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Uranium Enrichment Decontamination and Decommissioning Fund: Status and Funding Issues

Decades of uranium enrichment by the federal government resulted in the contamination of buildings and structures, generated substantial volumes of radioactive and other hazardous wastes, and resulted in environmental contamination of the soil, sediments, surface water, and groundwater at federal uranium enrichment facilities. The Energy Policy Act of 1992 (P.L. 102-486; Title XI) established the Uranium Enrichment Decontamination and Decommissioning (UED&D) Fund to support the closure of federal uranium enrichment facilities and the remediation of related waste and contamination. With monies appropriated annually from the UED&D Fund, the Department of Energy’s Office of Environmental Management (DOE-EM) administers closure and remediation of federal uranium enrichment facilities and reimburses eligible uranium and thorium licensees for cleanup activities. As of FY2019, DOE estimates that remaining liabilities associated with the UED&D Fund range from \$40.4 billion to \$47.9 billion (see **Table 1** for a site breakout). The end-of-year balance of the UED&D Fund was \$2.2 billion in FY2018, which presents an issue for Congress about how and whether to provide funding for the remaining liabilities. DOE estimates that remediation and closure at these sites may continue for decades, after which the federal government would be responsible for long-term stewardship of residual contamination and waste containment at these sites.

Table 1. DOE Estimates of Remaining UED&D Fund Liabilities as of FY2019

Site/Activity	Year of Estimated Completion	Low Estimate (\$M)	High Estimate (\$M)
Oak Ridge, TN	2046	\$1,112	\$1,485
Paducah, KY	2065-2070	\$27,811	\$33,905
Portsmouth, OH	2039-2041	\$11,506	\$12,521
U/Th Reimbursements		\$131	\$131
Total		\$40,429	\$47,911

Source: CRS compiled completion estimates from the U.S. Department of Energy (DOE), *FY2020 Budget Justification*, vol. 5: Environmental Management, p. 41. CRS compiled cost estimates from DOE, *FY2019 Budget Justification*, vol. 5: Environmental Management, p. 84 and pp. 93-99. DOE did not provide cost estimates in the FY2020 budget request.

Notes: D&D = Decontamination and Decommissioning. Oak Ridge projects: Nuclear Facility D&D-East Tennessee Technology Park (OR-0040), East Tennessee Technology Park Contract/Post-Closure Liabilities/Administration (OR-0102). Paducah projects: Nuclear Facility D&D (PA-0040), Contract/Post-Closure Liabilities/Administration (PA-0102), and Community and Regulatory Support (PA-0103). Portsmouth projects: Nuclear Facility D&D (PO-

0040), Contract/Post-Closure Liabilities/Administration (PO-0103), Community and Regulatory Support (PO-0104). U/Th = Uranium and Thorium Reimbursements (HQ-UR-0100). Dollars are presented in millions and may not sum due to rounding.

Uranium Enrichment Facilities

The federal government, through DOE’s predecessor agencies (e.g., Atomic Energy Commission), enriched uranium in the fissile isotope U-235 for use in both commercial nuclear power fuel and defense activities (e.g., nuclear warhead production and Naval Nuclear Propulsion Program). The federal government constructed three *gaseous diffusion* facilities to enrich uranium for national defense purposes: the Paducah site in Kentucky, the Portsmouth site in Ohio, and the Oak Ridge site in Tennessee. Once the national defense stockpile of enriched uranium was deemed sufficient for military purposes in the early 1960s, the three plants focused on providing enriched uranium fuel for the growing fleet of commercial nuclear power plants at that time. In 1992, Congress sought to transition the federal government out of the commercial nuclear fuel business. Title IX of the Energy Policy Act of 1992 established the U.S. Enrichment Corporation (USEC) as a federal corporation that would be privatized over time. The act authorized DOE to lease federal enrichment facilities to USEC to continue the production of enriched uranium fuel for electric utilities. These three facilities have since ceased operations at various times: Paducah (2013), Portsmouth (2001), and Oak Ridge (1985). The U.S. government does not have an operational facility to enrich uranium for defense purposes. One operational commercial uranium enrichment facility is located in New Mexico.

Cleanup of these DOE facilities is a diverse and complex challenge that generally encompasses four categories of activities: (1) decontamination and decommissioning of buildings and facilities, (2) remediation of environmental contamination, (3) permanent disposal of wastes resulting from past enrichment operations and remedial activities, and (4) long-term surveillance and maintenance of facilities after closure is complete. DOE funds additional projects at these sites from two other accounts: the Non-Defense Environmental Cleanup account and the Defense Environmental Cleanup account.

Title X Uranium and Thorium Reimbursements

Congress passed the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA, P.L. 95-604) in the wake of environmental and public health concerns about exposures to radiological and non-radiological material originating from Cold War-era uranium mill tailing sites. Uranium mills process uranium ore to produce uranium

concentrate (“yellowcake”), which is subsequently enriched. Title I of UMTRCA authorized a remedial action program for uranium mill tailings sites that were inactive prior to 1978, which produced uranium concentrate under federal procurement contracts. Title II of UMTRCA authorized the regulation of uranium mills and tailings sites that were operating on or after the law’s enactment. Under UMTRCA, the federal government was responsible for the cleanup costs at Title I sites, while private licensees are responsible for funding the decommissioning of Title II sites. Some uranium mills produced uranium concentrate under both federal procurement contracts and commercial civilian nuclear power production. Title X of the Energy Policy Act of 1992 authorized reimbursements to pay Title II uranium and thorium licensees for remediation costs proportional to the quantity of byproduct material produced under federal procurement contracts. Reimbursement payments under Title X do not absolve these licensees from completing site decommissioning requirements. DOE-EM administers reimbursement payments, subject to annual appropriations, for the remediation of eligible Title II sites with funds from the UED&D Fund.

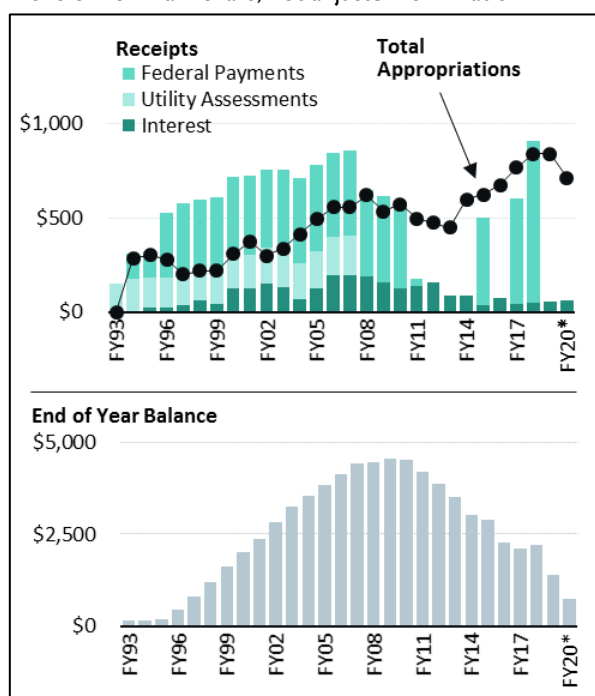
UED&D Fund Receipts and Appropriations

To finance the fund, Title XI of the Energy Policy Act of 1992 authorized the collection of assessments from electric utilities and payments by the federal government from appropriations out of the General Fund of the U.S. Treasury, as both electric utilities and the federal government benefitted from the production of enriched uranium. Congress appropriated funding from the UED&D fund for the first time in FY1994. The authority to collect the utility assessments, and the authorization of appropriations for the federal payments, expired on October 24, 2007. Congress has continued federal payments to the fund through the annual appropriations process in most fiscal years. Interest accrued to the balance of the fund continues to provide annual receipts to the UED&D Fund. Congress appropriates money from the General Fund to the Defense Environmental Cleanup account, then authorizes transfers of a specific amount to the UED&D Fund for the federal payments. Congress did not authorize General Fund transfers from the Defense Environmental Cleanup account to the UED&D Fund for FY2012-FY2014, FY2016, and FY2019. In FY2019, P.L. 115-244 appropriated \$841 million from the UED&D Fund.

Since FY2011, annual appropriations from the UED&D Fund have generally exceeded annual receipts from payments and interest, resulting in a declining balance (**Figure 1**). The end-of-year balance of the UED&D Fund (\$2.2 billion as of FY2018) would not be sufficient to pay the estimated costs to complete planned cleanup actions over the long term (up to \$47.9 billion estimated by DOE). If the amount in the fund is insufficient to pay for annual cleanup needs, authorizations for federal payments and interest would have to equal annual appropriations to continue to pay down the estimated remaining liabilities. The Energy Policy Act of 1992 states that DOE is responsible for the costs subject to annual appropriations.

Figure 1. UED&D Fund Balance, Appropriations, and Receipts: FY1993-FY2018, FY2019, and FY2020 Estimates

Millions of nominal dollars, not adjusted for inflation



Source: Compiled by CRS from the Office of Management and Budget (OMB) Appendix to the President’s annual budget requests from FY1995 to FY2020.

Notes: FY2019 and FY2020 receipts and FY2020 UED&D Fund balance are from OMB estimates. The federal payment in FY2018 was a one-time transfer of the remaining balance of the Uranium Supply and Enrichment Activities account to the UED&D Fund. Congress appropriated \$841 million for FY2019, while FY2020 appropriations are the President’s request.

FY2020 Appropriations

In the 116th Congress, the House-passed Energy and Water Development and Related Agencies Appropriations Act, 2020 (H.R. 2740) would provide \$874 million from the UED&D Fund. Of that amount, H.Rept. 116-83 recommends UED&D Fund appropriations for Oak Ridge (\$196 million), Paducah (\$207 million), Portsmouth (\$418 million), uranium and thorium reimbursements (\$31 million), and pension and community and regulatory support (\$22 million). As reported, the Senate version of the bill (S. 2470) would provide \$907 million from the UED&D Fund. Of that amount, S.Rept. 116-102 recommends UED&D Fund appropriations for Oak Ridge (\$196 million), Paducah (\$240 million), Portsmouth (\$418 million), uranium and thorium reimbursements (\$31 million), and pension and community and regulatory support (\$22 million). All three sites receive a portion of the pension and community and regulatory support appropriation. Neither bill would authorize General Fund transfers from the Defense Environmental Cleanup account to the UED&D Fund for FY2020.

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