

## **Background Fact Sheet**

### **Transfer of Depleted Uranium and Subsequent Transactions**

At the direction of Energy Secretary Steven Chu, over many months, the Energy Department (DOE) has been working closely with Energy Northwest (ENW), the Tennessee Valley Authority (TVA), and USEC Inc. (USEC) to develop a plan to address the challenges at USEC's Paducah Gaseous Diffusion Plant (GDP) that advances America's national security interests, protects taxpayers, and provides benefits for TVA and the Bonneville Power Administration's (BPA's) electric ratepayers and business operations. BPA is ENW's sole customer, purchasing 100 percent of ENW's Columbia Generating Station's electric power as part of BPA's overall regional power sales.

In December 2011, USEC provided informal notice to the Department that it was considering ceasing its enrichment operations at the Paducah GDP in Paducah, Kentucky later this year because it does not currently have enough commercial business to warrant operations beyond May 2012.

The abrupt loss of the Paducah GDP's capability to domestically enrich uranium would have led to adverse effects on the Department of Energy in both its nuclear security and environmental cleanup operations, in addition to the negative impacts a plant closure would have had on the local economy and local workers.

The Department's National Nuclear Security Administration (NNSA) requires U.S.-origin unobligated domestically enriched, domestic-origin uranium to support continued tritium production for the United States' nuclear stockpile. At this time, the Paducah GDP facility is the only enrichment facility operating domestically that uses U.S.-origin technology and meets the treaty obligations for the U.S. nuclear deterrent.

After looking at a range of different alternatives, the Department of Energy, ENW, TVA and USEC have decided to pursue an arrangement that consists of a number of individual commercial transactions between the collaborating organizations. The first transaction as part of this arrangement is the transfer of depleted uranium from the Department's inventory to ENW. This no-cost transfer would utilize some of DOE's depleted uranium inventory to create U.S.-origin unobligated nuclear fuel for DOE's national security requirements and, at the same time, keep the Paducah GDP operating for one additional year. This would provide combined benefits for all of the parties involved, including continuing operations for a year at the Paducah site, which USEC estimates will employ over a thousand workers.

Before agreeing to make the depleted uranium transfer, the Energy Department undertook an analysis of the domestic uranium market to ensure that the transactions under the project would not have an adverse material impact on the domestic uranium mining, enrichment, or conversion industry. The Department of Energy enlisted Energy Resources International (ERI), a respected market consultant, to perform a thorough analysis. ERI analyzed the transactions envisioned by the collaborating organizations, additional transfers of natural uranium by the Office of Environmental Management to support cleanup at the Portsmouth and Paducah sites, and

transfers of low-enriched uranium (LEU) by NNSA to support its down-blending programs for surplus highly enriched uranium. ERI concluded, and the Department agrees, that the analyzed transfers will not have an adverse material impact on the domestic uranium industries. The market analysis can be found [HERE](#), and the Secretarial Determination is available [HERE](#).

### **Description of Transactions**

This depleted uranium enrichment project is a one-year effort to continue operations of the Paducah GDP to provide a critical national security benefit for the Energy Department and the American people. This will also give the Department the necessary time to plan and budget for the turnover of the Paducah facilities and provide benefits to electric ratepayers in the TVA and BPA service areas. In addition, USEC estimates continued operations will maintain jobs for more than a thousand USEC workers for an additional year.

The proposed transfer of depleted uranium is the initial step in an arrangement that would involve multiple transactions between the collaborating organizations. While many of the details of the specific transactions are business-sensitive, the general framework for the proposal is described below.

- Beginning in May 2012, the Energy Department would transfer **9075 Metric Tons Uranium (MTU)** of the high-assay depleted uranium tails currently stored at Paducah to ENW. This quantity of tails represents less than 15 percent of the Department's total inventory for high-assay depleted uranium tails and less than 2 percent of the total depleted uranium inventory.
- ENW would contract with USEC to provide enrichment services, which combined with ongoing commercial obligations at USEC, would total approximately 5 million separative work units (SWU) over approximately one year. SWU is a unit of measurement that is applied to the enrichment process; ENW would pursue a series of commercial bonds to finance the initial enrichment services.
- The USEC enrichment activities would create **482 MTU of LEU**. ENW would sell a portion of this LEU to TVA over several years. ENW will use its portion of the LEU to produce electricity in ENW's Columbia Generating Station and TVA would use the LEU it purchases from ENW to produce electricity in TVA's commercial nuclear reactors that also produce tritium for the U.S. nuclear deterrent.
- TVA currently contracts with NNSA to produce tritium in its reactors. TVA must use U.S.-origin unobligated LEU to fuel the reactor(s) when it is producing tritium. Beginning in 2015, TVA would purchase a total of **435 MTU of LEU** of the total from ENW, enabling TVA to extend its contract with NNSA for tritium production. The 435 MTU LEU would provide enough fuel to support up to 15 years of uninterrupted tritium production for the U.S. government.
- The remaining **47 MTU LEU** of the total 482 MTU would be retained by ENW for use at its Columbia Generating Station.

- As part of the arrangement, USEC has reached an agreement with TVA for a continued supply of power for the GDP.
- The lower-assay depleted uranium tails resulting from the enrichment process (secondary tails) would be returned to DOE for final disposition.