted government auditing standards. We appreciated the cooperation and assistance received during this audit.

Sarah Nelson
Assistant Inspector General
for Management
Performing the Duties of the Inspector General
Office of Inspector General

cc: Deputy Secretary
Chief of Staff

DOE-OIG-26-24

DOE OIG HIGHLIGHTS

Additional Actions Would Help the National Nuclear Security Administration Realize Guaranteed Savings Through Its Energy Savings Performance Contract With Siemens Government Technologies Inc. at the Pantex Plant

Why We Performed This Audit

Energy Savings Performance Contracts (ESPCs) are contracts between a Federal agency and an energy service company that allow the agency to improve energy efficiency at no direct cost to the U.S. Treasury. ESPCs include energy conservation measures, which are upgrades to equipment intended to save energy and associated costs.

In 2013, the National Nuclear Security Administration (NNSA) awarded an ESPC to Siemens Government Technologies, Inc. (Siemens) to construct the Pantex Renewable Energy Project in Amarillo, Texas. The Office of Inspector General has issued several audit reports identifying weaknesses in the Department of Energy's oversight of ESPCs.

We conducted this audit to determine whether NNSA's Pantex Plant realized the guaranteed savings with Siemens under contract No. DE-NA0001628.

What We Found

We found that NNSA did not realize its planned guaranteed savings from the ESPC with Siemens. Specifically, we found that NNSA's original estimated savings were based on escalating wholesale rates for exported power; however, the rates decreased substantially shortly after the Pantex Renewable Energy Project became operational. Additionally, NNSA could not fully use the power generated by Pantex Renewable Energy Project throughout the Pantex Plant and instead sold power back to the local utility provider, sometimes at a loss.

Finally, NNSA permitted the maintenance contracts for the wind turbines to expire and made payments to Siemens that exceeded reported savings. As a result, the Federal Government paid a total of $21,187,829 for a 10-year period of guaranteed savings that it could not verify it received.

What We Recommend

To address the issues identified in this report, we have made three recommendations that, if fully implemented, should help improve NNSA's management of ESPCs.

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Background and Objective

The National Nuclear Security Administration (NNSA) uses Energy Savings Performance Contracts (ESPCs) to help reduce the overall energy used at sites run by its management and operating contractors. ESPCs are contracts between a Federal agency and an energy service company and allow a Federal agency to undertake energy savings projects without first obligating capital funds or requesting special Congressional appropriations. These projects incorporate energy saving measures, which are upgrades to equipment and controls intended to save energy and associated costs. Under ESPCs, energy service companies guarantee that the savings generated will cover the costs of a project over the term of the contract. The Federal agency pays for the contract using the savings generated from the project and keeps all additional cost savings after the contract ends.

In 2013, NNSA awarded an ESPC to Siemens Government Technologies, Inc. (Siemens), valued at approximately $53 million, to construct the Pantex Renewable Energy Project (PREP), a wind energy system at the Pantex Plant (Pantex), located in Amarillo, Texas. According to the performance work statement, the scope of the ESPC included installation of a wind farm using five 2.0–3.0-megawatt wind turbines and associated equipment, with an annual energy production to: (1) serve a portion of Pantex's electrical demand and (2) sell excess energy to the local utility company. Under the award terms, NNSA would pay Siemens directly from the value of guaranteed energy savings[1] generated by the wind turbines, an amount expected to average $2.8 million annually. The contract required PREP to generate approximately 47 million kilowatts of electricity annually, or about 60 percent of the electricity used for Pantex operations.

The electrical distribution system at Pantex consists of a North Main Substation (NMS) and a South Main Substation (SMS). From June 2014 through December 2024, the wind turbines were only connected to the SMS.

We conducted this audit to determine whether Pantex realized the guaranteed savings with Siemens under contract No. DE-NA0001628.

Results of Review

NNSA DID NOT REALIZE GUARANTEED COST SAVINGS FROM PREP

We found that NNSA did not realize its planned guaranteed savings from its contract with Siemens. NNSA's contract states that the guaranteed savings are based on the amount of power delivered to the meter inside Pantex, rather than the amount of power actually consumed within Pantex or credited to NNSA based on power exported to the public utility at wholesale rates. NNSA did not realize its planned savings because: (1) NNSA's original estimated savings were based on escalating wholesale rates for exported power—however, the rates decreased substantially shortly after PREP became operational; and (2) NNSA could not fully use the power generated by PREP throughout Pantex because the system was not connected to the NMS—therefore, PREP could only deliver power to a portion of Pantex and instead sold power

[1] An energy service company must provide a guarantee to the Federal agency that the improvements will generate annual energy savings sufficient to pay for the project over the ESPC's term.

back to the local utility provider, sometimes at a loss. Further, NNSA permitted the maintenance contracts for the wind turbines to expire and payments made to Siemens exceeded reported savings.

NNSA's Estimated Savings Did Not Account for Changes in Energy Costs

NNSA used electricity rates in the estimated savings for selling electricity to the public utility that were significantly higher than the rates realized in the years following PREP's completion. Specifically, NNSA based part of its projected cost savings on 2012 electricity rates. However, a 2016 *Technical Memorandum Pantex Plant Wind Farm – Review of Operations Informational Paper* (Technical Memorandum)[2] concludes that the calculations NNSA used to support the expected cost savings in the business case for PREP were based on rates that decreased markedly after NNSA's initial projections. The Technical Memorandum identifies that the Federal Government took all risk associated with the forecasted electrical rate prices, which was the basis for calculating the cost savings associated with PREP production and excess electricity sold to the utility company. Although NNSA was aware that the rates used in its original business case were inaccurate after just 2 years, NNSA did not update its projected savings or consumption targets.[3]

NNSA Could Not Use PREP Power Throughout Pantex and Sold Excess Energy at a Loss

NNSA did not structure its contract with Siemens to require delivery of wind-generated electricity to both the NMS and SMS. A portion of NNSA's projected energy savings was expected to be derived from PREP providing electricity to Pantex and selling excess electricity to the public utility provider for use on the commercial grid. However, for more than 10 years following the completion of PREP, the system was not connected to the NMS. This meant that PREP could only deliver power to a portion of Pantex, with excess electricity exported and sold to the public utility provider, sometimes at a loss.

Siemens' plan projected that 92 percent of the energy generated by PREP would be consumed at Pantex, with the remaining 8 percent exported to the utility company. Siemens also planned for and reported an average annual electricity generation of 47 million kilowatt-hour (kWh) yearly[4] from the wind turbines. However, Pantex never consumed the amount of PREP-generated electricity outlined in the plan, largely because the NMS remained unconnected to PREP. For example, the Technical Memorandum finds that Pantex consumed only 39.5 percent (or 17.4 million kWh) of PREP-generated power, and the remainder was sold to the utility company. In fact, the 2016 Technical Memorandum reports that the credits NNSA received for excess energy sales for the 12 months ending in June 2016 were 98 percent less than the business case expectations.

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[2] The 2016 Technical Memorandum analyzes PREP's results for a 12-month period ending in June 2016. Neither the Department of Energy nor NNSA could tell us who requested the analysis.

[3] NNSA provided the OIG with the historical rate information from January 2015 through June 2023; however, we tested its reliability and determined the data was unreliable due to NNSA's inability to provide the source of the information.

[4] Siemens reported annual electricity generation was reasonably in line with the business case expectation NNSA developed for PREP.

We found the amount of electricity consumed by Pantex since 2016 was generally consistent with the findings in the Technical Memorandum, reinforcing the Technical Memorandum's conclusion that PREP would be operating at a higher cost than originally expected.

Additionally, even though NNSA did not connect PREP to the NMS until July 2025, it could have included contract stipulations or modifications to help offset the cost of exporting and importing electricity to/from the public utility provider. However, NNSA did not include a contract requirement ensuring that the wind-generated energy sold to the local utility provider would be credited across both substations. According to the electrical engineer onsite, NNSA relied on a verbal agreement with the utility provider that wind-generated energy would be credited across both substations; however, the verbal agreement was not honored by the utility company. Therefore, the electricity delivered to the SMS that was unused by Pantex was sold back to the utility provider at a wholesale rate while the electricity used at the NMS had to be purchased at a higher retail rate. The lack of a documented agreement contributed to PREP generating less energy savings than NNSA expected.

The Wind Farm Was Inoperable From January 2025 Through June 2025 and NNSA's Payments to Siemens Exceeded Savings

NNSA permitted the maintenance contracts for the wind turbines to expire and made payments to Siemens that exceeded the reported savings. In December 2024, NNSA allowed the maintenance contract for the wind farm and associated infrastructure to expire, even though the guaranteed savings associated with PREP under the ESPC extend through 2032. In January 2025, the wind turbines stopped operating,[5] and the outage continued through June 2025. NNSA cited a lack of maintenance personnel contracted to work on the wind turbines, and while PREP was not operating, NNSA was required to purchase all its electricity. However, the current ESPC does not adjust NNSA's payment schedule or amount owed based on downtime. Therefore, if NNSA does not modify the contract to adjust payments in cases when PREP is not operational, NNSA may pay Siemens as much as $1,371,961 for unrealized savings for the period from January 2025 through June 2025 when PREP did not provide any power to Pantex (annual payments average $2.8 million).

In addition, NNSA's payments to Siemens ($21,187,829) from 2014 through 2024 exceeded the reported contract savings ($20,933,713) by $254,116. The contract stipulated that scheduled payments would be based on meeting the guaranteed savings. As permitted by the contract, Siemens adjusted the guaranteed savings based upon wind speed; however, NNSA did not similarly adjust the scheduled payments made to Siemens.[6] Although $254,116 is a permissible cost per the contract's performance work statement, NNSA should have adjusted the payments in accordance with the contract, accounting for lower-than-expected yields due to wind variations.

[5] In December 2024, NNSA directed PanTeXas Deterrence to carry out all aspects of the wind farm maintenance no later than March 31, 2025.
[6] The adjusted guaranteed savings is based on the actual windspeeds measured for each performance year.

CONCLUSION

NNSA's PREP at Pantex delivered on its projected electricity output through December 2024. However, it did not yield the expected guaranteed cost savings because estimated savings failed to account for changes in energy costs, and NNSA did not connect the wind turbines to the NMS until July 2025. Additionally, NNSA did not balance credits for exporting power from the SMS onto the public power grid and importing power to the NMS from the grid. Even though NNSA knew about these issues since at least 2016, it did not take action.

Due to NNSA's ineffective contract design and management of the Siemens' ESPC, the Federal Government paid $21,187,829 over a 10-year period for guaranteed savings that it could not verify it received. Additionally, NNSA could not demonstrate if the electricity generated by the wind turbines were lowering the utility payments by the contracted guaranteed savings amounts. Under the ESPC, PREP should be delivering guaranteed savings to Pantex for at least 7 more years. Going forward, additional actions by NNSA could help ensure savings are realized.

Recommendations

We recommend the Director, Partnership and Acquisition Services, NNSA, and Manager, Pantex Field Office, NNSA:

1. Evaluate its options for the Siemens contract to optimize PREP generated savings;

2. Verify a maintenance contract exists for the duration of the ESPC; and

3. Ensure guaranteed savings annual payments do not exceed the Siemens' reported annual savings.

Management Comments and OIG Response

Management concurred with our recommendations and proposed and/or completed responsive corrective actions to address the reported issues. For Recommendation 1, management stated it has taken several actions to optimize PREP-generated savings, including installing a redundant line between the NMS and SMS, transitioning maintenance responsibilities to the Pantex management and operating contractor, and updating contract oversight procedures to ensure that payments to Siemens are adjusted when appropriate. For Recommendation 2, management stated requirements for wind farm maintenance are included in the management and operating contract for the Pantex Plant. For Recommendation 3, management stated it will reduce payments in accordance with the contract's terms and conditions when guaranteed savings shortfalls are identified because of lower-than-expected yields due to wind variations.

Management's comments are included in Appendix 3.

Objective, Scope, and Methodology

Objective

We conducted this audit to determine whether the National Nuclear Security Administration's (NNSA) Pantex Plant (Pantex) realized the guaranteed savings under Siemens Government Technologies, Inc. contract No. DE-NA0001628.

Scope

The audit was performed from October 2024 through December 2025 at Pantex in Amarillo, Texas, and other locations, as required. We reviewed the guaranteed savings reported from fiscal year (FY) 2014 through FY 2023 for the five wind turbines of the Energy Savings Performance Contract No. DE-NA0001628 at Pantex. The audit was conducted under Office of Inspector General project number A24LV013.

Methodology

To accomplish our audit objective, we:

- Reviewed applicable policies, procedures, laws, regulations, and Federal Energy Management Program best practices related to the administration of Energy Savings Performance Contracts from FY 2013 through FY 2024;
- Reviewed all contract modifications for contract No. DE-NA0001628 from FY 2013 through FY 2024;
- Reviewed the Measurement and Verification Reports performed by Siemens Government Technologies, Inc. from FY 2014 through FY 2023;
- Conducted a site visit to Pantex;
- Interviewed key personnel from NNSA and PanTeXas Deterrence, LLC;
- Reviewed utility bills for cost savings and electricity purchased from FY 2014 through FY 2024;
- Reviewed Siemens Government Technologies, Inc.'s invoices and associated NNSA's payment information; and
- Reviewed *Technical Memorandum Pantex Plant Wind Farm – Review of Operations Informational Paper* (September 2016).

Appendix 1

We conducted this performance audit 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions. Accordingly, we assessed the risk assessment component and the underlying principle of assessing fraud risk. We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the internal control components of control activities, monitoring, control environment, and risk assessment, as well as the underlying principles of exercise oversight responsibility, remediate deficiencies, implement control activities, and identify, analyze, and respond to risk. However, because our review was limited to these internal control components and underlying principles, it may not have disclosed all internal control deficiencies that may have existed at the time of this audit. We assessed the reliability of data needed to answer the audit objective by comparing data received to its original source data. We determined that the support for the data used in the report was sufficiently reliable.

Management officials waived an exit conference on February 24, 2026.

Prior Reports

Office of Inspector General

- Audit Report: *The National Nuclear Security Administration's Energy Savings Performance Contract with NORESCO, LLC at the Pantex Plant* (DOE-OIG-24-23, July 2024). We found the guaranteed savings identified in the NORESCO, LLC Energy Savings Performance Contract (ESPC) did not reflect the site conditions at the Pantex Plant. For example, the NORESCO, LLC reported savings improperly included energy savings for buildings that had been demolished or sold. Although NORESCO, LLC identified noncompliant site conditions in its annual reports, the National Nuclear Security Administration's (NNSA) contracting office did not take action to update the contract to address the site changes. This occurred because of inadequate oversight of the contract. Repeated changes to NNSA contracting office personnel responsible for oversight of the Pantex Plant's ESPC resulted in oversight personnel being unaware of site conditions. As a result of our audit findings, the current NNSA contracting officer took immediate action to begin addressing our concerns during the audit.

- Inspection Report: *Los Alamos National Laboratory Steam Plant Energy Savings Performance Contract – Phase One* (DOE-OIG-22-26, February 2022). We found that NNSA could not support $75 million of the $128 million in guaranteed cost savings identified in the Los Alamos National Laboratory (LANL) Steam Plant ESPC – Phase One. Specifically, the Los Alamos Field Office: (1) could not provide documentation to support that the operation and maintenance labor savings would be realized, putting $32 million in guaranteed energy savings at risk; (2) had documentation to support the initial electric baseline rate used to determine the guaranteed energy savings of the ESPC—however, declines in the electric rates before the contract was finalized put approximately $31 million in guaranteed energy savings at risk; and (3) could not provide sufficient documentation to support the 3 percent electric escalation rate used in the investment grade audit, putting an additional $12 million in guaranteed energy savings at risk.

- Audit Report: *National Nuclear Security Administration's Energy Savings Performance Contracts* (DOE-OIG-18-07, November 2017). We found that LANL and the Y-12 National Security Complex did not always achieve the full energy savings under their ESPCs. Specifically: (1) NNSA entered into an ESPC at LANL, which called for the installation of energy saving lighting equipment that was not installed; (2) NNSA paid an energy service company the full contracted amount even though the company reported that it failed to meet guaranteed savings; (3) LANL used different thermostat settings than what the ESPC specified for several buildings, resulting in NNSA not achieving the full savings from completed thermostat upgrades; and (4) a Y-12 National Security Complex ESPC did not achieve the full savings from one of its energy saving measures that involved reconnecting a condensate return system in a facility.

- Audit Report: *Energy Savings Performance Contract Review Board* (OAI-L-16-04, December 2015). We found that some sites were reluctant to submit ESPC proposals to the ESPC Review Board because of concern over procurement sensitive information. We suggested action for the Sustainability Performance Office to clarify and communicate the Review Board's responsibilities and processes to Department of Energy program offices and sites for protecting ESPC procurement sensitive information.

Management Comments

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

February 13, 2026

MEMORANDUM FOR THE SENIOR OFFICIAL PERFORMING THE DUTIES OF INSPECTOR GENERAL

FROM: BRANDON M. WILLIAMS

SUBJECT: Response to the Office of Inspector General (OIG) Draft Report, *Additional Actions Will Help the National Nuclear Security Administration Realize Guaranteed Savings through its Energy Savings Performance Contract with Siemens Government Technologies, Inc. at Pantex Plant* (A24LV013)

Thank you for the opportunity to review and comment on the subject draft report. The National Nuclear Security Administration (NNSA) appreciates OIG's thorough review of our Energy Savings Performance Contract for the Pantex Renewable Energy Project (PREP), a wind energy system at the Pantex Plant (Pantex). We agree that opportunities exist to optimize PREP generated savings. Accordingly, since the time of audit, Pantex has installed a redundant line between the North and South substations at PREP, allowing Pantex to optimize use of the power generated at PREP and reducing the need to sell power back to a local utility provider. Maintenance responsibilities have been transitioned to the Pantex management and operating contractor, and contract oversight procedures have been updated to ensure that payments to Siemens are adjusted when appropriate.

The attached management decision provides NNSA's responses to the three recommendations contained in the audit report. Our subject matter experts have also provided technical comments under separate cover to enhance the accuracy and clarity of the report. If you have any questions regarding this response, please contact Ms. Jessica Juneja, Acting Director, Audits and Internal Affairs, at (202) 220-4654.

Attachment

NATIONAL NUCLEAR SECURITY ADMINISTRATION
Management Decision

Additional Actions Will Help NNSA Realize Guaranteed Savings through its ESPC with Siemens Government Technologies, Inc. at Pantex Plant (A24LV013)

The Office of Inspector General (OIG) recommends the National Nuclear Security Administration (NNSA):

Recommendation 1: Evaluate its options for the Siemens contract to optimize PREP generated savings.

Management Response: Concur. NNSA has taken several actions to optimize Pantex Renewable Energy Project (PREP) generated savings, including installing a redundant line between the North and South substations, transitioning maintenance responsibilities to the Pantex management and operating (M&O) contractor, and updating contract oversight procedures to ensure that payments to Siemens are adjusted when appropriate. The Pantex Field Office (PFO), in coordination with NNSA's Office of Partnership and Acquisition Services (NA-PAS), will monitor these actions throughout 2026 to determine the impact on PREP generated savings, and will evaluate available options to further optimize savings, if necessary. PFO and NA-PAS will document this evaluation and the resulting path forward by March 31, 2027.

Recommendation 2: Verify a maintenance contract exists for the duration of the ESPC; and,

Management Response: Concur. Requirements for wind farm maintenance are included in the current M&O contract for the Pantex Plant. PFO formally approved the M&O contractor's proposal for wind farm maintenance in December 2024, and the M&O contractor assumed responsibility for all aspects of wind farm maintenance in March 2025. NNSA considers this recommendation closed.

Recommendation 3: Ensure guaranteed savings annual payments do not exceed the Siemens' reported annual savings.

Management Response: Concur with clarification. While the scheduled payments can only be modified when Siemens is at fault for not realizing the guaranteed savings, NNSA will monitor the contract to ensure measurement and verification results are consistent with the reported guaranteed savings. Specifically, NA-PAS created a Measurement and Verification checklist for Energy Savings Performance Contracts to ensure contracting personnel review the Measurement and Verification reports and document any impact on the guaranteed savings. If shortfalls are identified because of lower-than-expected yields due to wind variations, NA-PAS will reduce payments in accordance with the contract Terms and Conditions. NNSA considers this recommendation closed.

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