OFFICE OF INSPECTOR GENERAL

U.S. Department of Energy

AUDIT REPORT

DOE-OIG-23-04 November 2022

DEPLETED URANIUM HEXAFLUORIDE CONVERSION OPERATIONS

Department of Energy
Washington, DC 20585

November 1, 2022

MEMORANDUM FOR THE MANAGER, PORTSMOUTH/PADUCAH PROJECT OFFICE

SUBJECT: Audit Report on Depleted Uranium Hexafluoride Conversion Operations

The attached report discusses our review of depleted uranium hexafluoride conversion operations. This report contains one recommendation that, if fully implemented, should help ensure that issues hindering the conversion of depleted uranium hexafluoride are identified and corrected. Management concurred with the recommendation.

We conducted this audit from November 2020 through August 2022 in accordance with generally accepted government auditing standards. We appreciated the cooperation and assistance received during this audit.

Earl Omer
Assistant Inspector General
for Audits
Office of Inspector General

cc: Deputy Secretary
Chief of Staff
Senior Advisor, EM

Department of Energy
Office of Inspector General

Depleted Uranium Hexafluoride Conversion Operations
(DOE-OIG-23-04)

WHY THE OIG PERFORMED THIS REVIEW

For decades, the Department of Energy's uranium enrichment process created a legacy of approximately 800,000 metric tons of depleted uranium hexafluoride (DUF6). In accordance with requirements set forth in public laws in 1998 and 2002, the Department designed and constructed DUF6 conversion facilities and then began conversion operations in Portsmouth, Ohio, in 2010 and in Paducah, Kentucky, in 2011. The Department estimated that it would take approximately 25 years and $4.6 billion to convert the DUF6 inventory.

We initiated this audit to determine the Department's progress in converting its DUF6 inventory.

What Did the OIG Find?

We found that the Department made limited progress in converting its DUF6 inventory into a more stable form for reuse, storage, or disposal. In the 12 years since DUF6 operations began, and at a cost of over $1 billion, the Department converted only 11 percent of the approximate 800,000 metric ton initial inventory. After encountering numerous problems with safely converting the DUF6 inventory, the Department revised its baseline in 2019 and estimated that it would then take an additional 18 years, until 2054, to convert the inventory. The Department revised its projected costs to convert the full inventory of DUF6 to around $11.7 billion, more than two and a half times its original estimate of $4.6 billion.

In addition to COVID-19 impacts, delays in converting the DUF6 occurred, in part, due to inherent technical or mechanical flaws that resulted in numerous shutdowns of the plants. While the Department invested considerably in plant modifications to address some of these flaws, it has not completed comprehensive studies of the plants' flaws and their realistic capabilities.

What Is the Impact?

We estimated that it may take until 2074 to convert the inventory, as compared to the Department's estimate of 2054. Not only would the conversion cost increase proportionately, but the extended completion date could also prolong clean-up efforts at the sites.

What Is the Path Forward?

To address the issues identified in this report, we have made one recommendation that, if fully implemented, should help ensure issues hindering conversion operations are properly addressed and corrected.

BACKGROUND

Depleted uranium hexafluoride (DUF6) is a byproduct of uranium enrichment at Department of Energy gaseous diffusion plants since World War II. Uranium enrichment, a process used to make fuel for nuclear power plants and for military applications, created a legacy of approximately 800,000 metric tons of DUF6 that was stored in about 67,000 steel cylinders at the Department's gaseous diffusion plant sites. Congress enacted two public laws that directly addressed the Department's management of its DUF6 inventory. Public Law 105-204, signed by the President in July 1998, requires the Secretary of Energy to prepare a plan to construct and operate on-site facilities at the gaseous diffusion plants at Paducah, Kentucky, and Portsmouth, Ohio, to treat and recycle DUF6. Public Law 107-206, signed by the President in August 2002, requires that no later than 30 days after enactment, the Department must award a contract for the design, construction, and operation of DUF6 conversion facilities at the Paducah, Kentucky, and Portsmouth, Ohio, sites. Public Law 107-206 also stipulates that the contract require groundbreaking for construction to occur no later than July 31, 2004, at both sites.

In accordance with the public law requirement to award a contract within 30 days, the Department awarded a design, build, and operate contract on August 29, 2002. The contractor broke ground by July 31, 2004, as required, and then commenced conversion operations at Portsmouth in 2010 and Paducah in 2011. At the time it initiated its conversion plans, the Department could not with certainty determine the full schedule and cost to convert the DUF6 inventory. However, the Department estimated that it would take approximately 25 years of conversion operations with a life-cycle cost of about $4.6 billion. The Department's DUF6 program includes three primary activities: (1) DUF6 cylinder surveillance and maintenance; (2) conversion of DUF6 to a more stable chemical form for use or disposal; and (3) development of beneficial uses of depleted uranium.

The Department's Office of Environmental Management Portsmouth/Paducah Project Office is responsible for oversight of conversion operations. Following two prior contractors, Mid-America Conversion Services, LLC assumed the contract to manage and operate the conversion plants at both sites in 2017.

We initiated this audit to determine the Department's progress in converting its DUF6 inventory.

LIMITED PROGRESS IN CONVERTING DUF6 INVENTORY

We found that the Department made limited progress in converting its DUF6 inventory. Since DUF6 operations began, and at a cost of over $1 billion, the Department converted only 11 percent of the approximate 800,000 metric ton inventory. At the time conversion operations began in 2010, the Department adhered to its original 25-year plan to convert the inventory by 2036 and planned for the contractor to routinely convert 31,500 metric tons a year to meet that schedule. However, after encountering unplanned and extended shutdowns and other problems to safely convert the DUF6 inventory, the Department revised its baseline in 2019 and estimated that it would then take an additional 18 years, through 2054, to convert the full DUF6 inventory. Further, the Department's 2019 baseline projects that the cost to convert the DUF6 will be

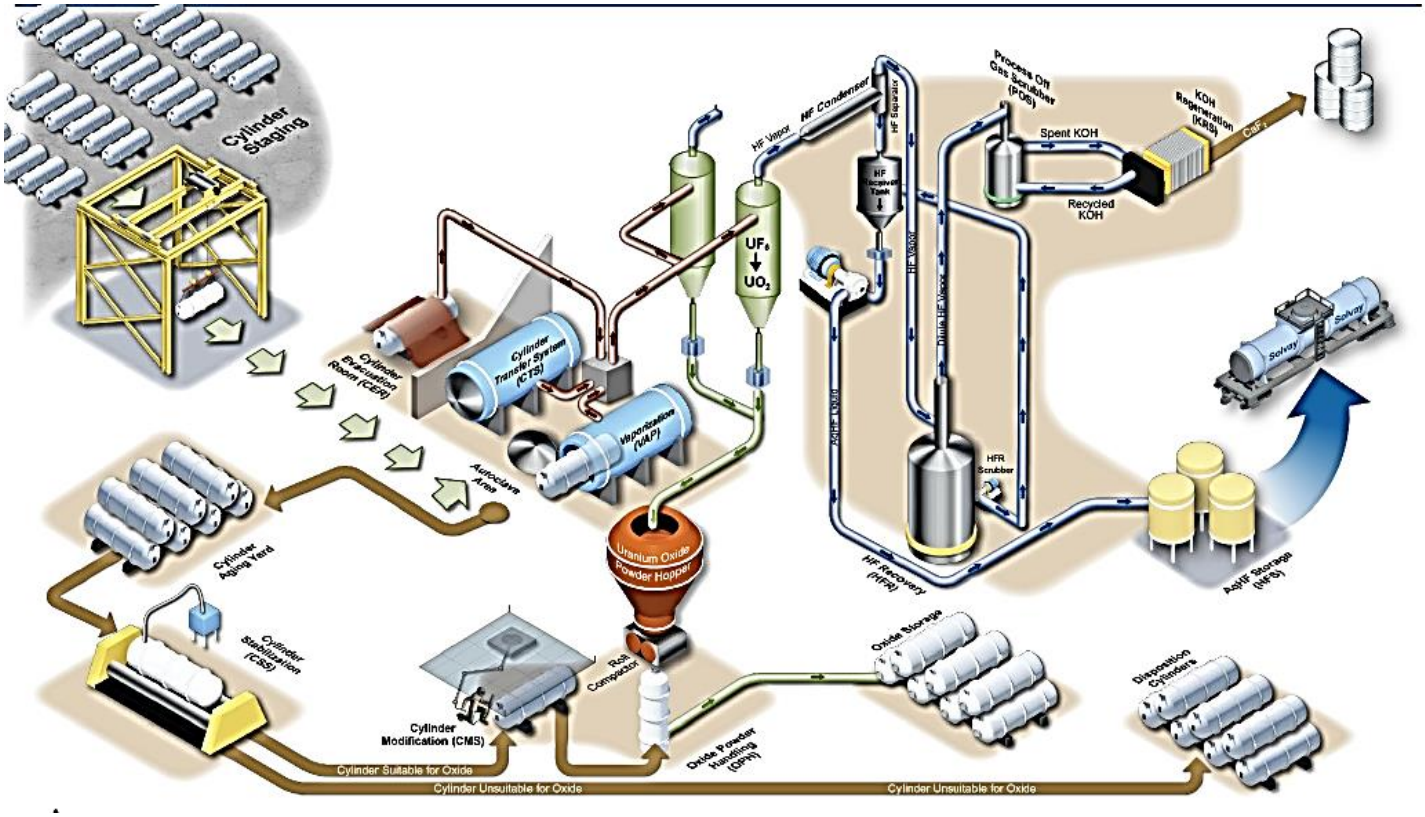
around $11.7 billion, more than two and a half times higher than its original estimate of $4.6 billion.

However, the 2019 baseline was developed prior to COVID-19 and the associated work stoppage that resulted. The Department issued a partial stop-work order in March 2020, and both conversion plants were placed in a shutdown status. For the first 6 months of the pandemic, around 40 percent of the DUF6 workforce could not perform work due to COVID-19 restrictions. By October 2020, the workforce had returned to work in full, either remotely or onsite; however, conversion operations remained in a shutdown status. In lieu of conversion operations, workers completed training, conducted maintenance-related activities, performed plant modifications, and prepared for operational readiness assessments. All this work was intended to facilitate a smooth restart of conversion operations at each plant.

By December 2021, approximately 21 months after the plants were shut down due to COVID-19, the Department conducted a restart readiness assessment of the Paducah plant and resumed conversion operations at that site. Several months later, the Department conducted a readiness assessment at the Portsmouth site and, in July 2022, restarted operations there. Once COVID-19 and other impacts are captured, we anticipate that both the cost and schedule estimates to convert the entire DUF6 inventory will increase substantially. According to the Department's October 2021 rough-order-of magnitude estimate, it projected COVID-19 cost impacts to be approximately $152 million.

INHERENT TECHNICAL AND MECHANICAL FLAWS

We determined that the slow progress could be attributable, in part, to inherent technical or mechanical flaws in the plants themselves that significantly hindered conversion operations. The DUF6 plants are multifaceted, unique chemical processing operations that include five distinct processes and numerous systems. According to the Department's descriptions, all five parts of the process are quite complex and call for the integration of multiple mechanical, chemical, temperature, scrubbing, recycling, and storage systems. The design of the plants is demonstrated on the next page.



These complex plants experienced numerous technical and mechanical issues throughout their limited operational history that officials told us were likely related to design and equipment flaws in the myriad components. To alleviate some of these systemic issues, the Department made significant investments in modifying the plants, some of which were being tested as the Paducah plant was brought back online after the COVID-19 shutdown. However, officials told us problems continued to hinder the Paducah plant's conversion operations after its recent restart.

Historical Challenges

The DUF6 conversion project has a history of shutdowns due to mechanical and safety issues that have occurred since operations began in 2010. For instance, the former contractor proposed that it could exceed the plants' process design capacity of 31,500 metric tons converted each year. Yet, in the 6-year period that the former contractor managed the plants, it converted approximately 55,000 metric tons of DUF6 in total versus a targeted design throughput of 157,500 metric tons. The former contractor experienced numerous mechanical issues with vital equipment that stalled operations for months at a time. Further, the former contractor experienced many documented safety issues during this time. These mechanical and safety issues culminated in a shutdown of both sites' plants for most of 2015 and 2016. During the shutdown, the Department awarded a new operations contract, and after contract transition, the current contractor assumed responsibility for operations in 2017.

Plant Modifications

Since 2017, the Department made a considerable investment in addressing some of the inherent design flaws in the DUF6 plants and improving safety and reliability. Specifically, the Department and the current DUF6 operations contractor identified a series of 37 plant modifications costing nearly $40 million that were designed to improve the overall reliability and safety of the two DUF6 conversion plants. These plant modifications included repairs and upgrades to systems that historically caused conversion interruptions and plant shutdowns. As of January 2022, the Department reported that 24 of those modifications were completed at a cost of around $13.3 million and estimated it will spend another $26.3 million to complete the remaining 13 modifications.

The Department deemed some of the modifications to be critical in ensuring ongoing operations and in reducing risks to workers. For instance, the Department considered modifications related to piping and valve configurations to be critical in reducing the risk of worker exposure to hazardous materials at both sites. These piping modifications, still ongoing at the time of our audit, were estimated to cost approximately $14 million and were designed to replace PVC piping/components with metal piping/components with upgraded valves to ensure proper isolation, purging, and testing. The Department prioritized these critical modifications based on prior incidents of exposures or near-exposures that could have resulted in the injury of employees and resulted in extended safety-related shutdowns in the past. In another example, the contractor completed modifications costing around $6.4 million that would ensure an alternate supply of hydrogen was available at each site. According to the Department, these modifications eliminated the need to maintain back-up hydrogen generators and increased the overall reliability of hydrogen supply that is necessary to the conversion process. In addition to the 37 ongoing and planned modifications costing nearly $40 million, DUF6 officials have identified other potential plant modifications costing approximately $50 million that could be implemented over the next 5 years.

Restart of Paducah Conversion Operations

Concurrent with the plant modifications, the Department recently performed a readiness assessment at the Paducah plant to determine its ability to restart after the COVID-19 shutdown. Department Order 425.1D, *Verification of Readiness to Start up or Restart Nuclear Facilities*, stipulates that a restart of operations after an extended shutdown requires verification of the readiness of personnel, procedures, program, and equipment to safely start or restart operations. Accordingly, a readiness assessment at Paducah was performed in September 2021 that included reviews of documentation and procedures, inspections of equipment and systems, interviews with personnel, and observations of simulated operations. The readiness assessment team identified 2 pre-start findings that required corrective actions and noted 10 performance-improvement observations. After the Department confirmed that pre-start findings and corrective actions were reviewed and verified for closure, it authorized conversion operations to commence in November 2021 at the Paducah site.

The COVID-19 shutdown resulted in the longest continuous period the Paducah plant had been in a shutdown status and illustrated challenges in restarting after an extended dormant period.

The Department planned to restart the Paducah plant's four conversion lines by December 2021, run the plant 24 hours a day for 7 days a week, and convert 625 metric tons of DUF6 that month. The Department accomplished its goal and restarted all four conversion lines; however, conversion operations were sporadic as the lines experienced technical issues that halted operations. Considering these restart challenges, the Department lowered its conversion goal for January 2022 to 463 metric tons and reduced it again in February 2022 to 188 metric tons. As of March 2022, the Department continued to encounter problems continuously running the Paducah plant's four conversion lines; however, the Department increased its conversion goal for March and successfully processed 534 metric tons of DUF6, 93 percent of its goal for the month.

According to Department officials, restart challenges were not unexpected based on its prior history of restarting plants after the shutdowns in 2015 and 2016. The Department originally estimated that it would take about 4 months to bring the plant back up to full operations. Yet, at the 4-month mark in April 2022, one conversion line at the Paducah plant was still down and the Department was unable to resume full operations. At the time of our audit, it was too early to determine if the Department will be successful in fully resuming operations at Paducah and if it will encounter similar issues at the Portsmouth plant that restarted in July 2022.

Assessments of Conversion Operations Capabilities

While the Department took steps to address some long-standing challenges with the plants at the time of our audit, it had not completed an independent or internal assessment of the DUF6 plants that included a comprehensive study of the plants' inherent design flaws and their actual capabilities. As a result, the Department would benefit from a current, extensive assessment that takes into consideration, at a minimum, historical data, the expected life of the plants, expected degradation, planned maintenance, and plant capacity rates. Such an assessment may be beneficial in identifying and correcting problems, as well as providing more meaningful forecasts. In addition to the recent Paducah readiness assessment, we found that the Department conducted required facility health and condition assessments and annual reviews for operational improvements; however, while these assessments were vital to addressing some of the issues causing downtime, they neither included a top-to-bottom review of the overall health of the plants nor were they fully effective in identifying potential problems that cause production disruptions.

The recent Paducah restart demonstrated that, despite the reviews and readiness assessments performed, issues emerged that significantly hindered operations. For instance, when the Department restarted the Paducah plant, it noted failures of numerous components that are used to measure and monitor DUF6 nozzle flow rates. These failures resulted in reduced production on all four conversion lines and temporarily shut down two of the four conversion lines, one for more than 1.5 months. According to Department officials, failure of these components was unexpected, especially the number of failures occurring simultaneously. Comprehensive studies that consider the entirety of the complex DUF6 processes and multiple components may provide the Department with better awareness to identify and correct these types of issues proactively.

Further, a comprehensive analysis of DUF6 capabilities would allow the Department to more accurately forecast the resources needed to convert the inventory. Despite operating the plants

since 2010, the Department had not yet determined an optimal conversion rate at which the plants can efficiently run. As noted earlier, the Department had an original goal of running the plants at the initial design capacity of 31,500 metric tons a year, but the plants were unable to achieve that rate due to encountering numerous technical and safety issues. Given the historical technical and equipment issues encountered, including those noted in the Paducah plant restart, determination of an optimal conversion rate should consider minimizing downtime and maximizing safety while achieving conversion goals. Further, a reasonably achievable optimal conversion rate would provide the Department with realistic and appropriate metrics to measure performance and plan future conversion efforts. Department officials told us that they recognize an optimal conversion rate is needed for proper planning and budgeting, and they are currently in the process of determining a reliable conversion rate to use in the upcoming life-cycle update.

COST AND SCHEDULE IMPACTS

It is unclear how successful actions taken to date will be, or to project when the Department will complete conversion of the approximate 729,000 metric ton inventory remaining as of February 2021. However, by the Department's own planning estimates completed in 2019 before the COVID-19 shutdown, it estimated that conversion would take 18 years longer and cost approximately two and a half times more due to extended operations. According to the 2019 draft inventory work-off plan, the Department assumed that it could derive efficiencies from some of the plant modifications that would allow it to annually increase the amount of DUF6 converted each year.

While it is too early to determine if ongoing and prospective plant modifications will achieve desired operational efficiencies to complete the inventory by 2054, the Department would have to convert, on average, around 23,000 metric tons a year. We noted that, to date, the Department had not achieved that conversion rate since conversion operations began and had only come close to achieving that in 2014, when it converted 22,600 metric tons. Without incorporating significant operational efficiencies into the conversion process and fully assessing the plants' capabilities and long-term viability, this conversion rate may be difficult to sustain. For instance, after integrating more comprehensive safety protocols into conversion operations prior to the COVID-19 shutdown, the Department successfully converted around 14,000 metric tons of DUF6 in 2019. If the same rate were achieved annually moving forward, it would take the Department approximately 52 years to convert the entire inventory with estimated completion in 2074. In addition, the costs associated with this project will also likely increase significantly as the completion schedule is extended.

The failure to meet the 2054 timeline affects more than the conversion mission. Such failure will also extend the plans for the sites' cleanup and closure. The Paducah site is governed by a tri-party Federal Facility Agreement, which established site cleanup plans agreed upon by the Department, the United States Environmental Protection Agency, and the Kentucky Department for Environmental Protection. This agreement reflects the tentative agreement to begin remedial investigation of the soil beneath the Paducah DUF6 plant in 2051, a date which may be unachievable if conversion operations are still underway at that time.

Portsmouth does not have a Federal Facility Agreement; thus, the Department is the lead agency for directing cleanup actions at the site. The Department published its plan to complete the Portsmouth site cleanup by 2038 according to its most recent environmental management strategic vision. The Department originally planned for Portsmouth's unconverted cylinders to be transferred to Paducah for conversion upon the Portsmouth site closure. However, officials were uncertain if that site closure date will be extended, or if transferring a greater number of cylinders than planned will extend Paducah's date even further. If conversion does not conclude, as scheduled, soil remediation and cleanup activities will also be delayed, as would the Department's plans to turn the site over to its long-term stewardship program.

RECOMMENDATION

At the time of our audit, the Department was in the process of updating its cost and schedule baseline for conversion operations and defining realistic conversion goals. These actions alone may not be sufficient to comprehensively forecast the resources needed to complete the DUF6 mission. Accordingly, we recommend that the Manager, Portsmouth/Paducah Project Office:

1. Conduct a comprehensive review of the facilities that addresses ongoing and projected technical issues and assesses the plants' capacities and capabilities to convert the DUF6 inventory well into the future, which includes determining an optimal conversion rate at which the plants can operate safely and reliably.

MANAGEMENT RESPONSE

Management concurred with the report's recommendation and provided its current and planned corrective actions. These actions include determining realistic production rates that the DUF6 facilities can safely and reliably operate and conducting a comprehensive review of the health of the facilities to address ongoing technical issues as well as the facilities' design capabilities and inherent design flaws. These actions will allow the Department to provide an improved project forecast (i.e., cost and schedule) to complete the DUF6 mission.

AUDITOR COMMENTS

Management's corrective actions are responsive to our recommendation.

Management's comments are included in Appendix 3.

OBJECTIVE

We initiated this audit to determine the Department of Energy's progress in converting its Depleted Uranium Hexafluoride (DUF6) inventory.

SCOPE

The audit was performed from November 2020 through August 2022 at the Portsmouth, Ohio, and Paducah, Kentucky, sites and the Portsmouth/Paducah Project Office in Lexington, Kentucky. All information was obtained via remote access techniques. The audit was conducted under Office of Inspector General project number A20OR030.

METHODOLOGY

To accomplish our audit objective, we:

- Reviewed regulations, directives, contract requirements, and performance measures related to DUF6 conversion;
- Interviewed Department and contractor officials overseeing and conducting DUF6 conversion activities;
- Evaluated prior infrastructure condition assessments, plant health reports, and Paducah's 2021 readiness assessment;
- Assessed the planning and progress of DUF6 plant modifications;
- Determined COVID-19 impacts to conversion plans and schedules;
- Evaluated conversion progress reports, operational and maintenance activities, plant modifications, and conversion costs; and
- Analyzed the Cylinder Information Database and quantified the number of cylinders converted and needing to be converted.

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 environment component and the underlying principles regarding oversight responsibilities. We also assessed control activities and underlying principles of implementing policies and procedures. Finally, we assessed the risk assessment component and the underlying principles of identifying, analyzing, and responding 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 the conversion cylinder inventory data by: (1) validating that it was consistent over time (i.e., the same parameters produced the same results each time); (2) verifying that it was consistent with the data provided manually; and (3) interviewing agency officials knowledgeable about the data. We determined that the data was sufficiently reliable for the purposes of this report.

Management waived the exit conference on October 18, 2022.

Appendix 2: Prior Reports

- Audit Report on *Potential Uses for Depleted Uranium Oxide* (DOE/IG-0810, January 2009). The audit disclosed that the Department of Energy had not adequately followed through on investigating potential uses for uranium oxide. The conversion process will produce approximately 551,000 metric tons of depleted uranium oxide — a relatively stable form that can be disposed of by direct burial or, potentially, used in various materials or products. Despite finding uses that have shown potential, the Department plans to dispose of the entire inventory of uranium oxide as low-level waste and does not plan to pursue any alternatives.

- Audit Report on *Follow-up of Depleted Uranium Hexafluoride Conversion* (DOE/IG-0751, December 2006). The audit found that the Department performed a cost-benefit analysis which showed that adding the fourth line to the Portsmouth facility could save about $60 million, but it did not implement the most cost-effective approach to converting the inventory. The Department had not added a fourth conversion line because it believed that it could improve operational efficiencies without adding the line, and it did not want to further delay the project. We found that the Department could still save $35 million in life-cycle costs by reducing the operations schedule by 5 years.

- Audit Report on *Depleted Uranium Hexafluoride Conversion* (DOE/IG-0642, March 2004). The audit concluded that the Department's plan for conversion could be improved by adding an additional conversion line to the Portsmouth facility. Plans call for three conversion lines capable of processing 13,500 metric tons of depleted uranium hexafluoride per year. By adding a fourth line, Portsmouth could process an additional 4,500 metric tons annually and complete the project 5 years earlier than planned. The Department's strategy emphasized initial capital costs rather than minimizing life-cycle costs. By increasing the production capacity at Portsmouth, the Department could shorten the duration of the Portsmouth conversion project by about 5 years and save about $55 million.

Department of Energy
Washington, DC 20585

October 11, 2022

PPPO-01-10022642-23

MEMORANDUM FOR EARL OMER
ASSISTANT INSPECTOR GENERAL
FOR AUDITS
OFFICE OF INSPECTOR GENERAL

FROM: JOEL B. BRADBURNE JOEL BRADBURNE Digitally signed by JOEL BRADBURNE Date: 2022.10.11 08:53:44 -04'00'
MANAGER
PORTSMOUTH/PADUCAH PROJECT OFFICE

SUBJECT: Response to Draft Audit Report on "Depleted Uranium Hexafluoride Conversion Operations" (IDR-A20OR0303)

Thank you for the opportunity to review the draft report on the subject audit. The report states that the U.S. Department of Energy (DOE) is in the process of updating the Depleted Uranium Hexafluoride (DUF6) cost and schedule baseline for conversion operations and determining realistic conversion goals. The report further states that these actions may not be sufficient to forecast the resources needed to complete the DUF6 mission. The DUF6 project has evaluated the contents of the draft report and provides the attached for consideration.

The attachment provides a response to address the recommendation in the report. The Office of Inspector General should direct any questions to Philip Pipes, Financial Management Specialist, at (859) 219-4014 or philip.pipes@pppo.gov.

Attachment:
Management Response

cc w/attachment:
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DOE PPPO Management Response to
Draft Audit Report on
"Depleted Uranium Hexafluoride Conversion Operations" (IDR-A20OR0303)

OIG Recommendation: At the time of our audit, the Department was in the process of updating its cost and schedule baseline for conversion operations and defining realistic conversion goals. These actions alone may not be sufficient to comprehensively forecast the resources needed to complete the DUF6 mission. Accordingly, we recommend that the Manager, Portsmouth/Paducah Project Office:

1. Conduct a comprehensive review of the facilities that addresses ongoing and projected technical issues and assesses the plants' capacities and capabilities to convert the DUF6 inventory well into the future, which includes determining an optimal conversion rate at which the plants can operate safely and reliably.

PPPO Management Response: *Concur*

Current/Planned Actions

1. Lifecycle Cost Estimate Update/Revision:
   As part of the DUF6 Project's revision/update to the current Lifecycle Cost Estimate, the project team will consider the following:
   a. Historical production rates,
   b. Planned maintenance and outage down times,
   c. Life expectancy of the current facilities.

   After careful review of the data, realistic production rates for each plant will be determined where the plants can operate safely and reliably. Further, these production rates will be reviewed and updated annually as needed. This process will allow the DUF6 Project to provide an improved conversion forecast (cost and schedule) to complete the DUF6 mission and begin decontamination and decommissioning of the facilities. The update to the lifecycle cost estimate is scheduled to be complete by September 30, 2023.

2. Review of DUF6 Facilities:
   The DUF6 project conducts facility health and condition assessments as well as annual reviews for operational improvements. The DUF6 contractor provides DOE a list of plant modifications to improve productivity and reliability of the facilities and safety of the employees. As funding allows these projects are implemented.

   In addition to these activities, DOE will conduct an evaluation that will include a comprehensive review of the DUF6 facilities to address ongoing technical issues as well as the plant's capabilities and inherent design flaws. The evaluation will consider historical data, expected degradation, ongoing maintenance issues, and the life expectancy of equipment in an effort to identify problems that cause disruptions to conversion operations. DOE will evaluate the collected data and compare production rates and uptime against historical data and the production rates developed for the lifecycle revision, which will occur in 2023. A report will be developed and finalized by September 30, 2024.

FEEDBACK

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