

GAO

Report to the Chairman, Committee on  
Energy and Natural Resources, U.S.  
Senate

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U.S. ENRICHMENT  
CORPORATION  
PRIVATIZATION

USEC's Delays in  
Providing Data Hinder  
DOE's Oversight of  
the Uranium  
Decontamination  
Agreement





Highlights of [GAO-06-723](#), a report to the Chairman, Committee on Energy and Natural Resources, U.S. Senate

# U.S. ENRICHMENT CORPORATION PRIVATIZATION

## USEC's Delays in Providing Data Hinder DOE's Oversight of the Uranium Decontamination Agreement

### Why GAO Did This Study

Prior to the 1998 privatization of the U.S. Enrichment Corporation (USEC), the Department of Energy (DOE) transferred about 45,000 metric tons of natural uranium to USEC to, among other things, be enriched to fulfill USEC's nuclear fuel contracts. About 9,550 metric tons were subsequently discovered to be contaminated with technetium, a radioactive metal, at levels exceeding the specification for nuclear fuel. Although DOE has not admitted liability, DOE and USEC have entered into agreements under which USEC is decontaminating the uranium. DOE has compensated USEC for its decontamination costs in several ways, including using proceeds from sales of government-owned clean uranium. GAO was asked to examine (1) USEC's progress in decontaminating uranium and (2) DOE's oversight of USEC's decontamination activities. A forthcoming GAO legal opinion will address DOE's legal authority to transfer clean uranium to USEC for sale and use the proceeds to compensate USEC for its decontamination services.

### What GAO Recommends

GAO recommends that DOE (1) clarify with USEC the department's oversight role in the uranium decontamination agreement and (2) report to the Congress on, among other things, USEC's progress in decontaminating uranium and its costs. DOE agreed with our recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-06-723](http://www.gao.gov/cgi-bin/getrpt?GAO-06-723).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Gene Aloise at (202) 512-3841 or [aloisee@gao.gov](mailto:aloisee@gao.gov).

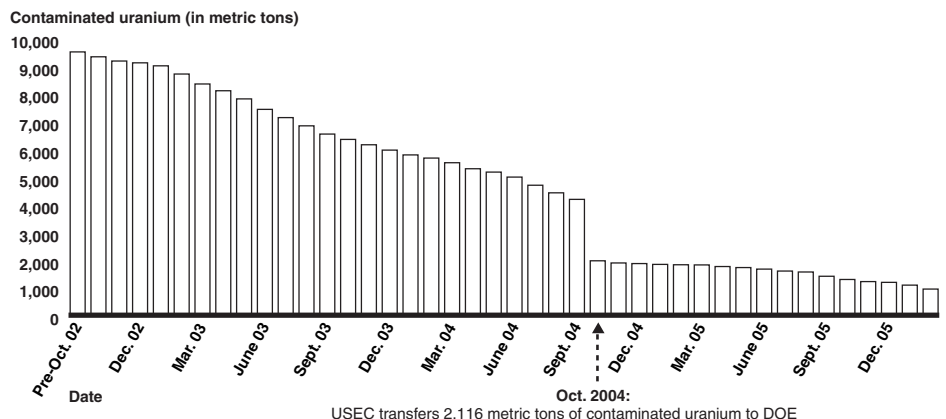
### What GAO Found

As of February 28, 2006, USEC reported that about 10 percent of the contaminated uranium that DOE transferred to the corporation prior to privatization remains to be decontaminated, or about 960 metric tons of the 9,550 contaminated metric tons transferred. DOE estimates USEC will finish decontaminating this uranium by the end of December 2006. Through the end of February 2006, USEC has invoiced DOE for a total of about \$152 million in decontamination costs.

DOE takes several steps to oversee USEC's uranium decontamination activities. DOE reviews monthly USEC reports that detail, among other things, the corporation's decontamination progress and costs. In addition, DOE, through the Defense Contract Audit Agency (DCAA), audits USEC to verify that USEC's actual costs match the amount DOE paid to the corporation and are in accordance with the provisions of the uranium decontamination agreement.

However, DOE has had difficulties completing some of its oversight because of USEC's delays in providing financial data and other information. DOE officials told us that USEC sometimes takes up to 6 months before responding to its inquiries about the corporation's monthly reports. As a result, DOE has some concerns about whether USEC consistently conducts decontamination work in a cost-effective manner. DCAA has also experienced significant delays obtaining USEC financial data that it requires for its annual audit of USEC's costs. DOE uses these data to verify that USEC's actual decontamination costs match what DOE paid USEC. Until DCAA's audits are complete, DOE cannot be certain whether the compensation it provided to USEC matches USEC's actual decontamination costs. As a result, USEC may need to repay money to the government or DOE may owe additional money to USEC upon completion of these audits. In addition, the Congress has not received information to assist in the appropriations process on the progress and costs of decontamination.

**USEC's Inventory of Technetium-Contaminated Uranium, June 2002 through February 2006**



Source: GAO presentation of USEC data.

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## **Abbreviations**

ASTM	American Society for Testing and Materials
DCAA	Defense Contract Audit Agency
DOE	Department of Energy
HEU	highly enriched uranium
ppb	parts per billion
USEC	U.S. Enrichment Corporation

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United States Government Accountability Office  
Washington, DC 20548

June 16, 2006

The Honorable Pete V. Domenici  
Chairman  
Committee on Energy and Natural Resources  
United States Senate

Dear Mr. Chairman:

Nuclear power plants rely on nuclear fuel that complies with certain quality standards to ensure its efficiency and to allow workers to handle it safely. One of the critical processes in the production of nuclear fuel is uranium enrichment—processing natural uranium to increase the concentration of the fissile uranium-235 isotope.<sup>1</sup> Prior to 1992, nuclear power plants purchased uranium enrichment services directly from the federal government and foreign suppliers. Specifically, the Department of Energy (DOE) and its predecessors—the Energy Research and Development Administration and the Atomic Energy Commission—operated uranium enrichment plants in Tennessee, Ohio, and Kentucky. Currently, only one uranium enrichment plant in the United States remains in operation—the Paducah Gaseous Diffusion Plant in Paducah, Kentucky.<sup>2</sup>

The Energy Policy Act of 1992 created the U.S. Enrichment Corporation (USEC) as a wholly owned government corporation to conduct and market uranium enrichment services to commercial nuclear power plants.

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<sup>1</sup>Natural uranium, the raw material required for the uranium enrichment process, comprises a mixture of several isotopes—forms of the same element with different atomic weights. Less than 1 percent of natural uranium is the isotope uranium-235—the fissile isotope used in nuclear reactors and in nuclear weapons. Natural uranium is enriched to a concentration of from 3 to 5 percent uranium-235 to produce fuel for nuclear power reactors. Natural uranium that is enriched to a concentration of over 90 percent uranium-235 is highly enriched and is weapons-grade material.

<sup>2</sup>DOE closed the K-25 uranium enrichment plant in Oak Ridge, Tennessee, in 1985. In addition, the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, ceased enriching uranium in 2001. DOE was maintaining the plant in a “cold standby” status to be restarted in the event of significant disruptions in the supply of enriched uranium until it was determined this condition was no longer required. DOE is currently transitioning the plant from cold standby to cold shutdown status. DOE expects to complete the transition to cold shutdown by September 30, 2006.

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USEC leases DOE's Paducah plant and is currently the sole domestic producer of enriched uranium for use as fuel in commercial nuclear power reactors.<sup>3</sup> USEC also leases DOE's Portsmouth Gaseous Diffusion Plant in Piketon, Ohio, which ceased enriching uranium in 2001. In July 1998, USEC was privatized through an initial public offering that resulted in a payment of about \$3.1 billion to the U.S. Treasury.<sup>4</sup>

Between USEC's creation in 1992 and its privatization in 1998, DOE transferred about 45,000 metric tons of natural uranium to the corporation for, among other things, fulfilling enrichment contracts with USEC's customers. In early 2001, USEC notified DOE that up to 9,550 metric tons of this uranium was potentially contaminated with technetium, a radioactive metal that is produced as a by-product of fission in a nuclear reactor, at levels exceeding the commercial specification for nuclear fuel.<sup>5</sup> According to USEC, replacing this contaminated uranium would cost USEC approximately \$238 million in 2001. (With recent increases in the market price of uranium, the 9,550 metric tons would now be worth approximately \$1.1 billion.) USEC requested that DOE replace USEC's contaminated uranium with uncontaminated (or clean) uranium from DOE's inventory.

DOE did not admit legal liability for compensating USEC for the contaminated uranium, nor, according to DOE officials, did DOE have enough available clean uranium in its inventory to replace all of USEC's

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<sup>3</sup>USEC also acts as executive agent in the implementation of a February 1993 agreement between the United States and the Russian Federation under which highly enriched uranium (HEU) from Russian nuclear weapons is diluted, or blended-down, and sold as nuclear fuel. This agreement, known as the HEU agreement, supports U.S. nonproliferation goals by eliminating material that could potentially be used in a nuclear weapon. See GAO, *Nuclear Nonproliferation: Implications of the U.S. Purchase of Russian Highly Enriched Uranium*, GAO-01-148 (Dec. 15, 2000).

<sup>4</sup>Of the \$3.1 billion gross proceeds to the government, \$1.9 billion was the result of the initial public offering, and the remaining \$1.2 billion resulted from the United States retaining cash from accounts held by USEC in the U.S. Treasury.

<sup>5</sup>Commercial specifications for nuclear fuel are established by the American Society for Testing and Materials (ASTM). ASTM's commercial specification, established in 1990, states that uranium should not contain more technetium than 1 part per billion prior to enrichment. Samples taken from 13 of the 1,255 storage cylinders that contain the uranium that DOE transferred to USEC indicated technetium contamination ranging from 11 to 148 parts per billion, all in excess of ASTM's commercial specification.

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contaminated uranium.<sup>6</sup> However, for a variety of reasons, discussed below, DOE and USEC agreed in June 2002 that, among other things, USEC would process some of the contaminated uranium at the Portsmouth plant for 15 months in order to remove the technetium.<sup>7</sup> USEC would initially pay about half of the costs associated with decontamination, and DOE would compensate USEC by taking title to some of USEC's depleted uranium—a product that is generated by the uranium enrichment process—reducing USEC's costs for eventually disposing of this material. As part of the June 2002 agreement, USEC agreed to formally release the department from any potential claims of liability as USEC decontaminated the uranium. In addition, the June 2002 agreement permitted DOE to replace some of USEC's contaminated uranium with clean uranium from its own inventory. Under these circumstances, USEC also agreed to release DOE from any potential claims of liability if the contaminated uranium was replaced.

According to DOE and USEC officials with whom we spoke and documents we reviewed, the June 2002 agreement to compensate USEC for decontaminating uranium provided the following benefits:

- *Maintaining a domestic uranium enrichment capability*—USEC committed to maintain a minimum production level at the Paducah plant, which is now the sole domestic plant for producing enriched uranium following USEC's decision to cease uranium enrichment at Portsmouth. Under the USEC Privatization Act of 1996, USEC has an exclusive option to lease DOE's uranium enrichment plants.
- *Deploying advanced uranium enrichment technology*—The June 2002 agreement placed USEC on a clearly defined schedule to deploy a new, more advanced uranium enrichment technology. USEC's current enrichment technology—gaseous diffusion—was developed during World War II. Gaseous diffusion is very inefficient and costly, compared with the

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<sup>6</sup>After USEC notified DOE that up to 9,550 metric tons of its uranium was contaminated, DOE determined that about 5,517 metric tons of uranium in DOE's inventory was also contaminated with technetium. In addition, DOE took title to 2,116 metric tons of contaminated uranium from USEC in October 2004 in exchange for clean uranium from DOE's inventory. This exchange resulted in a total of about 7,633 metric tons of contaminated uranium in DOE's inventory. All of the contaminated uranium would eventually need to be decontaminated before DOE could make it commercially available.

<sup>7</sup>The Portsmouth plant was available to perform the uranium decontamination because USEC had ceased uranium enrichment operations there in 2001 due to the high costs of operating the plant in an increasingly competitive uranium enrichment market.

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technology USEC's foreign competitors use, which is based on using centrifuges to enrich uranium. For example, centrifuges require approximately 5 percent of the energy required by gaseous diffusion technology. In the June 2002 agreement, USEC committed to deploy an advanced technology by 2009. DOE and USEC believe that enriching uranium through centrifuges will increase USEC's cost effectiveness and competitiveness and will help ensure a continued domestic uranium enrichment capability.

- *Employing workers at the Portsmouth plant*—Decontamination facilities at the Portsmouth plant would employ USEC employees who would otherwise be laid off following USEC's decision to close the plant. Under the USEC Privatization Act of 1996, DOE is responsible for a portion of severance and other worker transition costs incurred in connection with persons who formerly worked for DOE or a DOE contractor and who now work for USEC. Therefore, continuing the employment of these individuals allows DOE to delay or avoid these costs.
- *Reducing uranium decontamination costs*—Both DOE and USEC have uranium inventories that need to be decontaminated before the uranium can be sold commercially. DOE believed that having USEC conduct the decontamination work would result in significant cost savings. This is because USEC has the unique capability of using uranium at the Paducah plant that does not need to be decontaminated as much as would be required if the uranium were to be sold commercially. In addition, USEC officials told us that the corporation developed an exclusive, cost-effective technology for separating technetium from the contaminated uranium, which these officials said gave USEC a unique capability to do the decontamination work.

Decontamination of uranium under the June 2002 agreement between DOE and USEC was intended, as a trial period, to last for 15 months. At the conclusion of this period, USEC would release DOE from potential claims of liability for at least 2,800 metric tons of contaminated uranium, regardless of the amount actually decontaminated.<sup>8</sup> Over the 15-month period of the June 2002 agreement, DOE would attempt to find other entities besides USEC that could either replace or remediate USEC's remaining contaminated uranium. DOE assessed various options and concluded that USEC's decontamination process and existing facilities

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<sup>8</sup>Between June 2002 and September 2003, the 15-month period of the agreement, USEC actually decontaminated about 2,900 metric tons of uranium.



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made the corporation uniquely qualified to decontaminate the uranium. As a result, in April 2004, DOE agreed that USEC should continue decontaminating uranium.<sup>9</sup> DOE agreed to compensate USEC for these decontamination costs using appropriated funds instead of taking title to USEC's depleted uranium as under the 2002 agreement.<sup>10</sup>

In December 2004, DOE and USEC signed another agreement—which DOE and others have referred to as a “barter arrangement”—that again modified the way USEC was compensated. Instead of using appropriated funds to compensate USEC for its decontamination costs, as done under the April 2004 agreement, or taking title to USEC's depleted uranium, as done under the June 2002 agreement, DOE agreed to transfer clean uranium from its inventory to USEC. USEC would then sell this clean uranium on the commercial market and use the proceeds to pay its decontamination costs for its remaining contaminated uranium.<sup>11</sup> These proceeds also would be used to compensate USEC for its costs of decontaminating uranium in DOE's inventory.

DOE did not request appropriations for uranium decontamination for fiscal year 2005. Instead, DOE compensated USEC for its decontamination work, as specified in the December 2004 agreement. In November 2005, Congress expressly authorized DOE to “barter, transfer or sell uranium” and to use any proceeds from such transactions to decontaminate uranium held by DOE.<sup>12</sup>

Questions have been raised about certain aspects of the December 2004 agreement, under which proceeds from the sale of government-owned uranium are used to compensate USEC for its decontamination services.

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<sup>9</sup>DOE and USEC signed two agreements in September 2003 and November 2003 that extended decontamination work through December 2003. In addition, the April 2004 agreement retroactively included decontamination work conducted from December 2003 through April 2004.

<sup>10</sup>USEC's allowable decontamination costs under the April 2004 agreement included direct and indirect costs, plant overhead costs incurred in operating the facilities for processing the contaminated uranium, costs related to uranium storage cylinders, audit support costs, and other expenses of processing the contaminated uranium. USEC was not entitled to earn a profit.

<sup>11</sup>USEC's allowable costs under the December 2004 agreement were essentially the same as under the April 2004 agreement; again, USEC was not entitled to earn a profit.

<sup>12</sup>Energy and Water Development Appropriations Act, 2006, Pub. L. No. 109-103, § 314, 119 Stat. 2247, 2281 (Nov. 19, 2005).

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Because DOE has decided not to seek appropriations to compensate USEC, Congress has not received information on the decontamination program's progress and costs as part of the annual budget process. We will be issuing a separate legal opinion regarding DOE's legal authority to transfer clean uranium to USEC for commercial sale and to use the resulting proceeds to compensate USEC for its decontamination services prior to November 2005.

In this context, we examined (1) USEC's progress in decontaminating uranium and (2) DOE's oversight of USEC's uranium decontamination activities. To accomplish these objectives, we reviewed the preprivatization agreements between DOE and USEC that transferred uranium inventories to the corporation; memorandums of agreement and memorandums of understanding between DOE and USEC on the decontamination of technetium-contaminated uranium; DOE and USEC memorandums concerning DOE's potential liability to replace uranium or compensate USEC; Federal Acquisition Regulations; and relevant statutes, including the Energy Policy Act of 1992 and the USEC Privatization Act of 1996. We also examined USEC reports detailing its monthly progress in decontaminating uranium and its commercial sales of uranium. We also reviewed decontamination cost data USEC submitted to DOE. In addition, we interviewed officials from DOE's Office of Nuclear Energy; Office of General Counsel; Office of Environmental Management; Office of the Under Secretary for Energy, Science, and Environment; the Portsmouth and Paducah Project Office; and the Oak Ridge Operations Office. We interviewed officials with USEC and officials from the Defense Contract Audit Agency (DCAA), which conducts audits of USEC's decontamination costs. Additional information on our scope and methodology can be found in appendix I. We conducted our work between August 2005 and May 2006 in accordance with generally accepted government auditing standards, which included an assessment of data reliability and internal controls that determined that the data were sufficiently reliable for the purposes of this report.

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## Results in Brief

As of February 28, 2006, USEC reported that about 10 percent of the contaminated uranium that DOE transferred to the corporation prior to privatization remains to be decontaminated, or about 960 metric tons of the 9,550 metric tons transferred. USEC estimates it will finish decontaminating this uranium by the end of December 2006. Through the end of February 2006, USEC has invoiced DOE about \$152 million for its decontamination costs. About \$62 million of USEC's compensation was from the proceeds generated from the commercial sale of clean uranium

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that DOE transferred as compensation under the December 2004 agreement. DOE has also paid USEC about \$62 million from appropriations to compensate the corporation for its decontamination services. In addition, DOE has compensated USEC for its decontamination services by taking title to approximately 30,000 metric tons of USEC's depleted uranium, which DOE estimated in 2004 would cost the department about \$27 million to convert to a more stable form.

DOE takes several steps to oversee USEC's uranium decontamination activities; however, DOE has been unable to complete some of its oversight because it has not obtained some financial and other data from USEC. For example, DOE reviews monthly USEC reports that detail, among other things, the corporation's decontamination progress and costs, remaining contaminated uranium inventories to be processed, and technetium contamination levels in uranium cylinders before and after processing. In addition, DOE, through DCAA, audits USEC to verify USEC's actual decontamination costs. Finally, DOE tracks the proceeds USEC generates from selling clean uranium that DOE transferred to the corporation under the December 2004 agreement.

DOE has had difficulties completing some of its oversight because of USEC's delays in providing financial data and other information. DOE officials told us that USEC sometimes takes up to 6 months before responding to its inquiries about the corporation's monthly reports. As a result, DOE has some concerns about whether USEC consistently conducts decontamination work in a cost-effective manner. For example, when DOE questioned USEC about its worker training and overtime charges, DOE officials told us that USEC often only selectively responded to these questions. USEC officials told us that they attempt to provide answers in a timely way, but that delays sometimes occur when personnel from both DOE and DCAA were asking similar questions. USEC officials told us that they were sometimes confused about whether they should respond to DOE, DCAA, or both. Moreover, USEC indicated that DOE's inquiries were often poorly communicated and not delivered to the appropriate personnel in a timely fashion. In addition, USEC officials told us that DOE often requests very detailed data that are difficult to provide quickly. DOE officials indicated that they believed that the inquiries were adequately communicated and delivered to the appropriate USEC personnel in a timely fashion. Further, DOE officials stated that although some inquiries were more detailed, this certainly would not have justified the delays in USEC's responses to the department. DCAA has also experienced significant delays obtaining the detailed financial data from USEC that it requires for its annual audit of USEC's costs, which DOE uses

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to verify that USEC's actual decontamination costs match what DOE paid USEC. A Federal Acquisition Regulation contract clause, included in DOE's agreements with USEC, requires USEC to provide financial data detailing its indirect costs within 6 months of the end of each of USEC's fiscal years.<sup>13</sup> DCAA requires this information to complete its audit. However, USEC has not submitted these data to DOE or DCAA for its uranium decontamination costs covering any period since July 2002, and DCAA has yet to complete an annual audit of these costs. USEC officials told us the delays are due to a number of factors, including limited internal accounting resources that are familiar with federal requirements and extended negotiations with DOE over how employee pension and post-retirement benefits should be treated in USEC's accounting systems. DOE officials with whom we spoke disagreed that these reasons should cause such a significant delay in providing this information to DCAA. Until DCAA's audits are complete, DOE cannot be certain whether the compensation it provided to USEC matches USEC's actual decontamination costs. As a result, upon completion of these audits, USEC may need to pay money to the government, or DOE may owe additional money to USEC. USEC asserts that its decontamination costs have exceeded DOE's compensation of the corporation by about \$3 million. However, DOE has refused to pay this difference until USEC supplies DCAA with the required financial data to complete DCAA's audits.

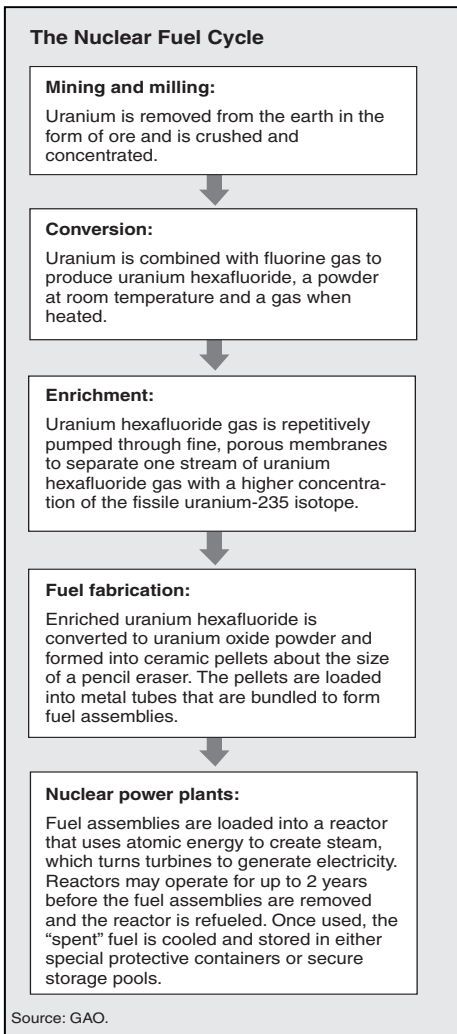
We are recommending that the Secretary of Energy clarify with USEC (1) the specific oversight steps that DOE and DCAA conduct and (2) procedures that USEC should follow in responding to the department's and DCAA's questions on the corporation's performance. In addition, to aid the Congress's continuing oversight of DOE's activities, we are further recommending that the Secretary provide information in DOE's annual budget request on, among other things, the remaining amount of uranium to be decontaminated, the total expected costs of the decontamination, and DCAA's progress in auditing USEC's costs.

We provided a draft of this report to DOE and USEC for comment. DOE and USEC agreed with the recommendations, but commented that the report would be more accurate if it acknowledged the value and successful performance of the program. We believe our draft report clearly described what DOE and USEC officials told us were the benefits of the uranium decontamination agreements.

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<sup>13</sup>Federal Acquisition Regulation § 52.216-7.

## Background



Uranium undergoes a number of processing steps in the production of nuclear fuel. To ensure its efficiency and ability to be used safely in nuclear reactors, nuclear fuel must meet rigorous technical specifications. For example, if certain contaminants are present in the material, they must be at or below specified levels so as not to harm workers or the environment or contaminate equipment.

Technetium, a radioactive metal that is produced as a by-product of fission in a nuclear reactor, is considered a contaminant by commercial specifications for nuclear fuel. Its presence in the nuclear fuel production process can contaminate equipment, lead to increased worker radiation doses, and raise environmental concerns. Therefore, specifications require that uranium that is to be enriched should contain no more technetium than one part per billion. USEC first discovered that some of the uranium DOE previously transferred to the corporation may have been contaminated with technetium in March 2000, when DOE requested that USEC sample uranium storage cylinders for technetium content.<sup>14</sup> DOE believed that, during the 1970s, technetium-contaminated recycled uranium that it processed through certain production lines at the Paducah plant inadvertently left residual amounts of technetium in certain equipment. Subsequent processing of uranium using that equipment contaminated the material.<sup>15</sup> USEC was able to determine that up to 9,550 metric tons of the 45,000 metric tons of uranium that DOE had transferred to the corporation prior to privatization had been processed through the contaminated production lines at Paducah and therefore was contaminated with technetium. USEC's initial sampling indicated technetium contamination levels ranging from 11 to 148 parts per billion, all in excess of the commercial specification of one part per billion. In addition, DOE was able to determine that about 5,500 metric tons of uranium in its inventory had also been processed through the contaminated production lines at the Paducah plant and was also likely to be contaminated with technetium.

<sup>14</sup>DOE requested this information to assist in the characterization of potential contaminants in its depleted uranium inventories in support of its planned depleted uranium conversion program, which will convert the depleted uranium to a more stable form for reuse or disposal.

<sup>15</sup>DOE closed the contaminated production lines at Paducah in 1977. Any uranium processed at Paducah after that date was therefore not technetium contaminated.

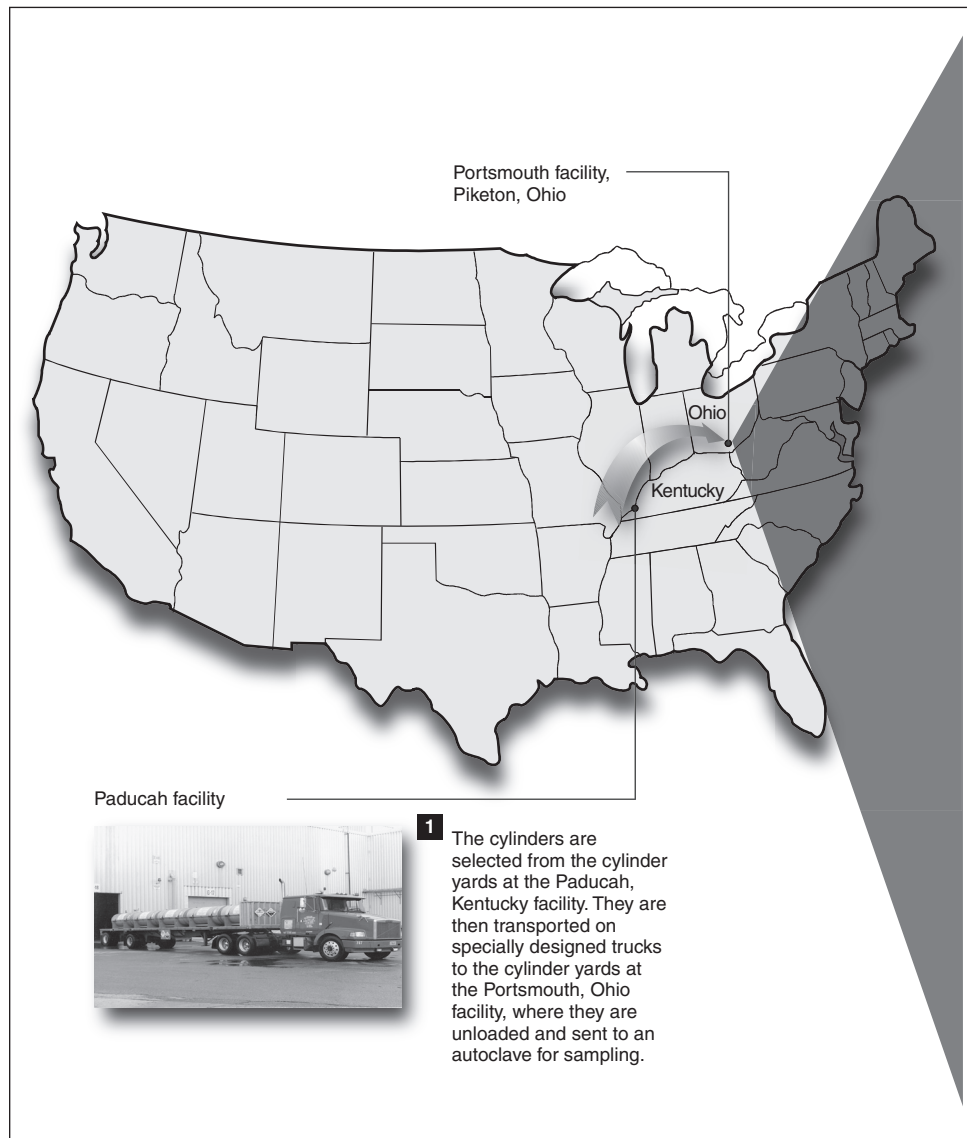
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USEC conducts uranium decontamination work using equipment at the Portsmouth plant. Figure 1 illustrates the decontamination process.

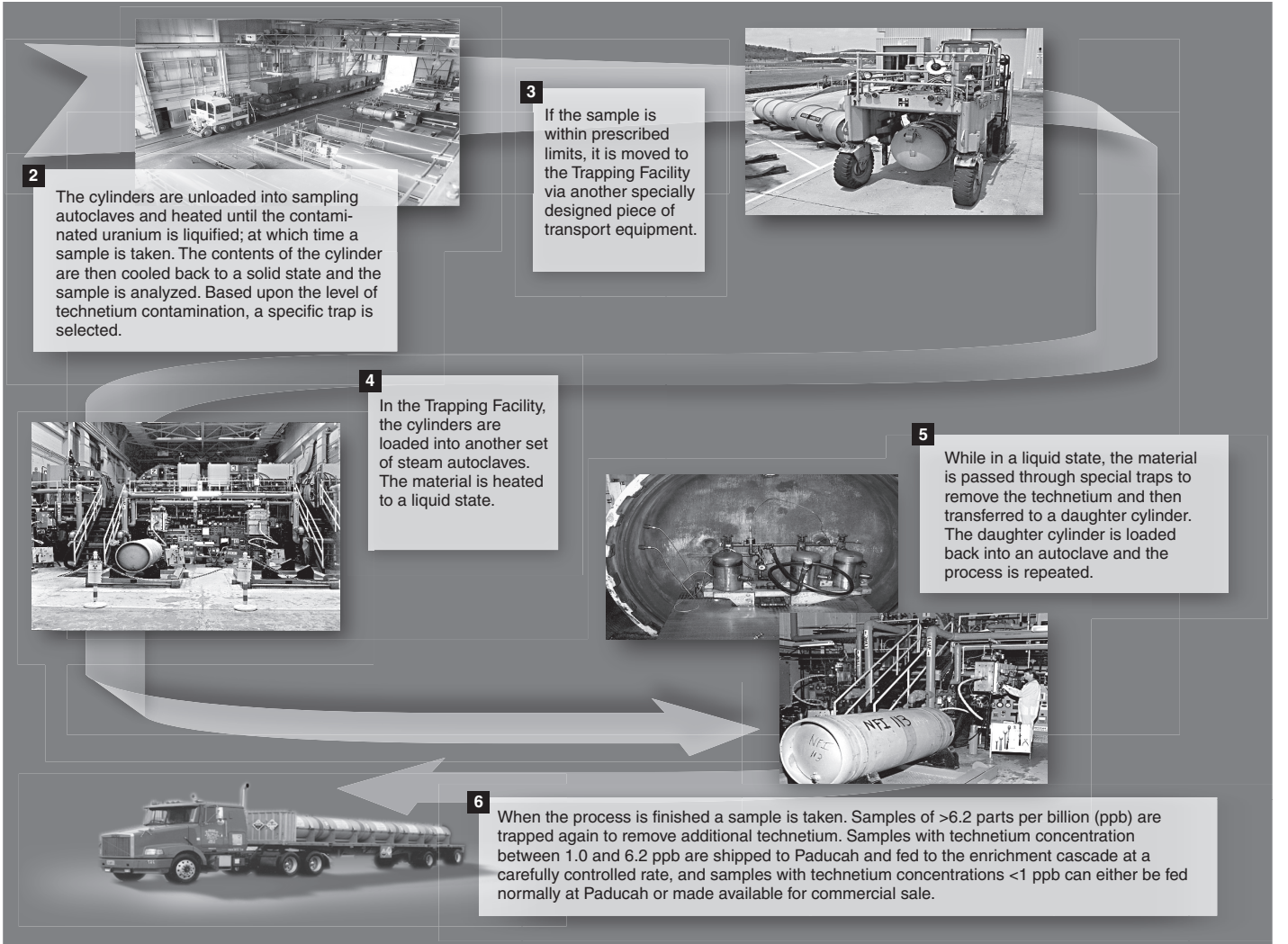
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**Figure 1: USEC's Uranium Decontamination Process**







Sources: GAO analysis of USEC data; photos, USEC; map, Art Explosion.

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## USEC Reported About 10 Percent of the Contaminated Uranium DOE Transferred to the Corporation before Privatization Remains to Be Decontaminated

Through the end of February 2006, USEC reported that about 960 metric tons, or 10 percent, of the 9,550 metric tons of technetium-contaminated uranium transferred to it by DOE prior to privatization remains to be decontaminated. DOE estimates USEC will finish decontaminating this uranium by the end of December 2006. In total, USEC has decontaminated about 6,500 metric tons of its contaminated uranium. Specifically:

- USEC decontaminated nearly 3,600 metric tons of its inventory between June 2002 and December 2003 under the terms of the June 2002 agreement between USEC and DOE.<sup>16</sup> Under this agreement, DOE compensated USEC for its decontamination costs by taking title to some of USEC's depleted uranium, reducing USEC's costs for eventually disposing of the material.<sup>17</sup>
- About 2,050 metric tons of USEC's uranium were decontaminated between December 2003 and December 2004 under the terms of the April 2004 agreement between USEC and DOE.<sup>18</sup> DOE compensated USEC for its decontamination costs using appropriated funds.<sup>19</sup>
- USEC decontaminated approximately 842 metric tons of its uranium between December 2004 and February 2006 under the December 2004 agreement, which provided that USEC cover its decontamination costs using proceeds from the commercial sale of clean uranium transferred from DOE's inventory to USEC for sale.

The June 2002 agreement between DOE and USEC also provided for DOE to replace some of USEC's contaminated uranium with clean uranium

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<sup>16</sup>Decontamination of USEC's contaminated uranium under the June 2002 agreement was intended to last for 15 months. However, DOE and USEC also signed two agreements in September 2003 and November 2003 that extended decontamination work through December 2003.

<sup>17</sup>DOE agreed in the June 2002 agreement to pay USEC's site infrastructure costs (e.g., indirect costs such as utilities and other plant overhead costs) using appropriations, subject to availability.

<sup>18</sup>Although DOE and USEC did not sign this agreement until April 2004, it retroactively included decontamination work beginning in December 2003.

<sup>19</sup>The April 2004 agreement also provided a performance incentive to USEC. If USEC successfully decontaminated more than 1,750 metric tons of uranium before October 2004, DOE would take title to some depleted uranium in addition to compensating USEC for its decontamination costs.

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from DOE's inventory.<sup>20</sup> In October 2004, DOE exchanged 2,116 metric tons of USEC's contaminated uranium with an equal amount of clean uranium from its inventory.

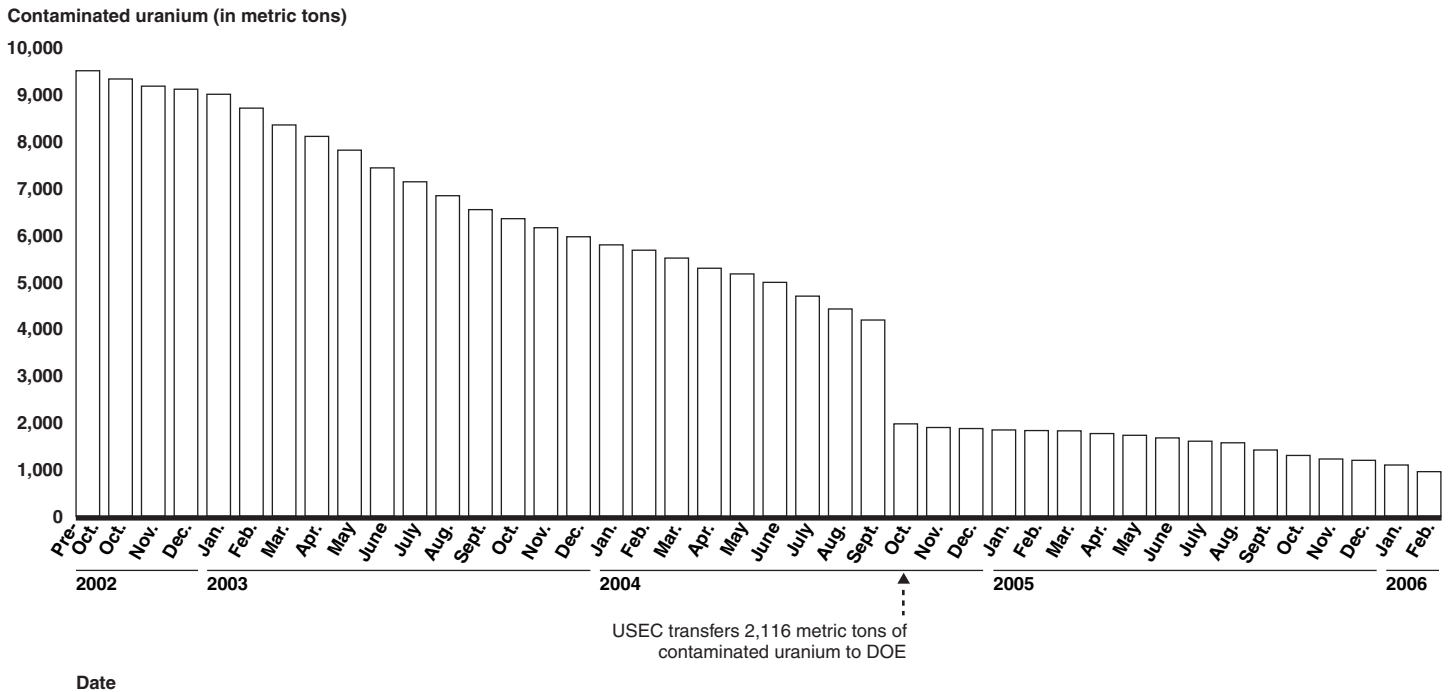
In addition to USEC's inventory, since October 2004 USEC has been decontaminating about 7,600 metric tons of contaminated uranium in DOE's inventory: 2,116 metric tons exchanged with USEC in October 2004 and 5,517 metric tons of contaminated uranium that were already in DOE's inventory. As of February 28, 2006, USEC had decontaminated 2,065 of the 2,116 metric tons it transferred to DOE in October 2004 and 248 of the 5,517 metric tons that was already in DOE's inventory.<sup>21</sup> DOE estimates USEC will finish decontaminating the 5,327 metric tons of contaminated uranium that remain in DOE's inventory by the end of October 2008. Figures 2 and 3 illustrate the amount of technetium-contaminated uranium in USEC's and DOE's inventories.

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<sup>20</sup>Specifically, the June 2002 agreement stated that DOE would, at its option, "exchange, replace, or reimburse" USEC to decontaminate an amount of uranium equal to 3,293 metric tons of contaminated uranium less the amount USEC actually decontaminated between June 2002 and March 2003. USEC decontaminated 1,177 metric tons of uranium between June 2002 and March 2003. Therefore, DOE transferred 2,116 metric tons of clean uranium from its inventory to USEC in October 2004 in exchange for an equal amount of contaminated uranium from USEC's inventory.

<sup>21</sup>USEC's costs for decontaminating DOE's uranium have also been paid using proceeds from the sale of the clean uranium transferred to USEC under the December 2004 agreement.

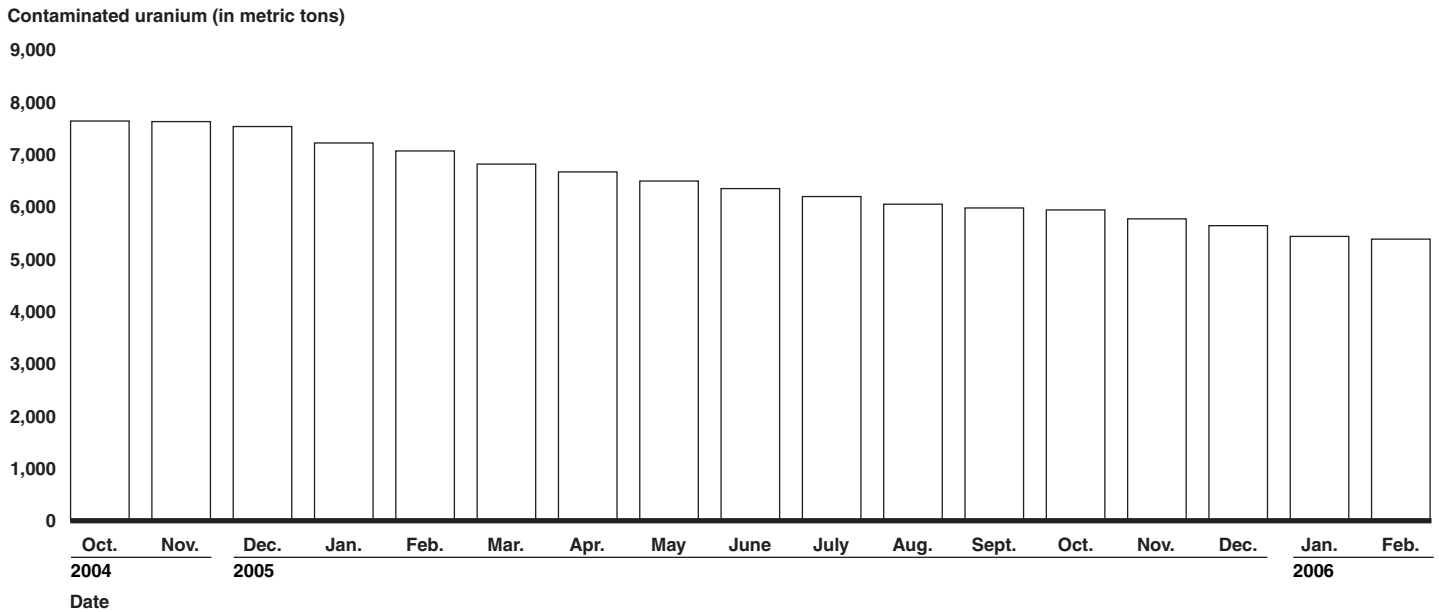
**Figure 2: USEC's Inventory of Technetium-Contaminated Uranium, June 2002 through February 2006**



Source: GAO presentation of USEC data.

Note: The large drop in USEC's inventory of contaminated uranium in October 2004 is the result of DOE's transfer of 2,116 metric tons of clean uranium to USEC in exchange for an equal amount of USEC's contaminated uranium.

**Figure 3: DOE's Inventory of Technetium-Contaminated Uranium, October 2004 through February 2006**



Source: GAO presentation of USEC data.

Note: DOE's inventory includes 2,116 metric tons of contaminated uranium USEC transferred to the department in October 2004 in exchange for 2,116 metric tons of clean uranium and the 5,500 metric tons of contaminated uranium that were already in DOE's inventory.

From June 2002 through the end of February 2006, USEC had invoiced DOE for decontamination costs totaling about \$152 million. Of this amount, about \$67 million was spent for direct costs, such as labor and decontamination equipment and supplies, and about \$85 million was spent for indirect costs. These indirect costs included utilities and other plant overhead costs and administrative costs. Table 1 details USEC's decontamination costs.

**Table 1: USEC’s Invoiced Decontamination Costs**

Nominal dollars in thousands, unadjusted for inflation

<b>Fiscal year</b>	<b>Labor</b>	<b>Other direct costs</b>	<b>Indirect costs</b>	<b>Total</b>
2002	\$2,260	\$633	\$3,411	<b>\$6,304</b>
2003	13,409	3,116	21,146	<b>37,672</b>
2004	13,331	3,112	21,719	<b>38,162</b>
2005	16,612	3,854	26,002	<b>46,469</b>
2006 (through February 2006)	7,940	2,366	12,983	<b>23,289</b>
<b>Total</b>	<b>\$53,552</b>	<b>\$13,082</b>	<b>\$85,262</b>	<b>\$151,896</b>

Source: GAO presentation of USEC data.

Note: Totals may not add because of rounding.

DOE has compensated USEC for its decontamination services in three ways. First, DOE has paid USEC about \$62 million in appropriated funds. Second, DOE officials told us that the department has taken title to about 30,000 metric tons of USEC’s depleted uranium, which DOE estimated in 2004 would cost the department about \$27 million to convert to a more stable form. Third, DOE compensated USEC for its remaining decontamination services using the proceeds from the commercial sale of clean uranium transferred from DOE to USEC pursuant to the December 2004 agreement between USEC and DOE.

In total, DOE has transferred about 1,100 metric tons of clean uranium to USEC for commercial sale under the December 2004 agreement. DOE transferred about 900 metric tons of clean uranium to USEC in December 2004, which USEC sold to four different buyers, resulting in total proceeds of \$62 million. DOE officials told us that increases in market prices for uranium resulted in more money than DOE originally estimated. These additional proceeds allowed USEC to decontaminate about 280 metric tons more uranium than DOE originally believed the sale would fund. By February 2006, however, USEC had completely spent the proceeds generated from the sale of the 900 metric tons of clean uranium. Therefore, DOE transferred an additional 200 metric tons of clean uranium to generate additional funds for decontamination. USEC sold this uranium in February 2006, resulting in total proceeds of \$22.4 million, which USEC expects will fund its decontamination services through June 2006. In addition, instead of transferring clean uranium to USEC and having USEC conduct additional uranium sales, DOE sold 200 metric tons of clean uranium in April 2006 to obtain money to compensate USEC for its

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decontamination services. These sales resulted in total proceeds of \$23.4 million, which USEC expects will fund its decontamination services from July 2006 through November 2006. According to DOE officials, the department itself will likely conduct additional uranium sales to fund USEC's decontamination services, rather than transferring additional uranium to USEC.

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## DOE's Oversight of USEC's Uranium Decontamination Activities Has Been Hindered by Delays in Obtaining Key Information from USEC

DOE takes several steps to oversee USEC's uranium decontamination activities, including reviewing monthly reports submitted by USEC detailing decontamination progress and costs and tracking the proceeds USEC generates from selling clean uranium that DOE has transferred to the corporation under the December 2004 agreement. DOE has also contracted with DCAA to audit USEC's decontamination costs. However, DOE and DCAA have been unable to complete some of their oversight steps because they have been unable to obtain some financial and other data from USEC in a timely manner. As a result, DOE has some concerns about whether USEC consistently conducts decontamination work in a cost-effective manner and is currently uncertain whether the compensation the department provided the corporation matches USEC's actual decontamination costs.

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## DOE Oversees USEC's Activities by Reviewing Monthly Reports and DCAA Audits and Conducting On-Site Verification

DOE takes several steps to oversee USEC's uranium decontamination activities. For example, DOE reviews a number of monthly reports that USEC submits to the department. These monthly reports contain detailed information on USEC's uranium decontamination activities. Specifically, these reports include the following:

- Information on the amount of uranium decontaminated each month, USEC's estimate of the remaining contaminated uranium in USEC's and DOE's inventories, and data on the level of technetium contamination for uranium storage cylinders before and after processing. These data verify whether the uranium in each cylinder meets commercial specification after it has been through the decontamination process.
- Summary data on USEC's monthly decontamination costs as well as USEC's estimate of the project's total cost when the decontamination is completed. USEC also submits a breakdown of its costs into specific categories, such as, among other things, labor, employee benefits, materials, site security, and electricity.

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- Information on waste generated from the decontamination process.

DOE officials told us that they perform detailed analyses of these reports to verify that USEC is consistently conducting decontamination work in a cost-effective and efficient manner. If these officials identify inconsistencies or trends in the data that generate concerns or questions, they follow up with USEC each month through written inquiries to resolve uncertainties and obtain adequate justification for costs such as overtime and training. DOE officials at the Portsmouth and Paducah plants also conduct on-site inspections of the uranium cylinders in order to verify that USEC's and DOE's actual uranium inventories match what appear in USEC's monthly reports.

DOE also tracks the proceeds from USEC's sale of clean uranium transferred to the corporation under the December 2004 agreement. DOE obtains copies of all sales contracts between USEC and the buyers of this uranium. These contracts provide detailed information on the buyer, the quantity sold, its sale price, and the date of the sale. In addition, USEC provides DOE with a copy of the wire transfer between the buyer and USEC to verify the receipt of funds. DOE requires that USEC segregate the proceeds of the uranium sales into an account separate from USEC's other funds. USEC maintains these funds in a separate brokerage account that invests in tax-exempt short-term securities. Each month, USEC submits a cost invoice to DOE for the decontamination work it performed during the preceding month. DOE then reviews and approves USEC's invoice and USEC withdraws money from the brokerage account equivalent to its invoiced costs. DOE monitors the withdrawal rate to estimate when more uranium will need to be sold to obtain additional funding for the account.

Finally, DOE has also contracted with DCAA to audit the annual costs submitted by USEC, which DOE uses to verify that USEC's decontamination costs match what DOE paid the corporation. To receive compensation for its indirect costs under the agreement, USEC provides estimates of its costs to DOE annually. These estimates, called "provisional billing rates," are the basis of DOE's compensation to USEC for its costs for that year. USEC submits monthly invoices to DOE using the provisional billing rates. DOE then compensates the corporation for its invoiced costs. Following the end of each calendar year, USEC is to submit financial data to DCAA that details the corporation's actual incurred indirect costs. DCAA uses these data in its audits to verify that



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USEC's incurred costs are reasonable.<sup>22</sup> Any differences between USEC's provisional billing rates and USEC's incurred decontamination costs would mean either that DOE owes USEC additional money or that USEC owes DOE for any compensation in excess of incurred costs.

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### USEC's Delays in Responding to Inquiries and Providing Financial Data Have Affected DOE's Oversight

DOE officials told us that they have had difficulties receiving complete and timely responses to their inquiries on USEC's monthly reports. Following their detailed analyses of USEC's monthly reports to verify that USEC is conducting decontamination work in a cost-effective and efficient manner, DOE often submits written inquiries to USEC to resolve inconsistencies or other concerns. For example, DOE officials have submitted numerous inquiries to USEC questioning the amount of overtime hours USEC has billed to the project, which these officials think are unusually high. DOE officials have also questioned the large amounts of worker training that USEC has billed to the project. In addition, DOE officials have also inquired about certain materials USEC has purchased. According to DOE officials, DOE submits about five concerns per month to USEC. However, in its comments on a draft version of this report, USEC told us that DOE submits about 15 inquiries per month.<sup>23</sup>

DOE officials told us that USEC sometimes takes up to 6 months before responding to DOE's inquiries and then often only selectively respond to certain questions. In comments on a draft version of this report, USEC disagreed with DOE and stated that it has responded completely to DOE's inquiries in an average of about 3 months. While USEC officials told us they attempt to provide timely responses to DOE's inquiries, they also stated that the inquiries often request very specific data that are difficult to provide quickly. In addition, USEC officials told us that delays sometimes occurred when personnel from both DOE and DCAA were asking similar questions. USEC officials stated that they were sometimes confused about whether they should respond to DOE, DCAA, or both. Moreover, USEC indicated that DOE's inquiries were often poorly communicated and not delivered to the appropriate personnel in a timely fashion. DOE officials

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<sup>22</sup>DCAA's audits compare USEC's claimed incurred costs with USEC's internal records and determines whether the costs are reasonable and in accordance with applicable laws, regulations, and the provisions of the December 2004 agreement. At DOE's request, DCAA has also conducted internal control reviews of USEC's accounting systems as well as several other reporting systems.

<sup>23</sup>In its comments on a draft version of this report, USEC also stated that DOE submitted a total of 342 inquiries between January 2004 and November 2005.

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indicated that they believed that the inquiries were adequately communicated and delivered to the appropriate USEC personnel in a timely fashion. Further, DOE officials stated that although some of the inquiries were more detailed, this would not justify the delays in USEC's responses to the department. USEC officials also told us that despite their belief that DOE's inquiries are often unnecessary and redundant, USEC is working to improve the timeliness and completeness of their responses. According to USEC officials, they met with DOE in March 2005 to try to reduce the size and redundancy of these inquiries. However, DOE officials stated that the reason for the apparent redundancy was USEC's inability to respond to the original inquiries in a timely manner.

DOE's inquiries have resulted in some benefits to the government. For example, USEC officials told us that, in response to DOE's inquiries, USEC has adjusted some monthly invoices to remove some charges USEC incorrectly billed to the project because of administrative errors. According to DOE officials, these errors were only discovered after DOE submitted written inquiries to USEC after it had analyzed USEC's monthly reports.

DCAA has also experienced delays in obtaining the financial data from USEC that are necessary to complete its annual audits of USEC's decontamination costs. At the end of each fiscal year, USEC has 6 months to submit financial data to DCAA detailing the corporation's indirect costs for that year.<sup>24</sup> DCAA then completes an audit of these costs, which allows DOE to verify that USEC's actual incurred costs for the year match what DOE paid the corporation. However, USEC has not submitted incurred cost data to DOE or DCAA for decontamination conducted during any time period from July 2002 to the present. DCAA has not completed any of its full annual audits of USEC's incurred decontamination costs. DCAA has completed five limited-scope audits of USEC's incurred costs for the individual months of December 2004 and January, March, May, and November 2005 to verify that USEC's incurred costs are in accordance with applicable laws, regulations, and the provisions of the December 2004 agreement. According to DCAA officials, these limited audits of USEC's

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<sup>24</sup>A Federal Acquisition Regulation contract clause, "Allowable Cost and Payment," is included in DOE's agreements with USEC. The clause requires a contractor to submit its final incurred cost rates to the cognizant federal agency within 6 months of the end of each of the contractor's fiscal years. Federal Acquisition Regulation § 52.216-7.

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monthly incurred costs have not found significant problems.<sup>25</sup> In addition, DCAA has conducted other audits to examine, among other things, USEC's internal controls and accounting systems. According to USEC, these other audits have not found significant deficiencies.

According to USEC officials, the delays in providing incurred cost data to DCAA are caused by several factors including

- limited internal accounting resources that are familiar with Federal Acquisition Regulations and government cost accounting standards
- protracted contract negotiations with DOE over how employee pension and post-retirement benefits should be treated in USEC's accounting systems.

DOE officials with whom we spoke disagreed that these reasons should cause such a significant delay in providing incurred cost data to DCAA. USEC has submitted a revised schedule to DOE that estimates when it will provide incurred cost data to DCAA. (See table 2.)

**Table 2: USEC's Schedule for Submitting Decontamination Cost Data to DCAA**

Decontamination work completed in	Date on which USEC estimates incurred cost data will be submitted to DCAA
July through December 2002	August 31, 2006
Calendar year 2003	December 31, 2006
Calendar year 2004	June 30, 2007
Calendar year 2005	December 31, 2007

Source: USEC.

In the absence of DCAA audits of USEC's annual decontamination costs, DOE has taken steps to protect the government's interests by limiting the amount of compensation paid to USEC. For example, USEC has stated

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<sup>25</sup>DCAA's audit of USEC's December 2004 costs found that about \$108,000 that DOE had paid USEC under the terms of the April 2004 agreement should have been paid instead under the terms of the December 2004 agreement. Similarly, DCAA's audit of USEC's January 2005 costs found that about \$220,000 of USEC's claimed costs were actually incurred prior to the December 2004 agreement and should have been paid by DOE under the terms of the April 2004 agreement. DCAA's audit of USEC's January 2005 costs also questioned about \$3,600 in USEC's direct labor and other procurement costs. USEC agreed that the \$3,600 had been overstated and subsequently offset these costs. Overall, DCAA officials with whom we spoke did not believe that these issues were significant.

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that its actual decontamination costs in calendar year 2004 exceeded DOE's compensation for that year. However, because DCAA was unable to complete its audit of USEC's costs for that year, DOE refused to pay this difference. In addition, provisional billing rates were not revised in 2005, and USEC was compensated using 2004 provisional billing rates. USEC officials told us that the failure to revise the provisional billing rates has only increased the difference between USEC's actual decontamination costs and the amount the corporation is being compensated. According to USEC officials, the difference between the corporation's actual decontamination costs and the amount it has been compensated is about \$3 million and will continue to grow until new billing rates are approved by DOE. DOE officials told us that they plan to approve new billing rates in June 2006. Furthermore, DOE officials said that the department will pay USEC any difference between the corporation's actual decontamination costs and the amount already compensated once USEC submits its actual incurred costs and DCAA has been able to complete its audits.

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## Conclusions

Almost 8 years after USEC's privatization, USEC and DOE are still dealing with the cleanup of technetium-contaminated uranium. According to DOE officials, the department decided to compensate USEC for decontaminating uranium to resolve potential legal liabilities and to help achieve other policy goals, such as the continuation of a reliable domestic source of uranium enrichment today and in the future. In our view, however, DOE has left the Congress and the public largely uninformed about these policy goals, as well as about the amount of progress USEC has made decontaminating uranium and the costs incurred in doing so. DOE deserves credit for attempting to protect the public interest by limiting the amount of compensation paid to USEC until the corporation provides the key financial data that are necessary for DOE's oversight of USEC's activities. However, because of the complexity of the issues, including the need to achieve multiple policy goals and the importance of maintaining a reliable, domestic source of uranium enrichment, it is important for DOE to provide the Congress with the information necessary for congressional oversight of the department's activities.

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## Recommendations for Executive Action

We are recommending that the Secretary of Energy clarify with USEC (1) the specific oversight steps that DOE and DCAA conduct and (2) procedures that USEC should follow in responding to the department's and DCAA's questions on the corporation's performance.

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In addition, to assist the Congress in its continuing oversight of the department, we further recommend that the Secretary of Energy report the following information in DOE's annual budget request to the Congress until USEC has completed uranium decontamination:

- the remaining quantities of uranium in USEC's and DOE's inventories that need to be decontaminated,
- the estimated costs of completing this decontamination work,
- the source of funds necessary to compensate USEC, and
- the progress DCAA has made completing the annual audits of USEC's decontamination costs.

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## Agency Comments and Our Evaluation

We provided a draft copy of this report to DOE and USEC for their review and comment. DOE's letter is presented as appendix II, and USEC's letter is presented as appendix III.

In its written comments, DOE agreed with our recommendations, but requested that any report to the Congress be done on an annual basis, as part of the annual budget process. We agree with DOE and have modified our recommendation to provide for DOE reporting uranium decontamination performance and cost information in its annual budget requests rather than semiannually.

Both DOE and USEC commented that the report would be more accurate if it acknowledged the value and the successful performance of the program. DOE's comments stated that the overall value of the program is not stated clearly and is somewhat overshadowed by detailed issues related to USEC's cost reports. USEC believes that the report would be more precise if it acknowledged the successful technical and financial performance of the program. The objectives of our review were to provide factual information on USEC's progress in decontaminating uranium and on DOE's oversight of USEC's uranium decontamination activities. Contrary to DOE's and USEC's assertions, our draft report clearly described what DOE and USEC officials told us were the benefits of the uranium decontamination agreements, including the amounts of uranium in USEC's and DOE's inventories that have been decontaminated, the technology developed to decontaminate the uranium, the continued employment of workers at the Portsmouth plant, and the maintenance of a reliable, domestic source of uranium enrichment. However, it is also

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important to note that these benefits did not come without significant cost. Specifically, DOE has provided over \$150 million in various forms of compensation to USEC. To provide detailed information concerning the overall value of the program was beyond the scope of this review.

USEC generally agreed with the draft report's findings and supported our recommendations to DOE. However, USEC commented that the report contained shortcomings in the presentation of its supporting analysis. Specifically, USEC said that the draft report does not acknowledge that USEC provided detailed invoice data to DOE that conformed to DOE's rules on invoice review. On the contrary, our draft report contained detailed information on the types of information provided to DOE including reports on the amounts of uranium decontaminated each month, the amounts of waste generated, and the decontamination costs incurred. USEC states that DOE's rules contain no requirements for incurred cost submissions. However, as our draft report stated, the contract clause in Federal Acquisition Regulation §52.216-7, which is specifically incorporated in DOE's agreements with USEC, requires contractors to submit their final indirect cost rates, based on actual costs, to the cognizant federal agency within 6 months of the end of the contractor's fiscal year. USEC has not complied with this requirement. In addition, USEC stated in its comments that the draft report's discussion of USEC's delays in responding to DOE's follow-up questions is incomplete and inaccurate. In response, we have modified our report to note USEC's disagreement with DOE officials' statements regarding the number of DOE inquiries each month and USEC's responsiveness.

USEC also stated that the draft report's title overstates the report's findings and implies a materiality to USEC's delays that is not supported in the body of the report. We disagree that the draft report's title makes this implication. USEC recommends that the title be changed to better reflect the report's recommendation that clarification of procedures would improve DOE's oversight of the uranium decontamination agreement. The purpose of the recommendation is not for DOE to change its oversight of USEC's activities, as is implied by USEC's suggested title. Rather, the recommendation is intended to encourage DOE to better communicate its existing oversight steps to USEC and instruct the corporation how to properly respond to the department's inquiries.

DOE and USEC also provided technical comments that we incorporated into the report as appropriate.

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We will send copies of this report to interested congressional committees, the Secretary of Energy, and USEC, Inc. We will also make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at [www.gao.gov](http://www.gao.gov).

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

Sincerely yours,

A handwritten signature in black ink that reads "Gene Aloise". The signature is written in a cursive style with a large, looped initial "G".

Gene Aloise  
Director, Natural Resources  
and Environment

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# Appendix I: Objectives, Scope, and Methodology

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At the request of the Chairman, Committee on Energy and Natural Resources, United States Senate, we examined (1) the United States Enrichment Corporation's (USEC) progress in decontaminating technetium-contaminated uranium transferred to it by the Department of Energy (DOE) prior to its privatization and (2) DOE's oversight of USEC's decontamination activities.

To accomplish these objectives, we reviewed the preprivatization agreements between DOE and USEC that transferred uranium inventories to the corporation; memorandums of agreement and memorandums of understanding between DOE and USEC on the decontamination of technetium-contaminated uranium, signed in June 2002, April 2004, October 2004, and December 2004; DOE and USEC legal memorandums detailing DOE's potential liability to replace uranium or compensate USEC; Federal Acquisition Regulations; and appropriate statutes, including the Energy Policy Act of 1992 and the USEC Privatization Act of 1996. We also interviewed officials from DOE's Portsmouth and Paducah Project Office; Oak Ridge Operations Office; Environmental Management Consolidated Business Center; Office of Environmental Management; Office of Nuclear Energy; Office of General Counsel; and Office of the Under Secretary for Energy, Science, and Environment. In addition, we interviewed USEC officials at the corporation's headquarters in Bethesda, Maryland, and at the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio. We also interviewed officials with the Defense Contract Audit Agency (DCAA), which conducts audits of USEC's decontamination costs.

To determine USEC's progress in decontaminating uranium, we reviewed USEC's monthly reports detailing its monthly decontamination progress as well as remaining uranium inventories to be decontaminated. We also reviewed USEC data on uranium storage cylinders processed each month and the specific amount of uranium in each cylinder. We also obtained USEC's monthly cost statements submitted to DOE, which detail USEC's monthly costs under a variety of categories, such as labor, plant overhead, and materials. We examined the reliability of uranium decontamination and cost data by obtaining responses from DOE to a series of data reliability questions covering issues such as data entry access, internal control procedures, and the accuracy and completeness of the data. We asked follow-up questions whenever necessary. We determined that these data were sufficiently reliable for the purposes of this report. Furthermore, we reviewed USEC's marketing strategy for selling clean uranium transferred to the corporation by DOE under the December 2004 agreement and reviewed USEC's sales reports submitted to DOE detailing the amount of uranium USEC sold to each buyer, the contract price of the



uranium, its delivery date, and the date of payment. In addition, we reviewed the sales contracts between USEC and buyers of the clean uranium as well as invoices confirming receipt of funds from each uranium sale. We also visited the Portsmouth Gaseous Diffusion Plant site to inspect uranium decontamination facilities and to interview DOE and USEC officials.

To assess DOE's oversight of USEC's uranium decontamination activities, we interviewed DOE officials that conduct oversight of USEC's decontamination work at the Portsmouth and Paducah Project Office, Oak Ridge Operations Office, and the Environmental Management Consolidated Business Center. We discussed DOE's processes for conducting analyses of USEC's monthly reports on decontamination progress and costs and the steps DOE takes to oversee USEC's sales of clean uranium transferred by DOE under the December 2004 agreement. We also discussed DOE's oversight with USEC officials. In addition, we obtained copies of five audits conducted by DCAA of USEC's monthly decontamination costs and interviewed DCAA auditors to discuss the objectives, scope, and methodology of DCAA's audit work.

We conducted our work between August 2005 and May 2006 in accordance with generally accepted government auditing standards.

# Appendix II: Comments from the Department of Energy



Department of Energy  
Washington, DC 20585

JUN 09 2006

Mr. Gene Aloise  
Director  
Natural Resources and Environment  
Government Accountability Office  
Washington, D.C. 20548

Dear Mr. Aloise:

Please find enclosed the Department of Energy's (DOE) comments on the draft report entitled "*U.S. Enrichment Corporation Privatization: USEC's Delays in Providing Data Hinder DOE's Oversight of the Uranium Decontamination Agreement (GAO-06-723)*."

We agree with the GAO proposed recommendations. We are enclosing comments to clarify and correct errors in the report. There are two comments we request be incorporated in the final report. First, the draft recommendation for DOE to report to Congress on a semi-annual basis is more frequent than for other programs. We request that any report to Congress be done on an annual basis to be part of the annual budget process.

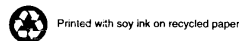
The second comment is that the overall value of the project is not stated clearly and is somewhat overshadowed by detailed issues related to U. S. Enrichment Corporation cost reports. We request GAO advise DOE on their view of the value of uranium decontamination program.

If you have any further questions, please contact Mr. Mark W. Frei, Deputy Assistant Secretary for Program Planning and Budget, at (202) 586-8754.

Sincerely,

  
James A. Rispoli  
Assistant Secretary for  
Environmental Management

Enclosure



# Appendix III: Comments from USEC, Inc.



**Philip G. Sewell**  
*Senior Vice President*

301/564-3305 *phone*  
301/564-3205 *fax*

June 1, 2006

By Electronic and FedEx

Ms. Diane B. Raynes  
Assistant Director,  
Natural Resources & Environment  
United States Government Accountability Office  
441 G Street, NW  
Washington, D.C. 20548  
raynesd@gao.gov

Re: May 19, 2006 Draft of GAO Report 06-723

Dear Ms. Raynes:

Thank you for the opportunity to comment on the draft GAO report. USEC appreciates the GAO's professionalism and diligence in reviewing a series of contractual arrangements between the Department of Energy ("DOE") and USEC Inc. and its subsidiary, the United States Enrichment Corporation ("USEC"). USEC voluntarily entered into these agreements at the request of DOE, and has implemented this program in a transparent and cost effective manner. The success of this arrangement illustrates how underutilized or impaired government assets can be used to achieve government and industry mission objectives within a highly constrained federal budget environment.

USEC supports the recommendations for follow-up executive action set forth on page 23 of the draft report. We would be pleased to support and assist DOE in actions to improve its oversight, and to keep the Congress fully abreast of developments in the program. We also concur with the conclusions that implicitly underlie these recommendations, namely that the basic technical and financial management of the program does not require any change, and that no additional legislative action is warranted at this time. Further, USEC notes that neither DOE's oversight of the program, the DCAA audits, or the GAO review, identified any irregularity or impropriety in the management of the proceeds from uranium sales or the application of those proceeds to the costs of the program. As listed in Attachment B to this letter, DCAA has conducted 14 separate audits of the program to date and has not found a single significant deficiency.

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Ms. Diane B. Raynes  
June 1, 2006  
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USEC also agrees with the GAO finding, stated on page 7 of the report, that “DOE has not been able to complete some of its oversight because it has not obtained some financial data from USEC.” Because our principal line of business is supplying commercial uranium enrichment to the private sector, we have not had a robust government contracts management capability. However, our new CEO, John Welch, has directed the company to take corrective action to address this shortcoming, and we are increasing our cost accounting staff, engaging a consulting firm to assist in preparing the incurred cost submissions, and working diligently to complete those submissions as soon as possible.

While USEC generally agrees with the report’s findings, we believe that there are two shortcomings in the presentation of its supporting analysis.<sup>1</sup>

First, the draft report does not acknowledge that USEC provided detailed invoice data to DOE that conformed to the requirements of DOE’s rules on invoice review. The monthly project status reports and the monthly invoices supplied by USEC provided ample information to support DOE oversight of the program, notwithstanding the delay in the submission of the incurred cost reports.

Each month, USEC provides a project status report that shows the amount of material processed during the month and the amount of contaminated material that remains to be processed. This report also indicates the project waste generated and shipped off-site during the month. Also included in the report are the current month and cumulative amounts invoiced, unbilled indirect costs, allowable financing costs incurred, and investment income earned from advanced sales of uranium.

Each month, USEC also provides DOE with an invoice that includes more than 50 pages of supporting detail for amounts being invoiced. The invoice is delineated into a work breakdown structure that allows DOE to see the cost of the various types of work performed during the month. The invoice detail also shows the hours worked by employee and direct wages for each department performing the work. The invoice also provides transaction descriptions for all of the “non-labor” costs being invoiced. Included within the invoice detail is an application of the approved billing rates used to invoice indirect costs. These reports and invoices provide DOE with abundant data to evaluate the program.

While the incurred cost submissions have been delayed, we note that the most recent DOE rules, published in April 2006 and entitled “Invoice Review Process” (Attachment D), contain no requirements for incurred cost submissions, and no requirement that would prohibit DOE from reviewing and approving invoices in the interim time pending submission of incurred cost reports. These rules set forth guidance to ensure that DOE personnel properly review invoices received from prime contractors. They direct the review of invoices to ensure that materials and/or services were delivered, costs were incurred in accordance with the scope of work, and direct costs appear reasonable in light of known performance. (See, for example,

<sup>1</sup> Detailed Comments on the draft report are set out in Attachment A to this letter.

Ms. Diane B. Raynes  
June 1, 2006  
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Attachment D at §2.1). The reports and invoices submitted by USEC would seem to be more than adequate to enable DOE to conduct the review contemplated by these rules.<sup>2</sup>

Second, the discussion in the draft report of USEC's delays in responding to follow-up questions is incomplete and inaccurate. The draft report states that DOE says it submits "about five concerns per month" to USEC and that "USEC sometimes takes up to 6 months before responding to DOE's inquiries and then only selectively responds to certain questions." [Draft Report at 20] These claims are simply not true. As is explained in Attachment A (at page 3) and illustrated on Attachment C, in the 23 months between January 2004 and November 2005, DOE sent USEC 342 inquiries, or an average of 15 a month. In 6 of the months, more than 25 inquiries were made per month, and in June 2005 alone DOE made more than 50 inquiries. The statement that USEC "sometimes takes up to 6 months before responding" is also inaccurate. In fact there was one and only one such delay, and that delay was due to a mix-up in communications discussed on page 20 of the draft report. Since the inception of the program in June 2002, USEC's response time to DOE questions has ranged from 4 to 184 days, with a weighted average response time of 91 days. Given the number and frequency of inquiries, we think this is a reasonable response time, but we are, nonetheless, working to improve it.

We note, in this connection, that the report would be more accurate if it distinguished between USEC's responses to DOE and its responses to the DCAA. As we stated in our comments on the draft Statement of Facts, in July 2005 USEC requested clarification as to who had lead audit responsibility (i.e. DOE or DCAA) and was informed by DCAA that all inquiries regarding financial information reflected on decontamination invoices would be coordinated through DCAA. Accordingly, USEC always provided prompt responses within 30 days to DCAA auditors since they were the official cognizant auditor.

The statement that USEC has "selectively" responded to DOE's questions is incorrect. We have answered some questions in phases, where portions of answers were provided in the initial response, followed by remaining portions at a later date. However, our records show that all questions were eventually answered in their totality and that DOE has not, in fact, made any inquiries about invoices for decontamination work performed since November 2005.

We also believe that the statement on page 20 of the draft report that DOE's inquiries have resulted in "some benefits" to the government requires clarification. While the statement is, strictly speaking, correct, the report does not mention the magnitude of the claimed benefits. As far as we are aware, the only benefits derived from DOE's inquiries are listed in footnote 24 of the draft report; namely, in two instances it was determined that costs should be attributed to one decontamination agreement rather than another and in one instance DCAA questioned \$3,600 in labor costs that USEC agreed to offset.<sup>3</sup> We note in this connection that the DCAA did not believe these issues were significant.

<sup>2</sup> The statement on page 20 of the draft report that DCAA has completed five "limited-scope" audits of USEC's incurred costs is misleading in that it implies that these were the only audits done. In fact, as is shown on Attachment B, DCAA conducted 9 audits in addition to those described on page 20.

<sup>3</sup> As the draft report recognizes, USEC has performed decontamination work under five separate contractual arrangements: the June 2002 agreement, two letter agreements, a work authorization, and a barter agreement, and

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Finally, USEC recommends that the title of the report be modified to better reflect the full scope of the body of the report. The draft title overstates and is therefore inconsistent with the body of the analysis and findings in the text of the draft report. The draft title also implies a materiality to USEC's delays that is not supported in the body of the report.

The draft report describes numerous steps that DOE takes to oversee the decontamination program. These steps, which are discussed in detail on pages 17 – 19 of the draft report, include reviewing USEC's monthly reports and DCAA audits and conducting on-site verifications. The draft report also identifies areas where USEC has been slow in providing information to DOE, but the body of the report puts the issue into better context. For example, page 7 of the draft report states that "DOE has been unable to complete *some* of its oversight because it has not obtained *some* financial and other data from USEC" [emphasis added]. Similarly, the summary page states that "DOE has had difficulties completing *some* of its oversight. . ." [emphasis added]. The draft title does not capture the essence of the statements in the text, nor does it reflect the recommendations in the report. A title that would better reflect the body of the report would be, "*Clarification of Oversight Procedures Would Improve DOE's Oversight of the Uranium Decontamination Agreement.*"

In conclusion, the uranium decontamination program has been a technical and financial success. In our meeting on May 16, GAO representatives stated that the GAO did not believe that an evaluation of the program was within the scope of its assignment, and, therefore, GAO believed it was neither necessary nor even appropriate to discuss whether the program had been a success. Nonetheless, USEC believes that the report would be more complete if it acknowledged the successful technical and financial performance of the program:

- Significantly, the GAO found no structural flaws in the December 2004 barter MOA or in USEC's implementation of that agreement. The agreements enabled DOE to leverage an item of government inventory in a manner that met program needs in an otherwise tight budget environment.
- USEC developed processes by which contaminated uranium could be cleaned – processes that were being tested, but had not been proven, in June 2002. The industry's knowledge base has been substantially increased by this program.
- USEC has performed all decontamination work with no profit.
- The program has preserved numerous high-quality jobs in southern Ohio.
- Because it operates the Paducah gaseous diffusion plant, USEC can accept uranium that is still slightly contaminated with technetium and, therefore, could not be sold

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DOE has compensated USEC by taking title to tails material, paying USEC with appropriated funds, and delivering clean uranium to USEC for USEC to sell. This multitude of complex and varying arrangements, covering periods from a short as two weeks to over two years, has imposed significant administrative burdens on USEC.

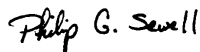
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commercially because it does not meet the ASTM specification.<sup>4</sup> This ability – unique to USEC – saved the taxpayer nearly 50% of the cost of decontamination.

- In 2002 the cost of natural uranium was \$30.50 KgU. Thus, had DOE replaced USEC's 9,550 MTU in that year the cost to the taxpayer would have been \$291 million. Based on our experience to date, we anticipate that the total cost of cleaning all 9,550 MTU to either the ASTM specification or the (less restrictive) Paducah specification will be approximately \$168 million. It should be noted, in this connection, that since 2002 the price of natural uranium has increased by almost 300% – to \$120 per KgU. Replacing the contaminated material at current prices would cost \$1.1 billion.

- Finally, USEC has cleaned 2,057 MTU of DOE uranium under the program. In total, through December 31, 2005, USEC had cleaned nearly 8,300 MTU of contaminated UF<sub>6</sub> at a cost of only \$146 million – or about \$17.61 per KgU. Given that, today, the market price for natural uranium is about \$120 per KgU, this represents a 681% return on investment.

Sincerely,



Philip G. Sewell

<sup>4</sup> The ASTM limit on technetium is 1ppb; USEC can accept natural uranium containing as much as 6 ppb technetium (so long as the average doesn't exceed 3 ppb). This means that the contaminated material generally needs to be trapped only twice, rather than three times, which significantly lowers the cost of decontamination.

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Gene Aloise, (202) 512-3841 or [aloisee@gao.gov](mailto:aloisee@gao.gov)

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## Staff Acknowledgments

In addition to the contact named above, Diane B. Raynes (Assistant Director), Ryan T. Coles, Jessica A. Evans, Doreen S. Feldman, Christopher E. Ferencik, Neill W. Martin-Rolsky, Mehrzad Nadji, Omari A. Norman, Susan A. Poling, Katherine M. Raheb, Keith A. Rhodes, Susan D. Sawtelle, and Rebecca Shea made key contributions to this report.



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