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March 24, 2026

Opportunities Exist to Improve the Department of Energy's Oversight of Demonstration and Deployment Projects



AUDIT REPORT



Department of Energy
Washington, DC 20585

March 24, 2026

MEMORANDUM FOR THE PRINCIPAL DEPUTY ASSISTANT SECRETARY,
OFFICE OF NUCLEAR ENERGY

SUBJECT: Audit Report: *Opportunities Exist to Improve the Department of Energy's Oversight of Demonstration and Deployment Projects*

The attached report discusses our audit of the Carbon Free Power Project, LLC. This report contains five recommendations that, if fully implemented, should help ensure that current and future Office of Nuclear Energy projects are effectively managed. Management concurred with four recommendations and nonconcurred with one recommendation.

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

A handwritten signature in cursive script that reads "Sarah Nelson".

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 HIGHLIGHTS

Opportunities Exist to Improve the Department of Energy's Oversight of Demonstration and Deployment Projects

Why We Performed This Audit

The Department of Energy's Office of Nuclear Energy (Nuclear Energy) awarded a \$1.36 billion cost-share financial assistance award to the Carbon Free Power Project, LLC in October 2020 to demonstrate and commercially deploy an economically competitive and viable first-of-a-kind NuScale Power, LLC Small Modular Reactor plant at the Idaho National Laboratory. In November 2023, the Carbon Free Power Project (Project) was terminated by mutual agreement between the Carbon Free Power Project, LLC and NuScale Power, LLC. We performed this audit to determine whether Nuclear Energy effectively managed the Project and to share lessons that can be applied to current and future awards and Department efforts.

What We Found

We found that Nuclear Energy did not effectively manage the Project, and lessons learned can be applied to future awards. Specifically, we found that Nuclear Energy did not effectively evaluate critical risks prior to award, structure the award to monitor risks, perform sufficient oversight of the Project, and ensure costs were allowable. We attributed these issues to Nuclear Energy not following existing requirements and guidance regarding merit reviews, project performance risk, risk management and evaluation, reducing perceived bias, and enforcement of award terms. Also, Nuclear Energy agreed to front-load the cost-share, placing the Government at risk of losing almost \$143.5 million since the Project terminated.

As a result, Nuclear Energy's project management failures may have contributed to the Project's termination. The weaknesses in addressing risks throughout the Project's life cycle placed Nuclear Energy and the taxpayer at a higher-than-necessary risk of project failure. While Nuclear Energy stated that the Project achieved some useful results in progressing deployment of Small Modular Reactors in the United States, the Project's key objective was not met, and Government funds of approximately \$183 million were spent without key results. We believe that the Department's senior leadership should take action to ensure that additional taxpayer funds are not put at risk.

What We Recommend

To address the issues identified in this report, we have made five recommendations that, if fully implemented, should help ensure that risks are properly managed, requirements are followed and enforced, perceived bias is sufficiently reduced, and costs and cost-share are reasonable and allowable for this and future projects.

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Background and Objective

In October 2020, the Department of Energy's Office of Nuclear Energy (Nuclear Energy) finalized a 10-year, \$1.36 billion sole-source, non-competitive cost-share award to the Carbon Free Power Project, LLC (CFPP). The CFPP is wholly-owned by Utah Associated Municipal Power Systems (UAMPS), an interlocal agency that provides wholesale electricity throughout the Intermountain West. The primary objective of the Carbon Free Power Project (Project), as modified, was to demonstrate the construction and operation of an economically competitive, first-of-a-kind 6-module NuScale Power, LLC (NuScale) Small Modular Reactor (SMR) plant¹ at the Idaho National Laboratory. The total estimated project costs were \$8.03 billion, of which Nuclear Energy committed \$1.36 billion.

This project was the culmination of an effort started between Nuclear Energy and NuScale in 2015 under a separate award. Previous Nuclear Energy support focused on technology advancement and NuScale securing Design Certification by the Nuclear Regulatory Commission (NRC), as well as efforts by UAMPS to prepare the Combined Operating License Application for submittal to the NRC. Construction of the Project was expected to begin in October 2026, with the first power module operating at the Idaho National Laboratory by 2029 and full plant operations in 2030. However, the Project was terminated by mutual agreement between the CFPP and NuScale in November 2023. As of January 2025, Nuclear Energy had disbursed approximately \$183 million, a portion of the Department's total \$1.36 billion cost-share, to the CFPP for the Project. Although the Project was terminated, we performed this audit to share lessons that can be applied to current and future awards and Department efforts. Our audit objective was to determine whether Nuclear Energy effectively managed the Project.

Results of Review

We determined that Nuclear Energy did not effectively manage the Project, and lessons learned from this project can be applied to future financial assistance awards. Specifically, we determined that Nuclear Energy did not effectively evaluate critical project risks (technical, financial, and otherwise) prior to award, structure the award to monitor project risks, and perform sufficient oversight throughout project performance. We also found that Nuclear Energy did not ensure costs were allowable in accordance with award terms.

These issues were caused by Nuclear Energy's inexperience administering an award of this nature, lack of involvement, and failure to understand the criticality of subscription risk to project success. For example, Nuclear Energy officials explained that they did not have experience or many lessons learned regarding the development of first-of-a-kind, nuclear technologies commercial deployment awards. Rather, they were familiar with research and development awards. In addition, to move the Project forward, Nuclear Energy agreed to front-load the cost-share, which, in part, caused the unresolved costs we identified. The Government is responsible for administering any financial assistance award where Federal funds are involved and for taking necessary and required actions to protect those funds. Also, the Government

¹ The plant was originally designed with 12 reactor modules.

should act prudently to align project and program risks, and handle and monitor risks commensurate with the level of threats. That is even more critical in the case of a first-of-a-kind demonstration and commercial deployment cooperative agreement.

Despite these issues, Nuclear Energy stated that the Project achieved some useful results in progressing deployment of SMRs within the United States. For example, the Project developed a complete Combined Operating License Application, methodologies for entities seeking a NRC license, and a ‘Ready to Operate Plan’ and maintenance and operation procedures. In addition, the Project progressed the design specifications, and site-specific engineering and design efforts. According to Nuclear Energy, these efforts could benefit future deployments. Nevertheless, the Department disbursed approximately \$183 million for a project that did not meet its key objective and was ultimately terminated at the CFPP’s request.

NUCLEAR ENERGY DID NOT EFFECTIVELY MANAGE THE PROJECT

We found that Nuclear Energy did not effectively manage the Project and the associated risks prior to and following project award. Specifically, Nuclear Energy did not adequately assess risks prior to project award, effectively structure the award to manage identified risks, and adequately monitor the risks after the award.

Risk Evaluation Inadequacies Prior to Award

We found that Nuclear Energy’s merit review² did not effectively evaluate subscription risks nor the CFPP’s abilities and mitigation plans to overcome known risks. Nuclear Energy’s merit review criteria requires³ the applicant to address risks and demonstrate capabilities. The *Risk Management Guide*⁴ also provides recommended risk characteristics to be estimated by the assignment of risk rating, probability, and consequence⁵ to identified risks. According to Nuclear Energy officials, an entity’s ability to obtain the necessary subscription⁶ for a first-of-a-kind nuclear plant remains one of the largest risks to new nuclear deployment today. However, the CFPP failed to rate subscription risk or assign probability and consequence that would have facilitated identification and evaluation of risk exposure, likelihood, and outcome or impact. Subscription was essential as collateral⁷ to obtain the funding for the full private sector share of the Project’s costs. Although achieving full subscription was part of the CFPP’s project economic success criteria, Nuclear Energy’s merit review did not address the CFPP’s ability to handle subscription risk and neither Nuclear Energy nor the CFPP sufficiently addressed the

² The Department’s *Guide to Financial Assistance* (GFA), Sections 2.1.6, “Project Management,” and 2.4.4, “Merit and Risk Reviews,” require a merit review that assesses the applicant’s abilities to manage projects consistent with the level of risk involved in the project. Additionally, the Department’s *Merit Review Guide For Financial Assistance*, Section 1.6.2, “Official Responsible for the Review,” requires merit review officials to ensure that the merit review provides a sound, well-documented evaluation.

³ Funding Opportunity Announcement Section, “Merit Review Criteria.”

⁴ Department Guide, 413.3-7AChg2, *Risk Management Guide*, Section 4.3.6.1, “Qualitative Risk Analysis.”

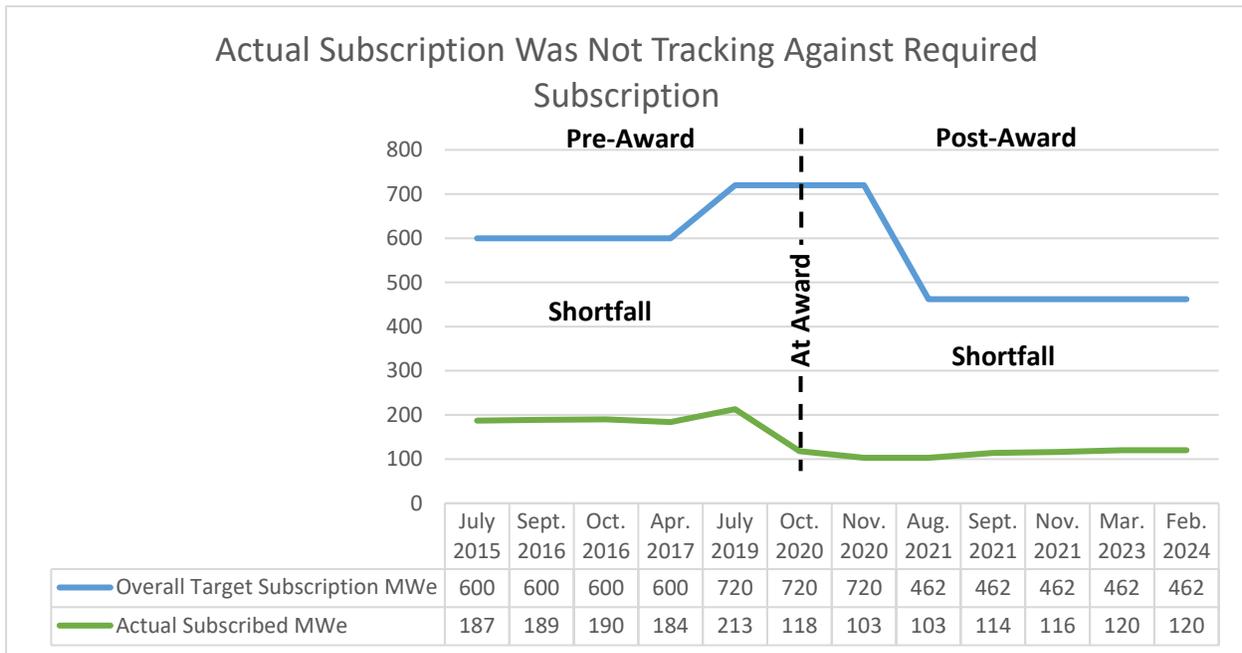
⁵ Probability is the likelihood of an event occurring; consequence is the outcome of an event.

⁶ Subscription means signing an agreement to pay for a certain amount of the plant’s megawatts-electric (MWe) capacity. Full subscription means that signed agreements collectively committed to pay for 100 percent of the plant’s MWe capacity. The 720 MWe capacity was the original plant capacity at award. That capacity was later reduced to 462 MWe by modifying the award for design changes and customer needs.

⁷ Property (such as securities) pledged by a borrower to protect the interests of the lender.

significant impact that cost and schedule overrun risks had on subscription—which the CFPP officials stated were primary reasons that current and potential subscribers were hesitant to subscribe. We found that the CFPP’s subscription risk mitigation approach⁸ was limited to “proactive engagement with potential subscribers”⁹ and did not describe how the CFPP would achieve full subscription when there was a shortfall to overcome, as reflected in Table 1.

Table 1



Further, Nuclear Energy’s merit review did not justify how the CFPP’s approach overcame its lack of experience with nuclear ownership and operations, and with implementing a project of this magnitude. Despite the shortcomings with the CFPP’s risk identification, mitigation, and inexperience approaches, Nuclear Energy’s merit review found the CFPP’s approaches adequate. If Nuclear Energy’s risk analysis followed the risk handling requirements and related recommendations, it would likely have evaluated subscription history, the reasons for the decline, and further, the significance of subscription to funding the full private sector cost-share of the Project.

In addition to the merit review’s shortcomings, we found that Nuclear Energy did not perform all elements of an adequate risk evaluation¹⁰ to assess the CFPP’s abilities to manage the Project consistent with the level of risk involved. For example, Nuclear Energy’s Financial Management

⁸ The GFA, Section 2.1.6, “Project Management,” requires project performance risks to be mitigated. Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, Appendix C, Section 25, “Risk Management,” recommends the development of sound risk mitigation strategies and actions.

⁹ According to the CFPP Project Management Plan.

¹⁰ The GFA, Sections 2.1.6, “Project Management,” and 2.4.4, “Merit and Risk Reviews,” require a risk assessment. Title 2 Code of Federal Regulations (CFR) § 200.206(b), “Risk evaluation,” referred to the risk assessment as a risk evaluation.

Assessment's Business Review¹¹ inappropriately accepted the CFPP's assurance that it would be able to provide the funds required for the CFPP's yearly cost-share rather than reviewing the likelihood of the CFPP being able to provide the required full private sector cost-share. The CFPP's provision of the full cost-share relied on full subscription by the Full Notice to Proceed (FNTP) milestone¹² and was significantly challenged by subscription shortfalls. Additionally, Nuclear Energy's business and budget reviews were incomplete because the review information only covered the initial budget period (or first 2 years) of the 10-year project. If the required reviews were completed and included all required elements, the reviews would likely have provided critical information to inform Nuclear Energy of specific financial requirements and risks involved in the Project.

Finally, we found that Nuclear Energy did not obtain, review, or approve the funding plans, as required.¹³ Per the award terms, the funding plans were required to identify all anticipated sources of the full private sector share of the Project cost, fully describe any limitations or other factors that could affect the availability of funding, and provide a reasonable plan that the CFPP could obtain the balance of funding. However, at no time in the Project's duration did the CFPP provide detailed funding plans, nor did Nuclear Energy provide us with its documented reviews and approvals. Nuclear Energy officials stated that much of the information that would comprise the funding plans was provided through other documents. However, we reviewed the documents and determined that they did not constitute a reasonable plan that met the funding plan expectations. For example, Nuclear Energy provided the CFPP's summary approach to fully fund the private sector cost-share; however, the approach did not identify all anticipated sources of the private sector cost-share nor explain that subscription was a key factor that was vital and necessary to secure long-term debt funding. In addition, Nuclear Energy stated that the CFPP provided a description of its limitations, conditions, and other factors through its funding commitment letters. While some contingencies were described in the initial letter, the letter did not discuss third-party financing and related conditions. The letter committed a small portion of the full private sector cost-share, and that portion was highly conditioned and subject to reevaluation. These circumstances warranted Nuclear Energy's prudent caution and exercise of additional due diligence.

This condition occurred because Nuclear Energy failed to adhere to risk management requirements and related recommendations, and award terms, as previously detailed, and undervalued the significance of the risks to project success. For example, Nuclear Energy did not follow the requirement to prepare a sound, well-documented merit review evaluation, as required by the *Merit Review Guide For Financial Assistance*. Nuclear Energy's merit review did not document the results of an evaluation of the subscription risks and related handling strategies, nor could it provide evidence that the merit reviewers possessed the requisite experience. For example, Nuclear Energy officials stated that the merit reviewers verbally discussed subscription risk and the CFPP's high-level mitigation approach but did not mention nor rate subscription risk in the merit review because the CFPP acknowledged this risk and included a high-level approach to mitigate the risk in its application. Furthermore, Nuclear Energy stated that full subscription

¹¹ The GFA, Section 2.5.2, "Financial Management Assessment."

¹² See "Award Not Structured to Monitor Performance Risks During Project" section.

¹³ Award terms required the CFPP to provide detailed funding plans prior to the award and after the award at each of the continuation applications and required Nuclear Energy to review and approve those funding plans.

and Levelized Cost of Electricity (LCOE) were not Department requirements for a successful project because the CFPP could change the targets. However, Nuclear Energy’s failure to establish subscription and LCOE targets as requirements was inconsistent with the CFPP’s economic success criteria for the Project. This was the CFPP’s criteria to decide whether to continue or terminate the Project and should have also been Nuclear Energy’s requirement. Further, the CFPP required 100 percent subscription to secure financing of the full private sector cost-share funds, and LCOE had to be economical in comparison with other competing electricity sources in the western energy market. According to Nuclear Energy, award success was measured by operational deployment. Specifically, Nuclear Energy explained that the Government’s goal was to have the NuScale SMR operating and connected to the grid, and meeting the objectives, which was why Nuclear Energy was supporting this project. However, to meet the Government’s overall goal, it was also imperative that the CFPP achieve 100 percent subscription, obtain the full private sector cost-share, and commercially deploy an economical SMR.

Also, Nuclear Energy did not perform and document an analysis of any perceived bias that may influence decisions. The *Risk Management Guide*, Section 4.3.1, “Risk Identification,” recommends that it is important to be aware of biases. We identified circumstances that indicated an increased risk of bias. For example, there was a long history of financial assistance awards with total obligations of approximately \$586 million from Nuclear Energy for assisting the CFPP’s sub-awardee, NuScale, to bring NuScale’s reactor technology to commercial deployment. UAMPS’ progress on the Project began in mid-2015 under a prior NuScale award for site permitting and developing a combined operating license application for NRC review. We concluded that these factors created inherent pressure to achieve that deployment even though there was a lack of industry interest in NuScale’s technology and stiff market competition with other existing generation technologies. Similarly, the Government Accountability Office found that the Department’s program offices can be overly optimistic in their assessment of projects, including potential cost and schedule risks, because program offices both manage and provide oversight to awards and want them to succeed.¹⁴ Nuclear Energy should have evaluated its potential biases prior to the award, and as significant risks were identified, to ensure that any sunk cost or optimism biases were not unduly influencing its award and risk handling decisions.

Finally, the GFA, Section 2.1.6, states that “as part of DOE’s stewardship responsibilities for its financial assistance awards, Grants Officers and program officials must consider program and project management. While [Department] Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, does not apply to financial assistance agreements, the basic principles outlined in the order can be applied.” The basic principles include, amongst others, identifying and mitigating project performance risks (technical, financial, and otherwise).

¹⁴ GAO, *Decarbonization Opportunities Exist to Improve the Department of Energy’s Management of Risks to Carbon Capture Projects*, (GAO-24-106489, May 2024).

Award Not Structured to Monitor Performance Risks During the Project

We determined that Nuclear Energy did not structure the award to mitigate and monitor project performance risks in accordance with Federal and Departmental requirements.¹⁵ Specifically, we found that Nuclear Energy did not establish specific interim milestones, performance progress metrics, and reporting requirements to directly address subscription progress. For example, there was a full subscription milestone in the base award, but there were no deliverables detailing subscription efforts along the way to meet this milestone nor any required reporting to the Department regarding subscription. In fact, Nuclear Energy removed the subscription milestone in its entirety, stating that the full subscription and FNTP milestones were duplicative. However, the FNTP milestone did not include any subscription-related language. Also, according to Nuclear Energy, it did not plan to review the Project's viability until FNTP in October 2026. FNTP was not scheduled until approximately 6 years into the Project and over 3 years after the original subscription milestone. Despite the absence of requirements, about 2 years into the award, the CFPP, not Nuclear Energy, established a subscription target of 80 percent to demonstrate subscription progress to UAMPS' Project Management Committee, which was weighing project continuance decisions. Per mutual agreement between the CFPP and NuScale, they would take joint responsibility to achieve the target in less than a year from adoption, and more than two and a half years prior to FNTP, for the Project Management Committee's decision to continue the Project. The CFPP was unable to make progress on achieving subscription, and as a result, the CFPP and NuScale terminated the Project less than 1 year later, well before the FNTP milestone.

This condition occurred because Nuclear Energy did not take responsibility for ensuring those risks were adequately mitigated. Specifically, as previously discussed, Nuclear Energy did not adhere to risk management and performance measurement requirements and undervalued the criticality of subscription and LCOE risks to project success. We further concluded that Nuclear Energy did not share an appropriate level of responsibility for project management, planning, and risk analysis, as expected by the award's *Statement of Substantial Involvement*.¹⁶ For example, Nuclear Energy officials stated that the CFPP's subscription targets were the CFPP's requirements and not requirements for a successful project. Nuclear Energy also stated that it does not typically include requirements that are in the recipient's control, which are not Department requirements in cooperative agreements. Given the identified risks, Nuclear Energy should have established award milestones and progress reporting against the Project's success

¹⁵ Title 2 CFR § 200.301, "Performance measurement," requires the measurement and reporting of recipients' performance with clear performance goals, indicators, and milestones. In addition, both the Title 2 CFR § 200.206, "Risk evaluation;" and the GFA, Section 2.4.4(B), "Risk Assessment," allow for adjustments to the requirements, to include the special conditions and the Statement of Substantial Involvement, when a risk evaluation indicates that it may be merited either pre-award or post-award. Additionally, in an August 2021 update, the GFA, Section 1.3, "Program Planning, Design, and Performance Measurement," requires that performance measurement progress must be both measured and reported. Finally, the award's *Statement of Substantial Involvement* expected stage and milestone reviews to focus on progress toward achieving project objectives.

¹⁶ The *Statement of Substantial Involvement* expects the Department and Recipient to collaborate and share responsibility for the management of the Project. In addition, it expects Nuclear Energy to participate in project management planning activities, including risk analysis.

targets that are required to meet the Project's objective. This would have provided Nuclear Energy with the opportunity to discuss the risks, monitor the CFPP's progress toward mitigating the risks, and make informed and timely project continuation decisions. Furthermore, the significance of the risks, and more specifically subscription risk, warranted more frequent performance progress checks than FNTP in the sixth year of the Project.

Inadequate Post-Award Monitoring and Oversight

We found that Nuclear Energy did not evaluate the CFPP's risk mitigation performance to ensure that the award objectives, terms, and conditions were accomplished in accordance with the award's *Normal Federal Stewardship* and *Substantial Involvement* activities. Nuclear Energy expected to review and approve one stage or milestone before work began on a subsequent stage; and to conduct an assessment of whether the CFPP was making acceptable progress toward achieving Project objectives, whether the Project and its objectives remained viable, whether both parties remained committed to the Project, and whether the Project should continue. However, we found that Nuclear Energy did not review performance related to the mitigation of subscription risk. Nuclear Energy stated that it monitored progress and exercised increased risk mitigation oversight through regular calls, biweekly meetings/reports, quarterly reports, and other activities. However, we found weaknesses with Nuclear Energy's oversight of the CFPP. For example, none of the biweekly reports that we reviewed mentioned subscription rates or efforts to increase them, and the reports included limited information on Project risks. Although the quarterly reports listed relevant Project risks, such as subscription, risk ratings or probabilities were not included, and the mitigation strategy for subscription was not fully developed and did not include the most adverse outcomes. Nuclear Energy did not obtain or monitor subscription levels by month or participant.

If the Project was unable to secure sufficient subscription, the Project would not meet its economic success criteria. The economic success criteria included two key elements: (1) the economic competitiveness test, i.e., meeting a target LCOE; and (2) meeting subscription targets. We found that the Project's subscription fell sharply just before and after the award. There were marginal changes over the next 2 years, but Table 1 shows that the CFPP did not add a substantial number of subscribers, which indicated that the CFPP's subscription risk mitigation strategy and Nuclear Energy's oversight were not working. In sum, the risk of cost and schedule overruns fueled low subscription rates and heightened overall Project risk. Evaluating risk mitigation performance throughout the Project would have afforded Nuclear Energy the opportunity to evaluate whether the CFPP's risk mitigation progress was sufficient, determine whether Nuclear Energy should take action to ensure risks were sufficiently mitigated, and whether the Project should continue. Without regular review and analysis of subscription status over time, subscription risk went unchecked until it was too late to revise mitigation strategies to meet economic success criteria.

In addition, Nuclear Energy did not conduct semiannual program reviews to evaluate progress with respect to the Project's programmatic objectives and recommendations to continue funding. However, Nuclear Energy stated that it held only one semiannual review. Five semiannual

reviews were required over 3 years of the Project prior to termination. That single review consisted only of a verbal discussion about ongoing challenges and next steps. Nuclear Energy did not document the results of that review, how it evaluated progress toward meeting Project objectives in key areas such as subscription or LCOE, nor the recommendation to continue funding.

This condition occurred, in part, because Nuclear Energy did not adhere to the award's Normal Federal Stewardship and expected Substantial Involvement activities, and the risk management and performance measurement requirements and related recommendations, as previously discussed. Also, Nuclear Energy's lack of experience with this type of award, undervaluing the risks threatening the Project's success, and not taking the appropriate level of shared responsibility also impacted post-award monitoring and oversight.

NUCLEAR ENERGY PAID FOR UNALLOWABLE COSTS AND OTHER COSTS REMAIN UNRESOLVED

We found that Nuclear Energy did not ensure costs were allowable in accordance with Federal regulations and award terms. Specifically, Nuclear Energy paid for potential unallowable costs and may have significantly overpaid the Federal cost-share.

Unallowable Legal Costs

We found that Nuclear Energy paid for potentially unallowable legal costs. Specifically, 2 CFR § 200.403(a), "Factors affecting allowability of costs," states an allowable cost must be necessary and reasonable for the performance of the Federal award and be allocable thereto under these principles. Further, 2 CFR § 200.404, "Reasonable costs," states that a cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person under the circumstances prevailing at the time the decision was made to incur the cost and market prices for comparable goods or services for the geographic area. In our review of three selected invoices, we questioned approximately \$8,876 in legal costs based on the rates provided in the CFPP's cost analysis and Nuclear Energy's budget review contained in its negotiation memoranda. We based cost reasonableness on hours and rates. In the technical review for budget period 3, Nuclear Energy explained that some of the proposed hourly legal rates seemed very high, but the total amount to be provided during this award period was reasonable. However, the amounts charged as reasonable should not be determined based on the costs for a given period that are below an overall cost ceiling or threshold.

This condition occurred because Nuclear Energy did not ensure that the CFPP applied its cost analysis to the legal costs, nor did it apply the results of its own budget reviews for budget periods 1 and 2. A cost analysis, as required by the award, is used to review and evaluate elements of cost and profit to determine a fair and reasonable price or what the costs should be, assuming reasonable economy and efficiency. Therefore, the CFPP and Nuclear Energy should have applied the results of the CFPP's cost analysis and Nuclear Energy's budget reviews for determining the reasonability of the costs.

Unresolved Federal Cost-Share Overpayment

We questioned \$143,504,482 in unresolved costs pending closeout of the award, as shown in Table 2. Specifically, Nuclear Energy paid approximately \$143.5 million more than its share of costs. Per the award terms, the CFPP may be liable to pay, provide in-kind compensation, and/or transfer assets¹⁷ to rebalance its cost-share and resolve the \$143.5 million.

Table 2

Nuclear Energy’s Overall Cost-Share Calculation

\$230,802,849	Estimated Total Project Costs (TPC) Excluding Termination Costs
16.9%	Nuclear Energy Overall Cost-Share Percentage Per Agreement (16.9% of TPC)
<u>\$39,005,681</u>	Nuclear Energy Overall Cost-Share Amount (TPC * 16.9%)

Nuclear Energy Overpayment and Cost-Share Rebalance

\$182,510,163	Nuclear Energy Front-Loaded ¹⁸ Amount Paid
39,005,681	Less: Nuclear Energy Overall Cost-Share Amount Per Agreement
<u>\$143,504,482</u>	Amount the CFPP May Owe to Nuclear Energy to Rebalance the Cost-Share

This condition occurred because Nuclear Energy agreed to front-load the cost-share, which placed the Government at risk of losing approximately \$143.5 million given the Project’s termination. Nuclear Energy identified the CFPP as the only entity willing to pursue this Project. Accordingly, Nuclear Energy decided to pursue this as a sole-source award, which increased the Government’s risk to move forward with the Project by limiting its negotiation power to select among bidders of differing technical expertise, financial stability, past performance, and project cost control. During negotiations, the CFPP required Nuclear Energy to front-load the Federal cost-share to move forward with the Project. The CFPP expected the front-loading to “de-risk” the early phases of the Project and obtain a higher degree of certainty that the Project could meet its cost and schedule goals before bearing the majority of the Project risk. According to Nuclear Energy, front-loading would also allow the site-specific engineering work and Combined Operating License Application development work to proceed in parallel to achieve its schedule goals. Nuclear Energy officials stated that the Department’s senior leadership viewed the increased cost-share risk as a necessary risk to get an industry entity to move first on this first-of-a-kind project. Nuclear Energy also stated that it built safeguards into the agreement, which primarily consisted of the cost-share itself, and the transfer of assets could be used to achieve the required recipient cost-share percentage of 83.1 percent or an estimated \$191,797,168 ($\$230,802,849 * 83.1\% = \$191,797,168$). However, we determined that the cost-share cannot be a sufficient safeguard because meeting the private sector cost-share is still required per the award

¹⁷ Project assets include contracts, studies, licenses and license applications, recipient-owned data, and recipient-owned technologies that are useful or have value to an individual, group, or entity.

¹⁸ Front-loading is when the Government agrees to share at a higher rate in the early stages of a project with the expectation that the recipient shall share at a higher rate during later stages to meet its overall cost-share percentage.

in the event of the Project's termination or discontinuance. Further, if there is not a combination of recipient cash, in-kind compensation, or assets sufficient to satisfy the full private sector cost-share, then the Government cannot recover the front-loaded amounts it paid. Additionally, the transfer of assets primarily helps the recipient meet its cost-share requirements and may not fully protect taxpayer interests. For example, Nuclear Energy will have to determine whether the assets that the CFPP offered to rebalance its cost-share have value to the Department and taxpayer.

CONCLUSION

The issues we identified in this report contributed to the Project being terminated and represent lessons learned that Nuclear Energy should apply to adequately evaluate, mitigate, and manage project risks. The weaknesses in addressing risks throughout the Project's life cycle placed Nuclear Energy and the taxpayer at higher-than-necessary risk of project failure. Given existing budget challenges facing the Government, programs must ensure that the limited resources available are used to advance the mission of the Department's programs effectively and efficiently. Although Nuclear Energy stated that the Project achieved some useful results in progressing deployment of SMRs in the United States, the Project's key objective was not met and Government funds of approximately \$183 million were spent without key results.

Similar issues occurred on another Department demonstration project. Specifically, in our two reports on the Texas Clean Energy Project (TCEP),¹⁹ we identified that the TCEP was terminated by the Department, in part, because Summit Texas Clean Energy, LLC could not obtain the required commercial debt and equity financing. In that case, the Department accelerated the use of *American Recovery and Reinvestment Act of 2009* funds and reduced the Summit Texas Clean Energy LLC's cost-share requirement to help with liquidity needs, both of which put more taxpayer funds at risk if the TCEP did not move forward. Increased costs associated with ongoing financing efforts raised serious questions about the Department's continued support. The Department subsequently initiated actions to terminate the TCEP, citing the Office of Inspector General's findings.

If Nuclear Energy had taken a more concerted approach to address risks throughout the Project's life cycle, it may have changed the outcome of the Project or prevented the expenditure of Government funds without achieving key results. We believe that Nuclear Energy should thoroughly evaluate the issues identified in this report and apply lessons learned to similar projects.

¹⁹ *The Department of Energy's Continued Support of the Texas Clean Energy Project Under the Clean Coal Power Initiative* (OIG-SR-16-02, April 2016); and *The Office of Fossil Energy's Oversight of the Texas Clean Energy Project Under the Clean Coal Power Initiative* (DOE-OIG-18-17, February 2018).

Recommendations

For projects moving forward, we recommend that the Principal Deputy Assistant Secretary, Nuclear Energy, instruct program offices to:

1. Implement project management principles in accordance with the Department's GFA and related guidance, and applicable regulations to include:
 - Evaluating risk; and
 - Identifying, analyzing, and formally documenting sound mitigation strategies for project performance risks.
2. Structure award performance measures to reflect project risks and the related level of substantial involvement to meet the specific objectives of its cooperative agreements.
3. Take steps to ensure that financial assistance award terms and conditions are enforced, including Normal Federal Stewardship and Substantial Federal Involvement responsibilities in accordance with applicable law.

We recommend the contracting officer, Idaho Operations Office, to:

4. Determine the allowability of the questioned legal costs identified in this report, as well as legal costs billed by the same vendor in the balance of Project invoices, in accordance with 2 CFR § 200.403 and 2 CFR § 200.404 and address costs determined to be unallowable; and
5. Resolve the questioned cost-share amounts in accordance with the cost-share terms in the agreement and applicable law.

Management Comments and OIG Response

Management concurred with four recommendations and nonconcurred with one recommendation. Additionally, management disagreed with the OIG's conclusion that Nuclear Energy did not effectively manage the Project and stated that "the report's baseline conclusion is based on a flawed and overly critical assessment of [Nuclear Energy]'s project management." The Department further stated that "it may not have completed some oversight actions to the degree desired by the OIG." However, Nuclear Energy did not demonstrate how the report's conclusion was flawed and overly critical. Further, the OIG did not establish a desired degree of oversight. Nuclear Energy established the oversight responsibilities as written in the award and based on the Department's GFA. As shown in the report, we reviewed Nuclear Energy's oversight activities to determine whether it fulfilled those responsibilities, and we found that Nuclear Energy did not sufficiently manage the Project or oversee subscription.

As identified in our report, the Project’s key objective was not met due to the lack of subscription and Nuclear Energy did not perform many of its oversight responsibilities related to Project risks throughout the Project’s lifecycle. For example, Nuclear Energy did not:

- Address subscription risk, or CFPP’s ability to handle those risks, in its merit review;
- Obtain, review, or approve the funding plans;
- Establish performance progress metrics and reporting requirements to directly address subscription progress; or
- Review performance related to subscription and mitigation of subscription risk.

With regard to our recommendations, management concurred with Recommendation 1, and we found the Department’s response and planned actions to be partially responsive to our recommendation. Management stated that the Department would continue to implement project management principles. However, as our report identifies, Nuclear Energy did not fully implement project management principles, and Nuclear Energy’s response did not provide actionable plans on implementing project management principles and improving risk evaluation and mitigation for future projects and programs.

For Recommendation 2, management concurred and we found the Department’s response and planned actions to be responsive to our recommendation. Management stated it will refine performance measures in future cooperative agreements to better reflect project-specific risks and the appropriate level of Federal involvement including interim milestones and risk-informed metrics.

Management nonconcurred with Recommendation 3. Specifically, management nonconcurred “as written” because Nuclear Energy did not agree that the Award’s Statement of Substantial Involvement was a requirement. Management stated that the “OIG’s report characterizes the Award’s Statement of Substantial Involvement as a set of expectations, to be carried out over the course of the award,” and Nuclear Energy officials did not agree that these expectations were requirements. However, the Statement of Substantial Involvement included responsibilities on how Nuclear Energy was going to monitor project progress and viability. The significance of the identified risks determined the requirement to perform those responsibilities as written. In our report, we identify that Nuclear Energy did not monitor subscription performance, a critical project viability risk that resulted in the Project’s termination.

Management concurred with Recommendations 4 and 5. We found the Department’s response and planned actions to be responsive to our recommendations. The cognizant contracting officer will review the questioned costs and complete the cost share reconciliation.

Management’s comments are included in Appendix 3.

Objective, Scope, and Methodology

Objective

We conducted this audit to determine whether the Office of Nuclear Energy effectively managed the Carbon Free Power Project (Project). Although the Project was terminated, we performed this audit to share lessons that can be applied to current and future awards and Department efforts.

Scope

The audit was performed from June 2024 through August 2025 in Idaho Falls, Idaho, and other locations as required. The audit scope included pre-award and Project activities from July 2019 through August 2025. The audit was conducted under Office of Inspector General project number A24ID009.

Methodology

To accomplish our audit objective, we:

- Reviewed applicable laws, regulations, policies, and procedures pertaining to the Project;
- Reviewed Assistance Agreement DE-NE0008935 and its associated terms and conditions, funding opportunity announcement, merit review, Project Management Plan, and other underlying documents;
- Reviewed prior reports related to the Project, program financial assistance awards, new reactor concepts, and an Independent Project Review;
- Interviewed personnel from the Department's Office of Nuclear Energy, Carbon Free Power Project, LLC, and Utah Associated Municipal Power Systems;
- Reviewed and analyzed subscription and demand history, levelized cost of electricity information, and a selection of power sales contracts;
- Reviewed quarterly reports, a judgmental sample of biweekly reports, Program Information Collection System information, independent audits of Utah Associated Municipal Power Systems and the Project, Office of Nuclear Energy congressional briefings, and the Project's risk register; and
- Reviewed a cost analysis, a selection of Project invoices, and application of provisional billing rates to invoices.

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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We assessed internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the control activities component and associated implementation principle, and the monitoring component and both of its underlying principles. 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 the cost and subscription data by performing electronic testing, reviewing existing information about the data and the system that produced them, and interviewing officials knowledgeable about the data. In addition, we traced a selection of data to source documents. We determined that the data was sufficiently reliable for the purpose of responding to our objectives.

Management officials waived an exit conference on January 16, 2026.

Related Reports

Office of Inspector General

- Audit Report: [*The Office of Fossil Energy's Oversight of the Texas Clean Energy Project Under the Clean Coal Power Initiative*](#) (DOE-OIG-18-17, February 2018). The audit found that the Office of Fossil Energy (Fossil Energy) had not effectively implemented ongoing invoice review controls it put in place to manage the risks associated with the Texas Clean Energy Project (TCEP). Also, the audit found potentially unallowable lobbying costs and questionable or prohibited travel-related expenses. Additionally, the audit identified concerns with certain amounts reported by Summit Texas Clean Energy LLC (Summit) as part of its cost-share. These issues occurred, in part, because Fossil Energy had not always exercised sound project and financial management practices in its oversight of the TCEP. Also, the questioned costs were charged to the TCEP because neither Summit nor Fossil Energy identified the costs as potentially unallowable in Summit's preparation and review of expenditures. In June 2016, Fossil Energy officials initiated actions to terminate the TCEP, citing the findings identified in our prior report (OIG-SR-16-02, April 2016). To address the deficiencies identified in this report, three recommendations were made to reinforce project management procedures for financial assistance awards, develop and implement procedures regarding recipient cost-share, and resolve questioned costs in this report.
- Special Report: [*The Department of Energy's Continued Support of the Texas Clean Energy Project Under the Clean Coal Power Initiative*](#) (OIG-SR-16-02, April 2016). This report was issued to communicate the immediate concern about the TCEP to allow the Department of Energy sufficient time to take actions to protect taxpayer funds. Due to Summit's inability to obtain the required commercial debt and equity project financing and the adverse effect of changing energy markets on the demand for coal-based power plants, the audit team expressed concern about the viability of the TCEP and the Department's continued involvement. Although construction of the plant was originally planned for completion in June 2014, the TCEP remained in the project definition phase. Additionally, the report identified that the Department had taken actions that increased its financial risk in the TCEP. Specifically, it accelerated disbursements of *the American Recovery and Reinvestment Act of 2009* funds and allowed Summit to shift TCEP costs from the Phase 2 design, resulting in higher reimbursements than were originally intended during Phase 1. As of February 2016, the Department had invested about \$116 million in the TCEP without assurances that it would succeed. Ultimately, upon communicating our concerns to management, the Department decided to suspend funding to the TCEP in February 2016.

Government Accountability Office

- Audit Report: [*Decarbonization Opportunities Exist to Improve the Department of Energy's Management of Risks to Carbon Capture Projects*](#) (GAO-24-106489, May 2024). The Government Accountability Office (GAO) found that the Department offices employed several strategies to address risks associated with selection and management of projects. These strategies included risk reviews, multi-phase down selection, budget controls, and peer reviews. As related to peer reviews, the GAO found that Department offices used external independent reviews to help manage risk by addressing organizational biases. The GAO reported that according to Department officials, program offices can be overly optimistic in their assessment of projects, including potential cost and schedule risks, because program offices both manage and provide oversight to awards and want them to succeed. Further, external independent reviews help bring to light actions that can potentially limit the likelihood of success and can help balance this optimism. Additionally, the GAO found that the Department's Office of Fossil Energy and Carbon Management did not adhere to guidance regarding risk reduction in project management and selection. The GAO recommended that actions be taken to more clearly document project risk treatment strategies consistent with the project management principles identified in its *Guide to Financial Assistance*. The GAO also recommended that the Office of Fossil Energy and Carbon Management take steps to ensure that the office adheres to guidance and only selects projects that are deemed technically acceptable.
- Technology Assessment: [*Nuclear Reactors Status and challenges in development and deployment of new commercial concepts*](#) (GAO-15-652, July 2015). The assessment identified many challenges in development and deployment of new commercial concepts. The challenges included:
 - Economic competitiveness with other electricity generation sources including renewable energy;
 - Demonstrating that small modular reactor designs can operate safely without adding to the complexity of the design, which can impact construction and maintenance costs and economic competitiveness;
 - First-of-a-kind nuclear plant costs increasing construction challenges;
 - Finding investors when some uncertainties remain about the Nuclear Regulatory Commission certification or licensing processes and uncertainties related to the scale of investment needed to build a new reactor, with general hesitancy among potential customers to commit to a several billion dollar construction project without a demonstration of the technology;
 - Facing difficulties arising from uncertainties related to the future competitiveness of reactors relative to other forms of technology or because of future changes in public perceptions about nuclear power;
 - Uncertainty for nuclear reactor profitability stemming from potential future changes in alternative electricity generation like decline in natural gas prices and increases in renewable energy generation; and

- Design certification and licensing uncertainty associated with the need for regulatory exemptions which, according to reactor designers, increases reactor designers' development risks by potentially increasing the length of the multiple-year design certification or license application process.

The assessment also found that a customer will consider whether a nuclear power plant will be cost-competitive with other sources of electricity. These customers may also evaluate reactor economics including the overnight capital costs;²⁰ financing costs; the costs of ongoing operations, maintenance, and associated high cost and schedule duration; potential delays; and costs of security, staffing, and fuel purchasing. No formal recommendations were made in this assessment.

²⁰ Overnight capital cost is the cost of engineering, procuring, constructing, and licensing the plant and its associated infrastructure, as if it were paid for instantly and the plant were to be built overnight, such that no interest would accrue during its construction.

Management Comments



Department of Energy

Washington, DC 20585

February 3, 2026

Mr. Lewe Sessions
Assistant Inspector General
for Investigations
1000 Independence Ave, SW
Washington, D.C. 20548

Dear Mr. Sessions:

Thank you for providing a draft copy of the Office of Inspector General (OIG) report, "Opportunities Exist to Improve the Department of Energy's Oversight of Demonstration and Deployment Projects", which includes the OIG's perspectives regarding the Department of Energy's (the Department) management of the Carbon Free Power Project (CFPP).

We reviewed the draft report and appreciate the OIG's efforts to identify areas for improvement in the oversight of demonstration and deployment projects. While the Department concurs with four of the five recommendations as written, it respectfully offers alternative language for the remaining recommendation to better reflect the legal and regulatory framework applicable to financial assistance awards.

The Department disagrees with the OIG's conclusion that the Office of Nuclear Energy (NE) did not effectively manage the CFPP. As with any significant project, the Department's oversight role must strike a delicate balance wherein it ensures taxpayers' dollars are used appropriately, without the oversight itself becoming so burdensome for the awardee that the project fails through cost overruns and schedule challenges. The Department understands that it may not have completed some oversight actions to the degree desired by the OIG, but the report's baseline conclusion is based on a flawed and overly critical assessment of NE's project management.

The Department remains committed to applying sound project management principles, including risk assessment and mitigation strategies, consistent with the Department's Guide to Financial Assistance (GFA) and applicable law. Further, the Department will continue to refine its approach to project management, risk assessment and mitigation, and cost oversight to ensure effective stewardship of taxpayer resources and support the successful deployment of advanced energy technologies.

Although it was unfortunate that the CFPP came to an early termination, the Department believes that the work accomplished through this project, prior to its termination, has been and will continue to be significant and valuable for the nuclear reactor deployment community at large. Through this work, the project was able to complete (1) a Combined License Application (COLA) ready for submittal to the Nuclear Regulatory Commission (NRC), (2) a site-specific design for a first-of-a-kind small modular reactor (SMR) technology, and (3) a thoroughly-vetted cost estimate and project schedule that reflects the pricing seen in a post-Covid economy and incorporates schedule challenges due to supply chain shortages, among other items. Many of

the documents produced through the CFPP award remain the most advanced in the field of deploying advanced reactors.

Further, the licensing actions pursued by the project paved the way for the broader nuclear industry to implement key advancements offered by SMRs, including:

- right-sizing of emergency planning zones, which can facilitate pairing nuclear energy technology with other clean energy sources,
- use of dry cooling technologies to support flexible siting of nuclear reactors no longer tied to large sources of water, and
- the ability to use a nuclear power plant to help start a power grid after a grid disruption.

The work completed through the CFPP not only resulted in first-of-a-kind work products that can stimulate the progress of other projects; it also exercised key aspects of the nuclear deployment field to include the NRC and the nuclear supply chain, laying the groundwork for the future deployment of small modular reactors. Advanced nuclear energy technologies will be needed as the United States and other countries work to meet their future power needs. The work completed through the CFPP award has provided a significant value to the industry and a solid foundation for others to build on.

The Department welcomes continued dialogue with OIG to ensure alignment on oversight expectations and to strengthen future project execution. If you have any questions, please contact Melissa Bates at melissa.bates@nuclear.energy.gov.

Sincerely,



Mike Goff
Principal Deputy Assistant Secretary
for Nuclear Energy

Enclosure

Response to Report Recommendations

For projects moving forward, we recommend that the Principal Deputy Assistant Secretary, Nuclear Energy, instruct program offices to:

Recommendation 1: Implement project management principles in accordance with the Department's Guide to Financial Assistance (GFA) and related guidance, and applicable regulations to include:

- Evaluating risk,
- Identifying, analyzing, and formally documenting sound mitigation strategies for project performance risks.

Management Response: Concur.

DOE will continue to implement project management principles in accordance with the Department's GFA and its related guidance, and work to improve the risk evaluation and mitigation conducted for an award's performance measures. Estimated closure date: February 3, 2026.

Recommendation 2: Structure award performance measures to reflect project risks and the related level of substantial involvement to meet the specific objectives of its cooperative agreements.

Management Response: Concur.

DOE will continue to refine performance measures in future cooperative agreements to better reflect project-specific risks and the appropriate level of Federal involvement. This includes incorporating interim milestones and risk-informed metrics where appropriate. Estimated closure date: February 3, 2026.

Recommendation 3: Take steps to ensure that financial assistance award terms and conditions are enforced, including Normal Federal Stewardship and Substantial Federal Involvement responsibilities in accordance with applicable law.

Management Response: Non-concur as written.

OIG's report characterizes the Award's Statement of Substantial Involvement as a set of expectations, to be carried out over the course of the award. If the use of the term "enforced" here is meant to imply a requirement, then that is not accurate. Consistent with the *Guide to Financial Assistance*, DOE prepared a Statement of Substantial Involvement for the Project, which "describes the nature, character, and extent of *anticipated* Federal involvement." [*Guide to Financial Assistance* at 2.1.2(G)] (emphasis added). The items included in the statement of substantial involvement represented DOE's *anticipated* involvement, but it was never intended

to serve as a rigid checklist of *required* actions. Instead, DOE used discretion to adapt and adjust its involvement to meet the unique needs of the Project as it progressed. Characterizing the statement of substantial involvement as something that should be enforced, especially if that term is used to imply a requirement, fails to account for flexibilities contemplated in the *Guide to Financial Assistance*.

With any award, the Department's oversight role must strike a delicate balance wherein the Department ensures taxpayers' dollars are used appropriately without the oversight itself becoming so burdensome for the awardee that the project fails through cost overruns and schedule challenges alone. NE exercised substantial involvement through regular meetings, milestone reviews, and oversight activities, consistent with the Award's terms. While OIG may view NE's level of involvement as insufficient, that concern is already sufficiently addressed in Recommendation 2 ("Structure award performance measures to reflect project risks and the related level of substantial involvement to meet the specific objectives of its cooperative agreements.").

As such, NE recommends omitting Recommendation 3 entirely, or alternatively, re-writing it to say:

"Ensure that financial assistance award terms and conditions as written in the award documents are enforced in accordance with applicable law."

Recommendation 4: Determine the allowability of the questioned legal costs identified in this report, as well as legal costs billed by the same vendor in the balance of Project invoices, in accordance with 2 CFR § 200.403 and 2 CFR § 200.404 and address costs determined to be unallowable; and

Management Response: Concur.

NE intends for the DOE-ID Contracting Officer to review the questioned costs under the CFPP award and determine the allowability of the legal costs. Any costs determined to be unallowable will be addressed in accordance with applicable law. This action is expected to be completed by September 30, 2026.

Recommendation 5: Resolve the questioned cost-share amounts in accordance with the cost-share terms in the agreement and applicable law.

Management Response: Concur

The DOE-ID Contracting Officer will complete the cost share reconciliation process in accordance with the terms of the agreement and statutory and regulatory requirements. This action is expected to be completed by September 30, 2026.

FEEDBACK

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