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United States Department of Energy

Excess Uranium Inventory Management Plan

Summary and Status

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Overview of DOE Excess Uranium Inventory Management Plan

- **The Office of Nuclear Energy (NE), the Office of Environmental Management (EM), and the National Nuclear Security Administration (NNSA) are responsible for the Department's excess uranium inventories and have coordinated the development of the Excess Uranium Inventory Management Plan (Plan).**
- **The purpose of Plan is to provide the general public and interested stakeholders more specific information and enhanced transparency with DOE's plans for excess uranium.**
- **The Plan identifies certain DOE current excess uranium inventories that are planned, or are under consideration, or may be considered by DOE in the future for disposition.**
- **The Plan provides a strategy for the sale or other disposition of the excess uranium.**



DOE's Excess Uranium Inventory Management Plan Objectives

- **Enhance the value and usefulness of DOE's uranium inventory by converting a portion of it to low enriched uranium.**
- **Reduce DOE programmatic costs.**
- **Meet key nonproliferation objectives.**
- **Dispose of material to facilitate the cleanup of DOE's gaseous diffusion plants.**

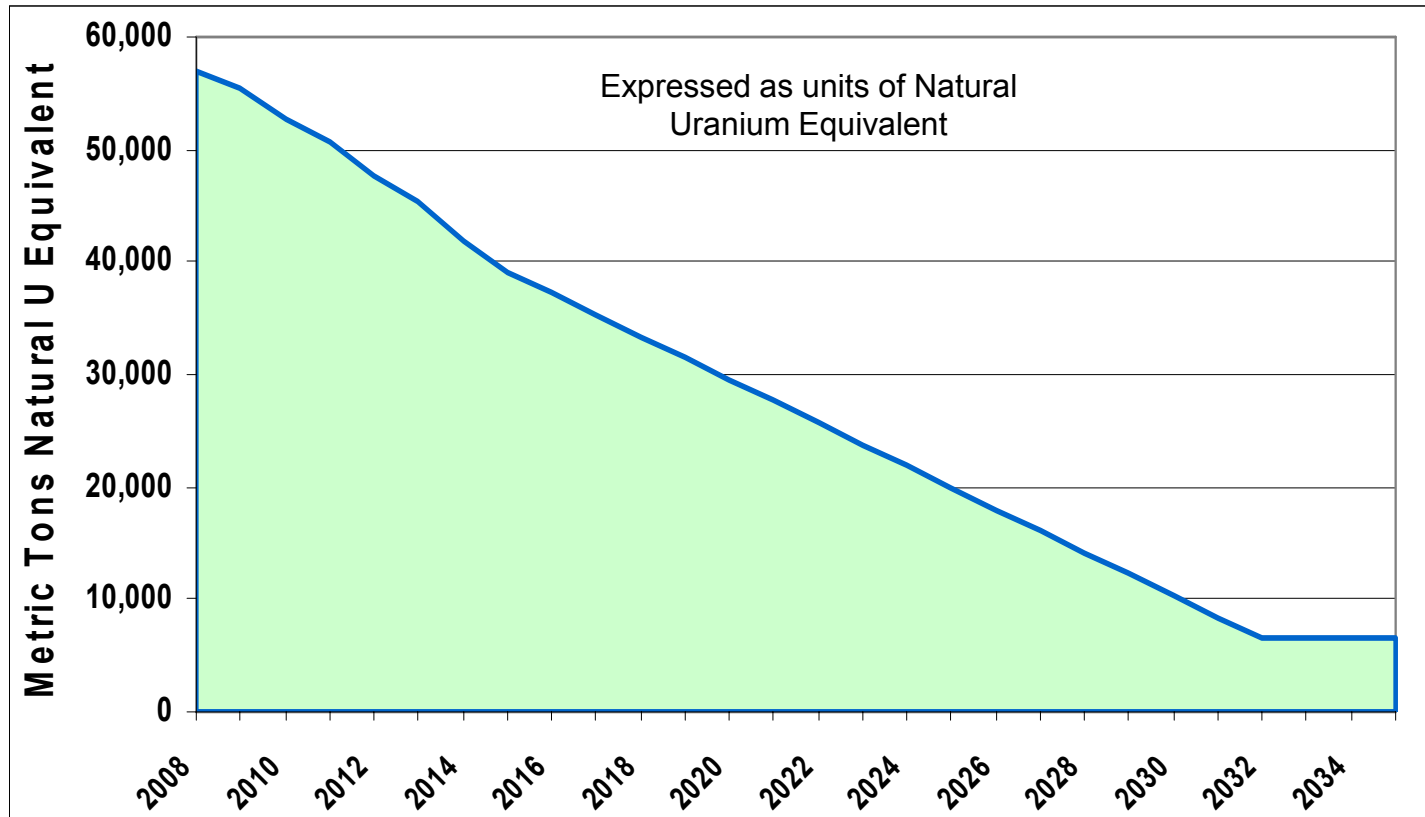


DOE's Sales or Transfers: Ongoing/Planned or Under Consideration as Identified in the Plan

- 1. Down-blend unallocated highly enriched uranium (HEU) to low enriched uranium (LEU).**
- 2. Make available for sale off-specification uranium.**
- 3. Sell natural uranium hexafluoride (NU); this NU could be used for initial cores for new reactors.**
- 4. Make available NU to enrich NU to LEU; this LEU could be included in a DOE inventory.**
- 5. Sell high-assay depleted uranium hexafluoride (DU) or enrich DU to NU or LEU.**



Projected Drawdown of Excess Uranium Inventories

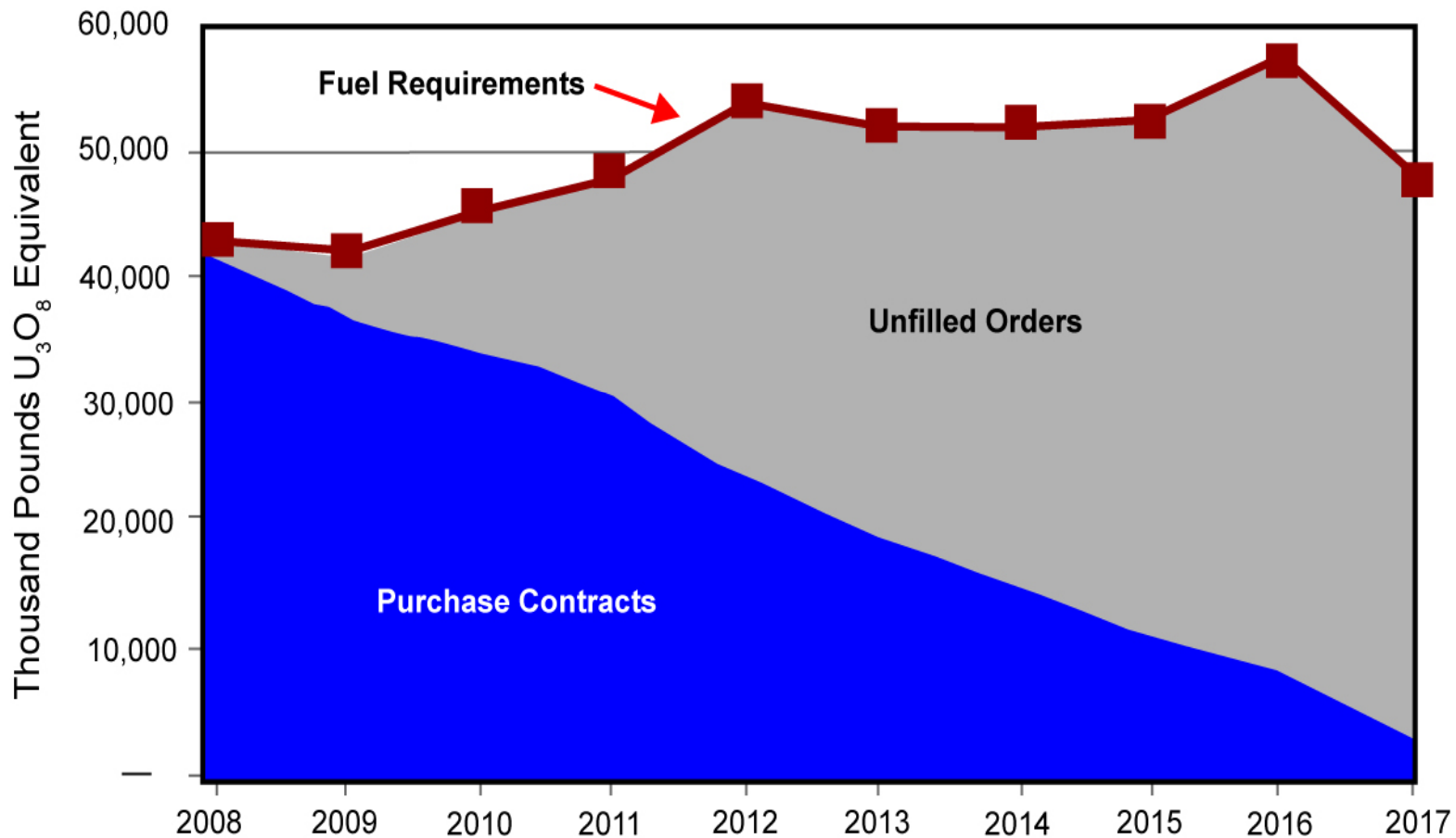


The rate of projected drawdown assumes DOE's disposition of excess uranium, in general, at up to 10 percent of the current total annual fuel requirements of all licensed U.S. nuclear power plants (equivalent to about 5 million pounds U₃O₈).

As much of DOE excess material requires additional processing to meet commercial specifications, the rate of uranium entering the market is expected to be significantly less than 10 percent in the early years once transactions are authorized. During 2010 - 2015, additional uranium could be sold for initial cores.



Uranium Market Fundamentals Dictate a Gradual Ramp-up of Material Entering the Market



Source: Energy Information Administration: Form EIA-858 "Uranium Marketing Annual Survey" (2007).



Uranium Management Principles

- **NE, EM, NNSA, and other relevant Departmental offices will work together to coordinate the implementation of the Plan.**
- **DOE will conduct cost-benefit and market analyses, as appropriate, including the analysis of options for processing, transferring, spot market and long-term sales, and cost avoidance.**
- **DOE will comply with applicable laws/regulations and appropriate DOE orders.**
- **DOE expects to periodically update the Plan to reflect new and evolving information, policies and programs.**



Benefits of Potential Transactions Described in the Plan

- **Would enhance the value and usefulness of DOE's excess uranium by converting a portion of it into LEU useable by commercial power reactors. (LEU is the fuel used by commercial reactors.)**
 - **Excess HEU will continue to be down-blended into LEU to meet nonproliferation objectives.**
 - **DOE plans to evaluate the desirability of enriching a portion of the NU and DU into a LEU inventory taking into account costs and market conditions.**
- **Would reduce DOE programmatic costs by decreasing uranium inventories.**
 - **Disposal of material facilitates the cleanup of DOE's gaseous diffusion plants.**
- **Government would receive reasonable value for uranium.**



Benefits of Potential Transactions Described in the Plan

- **Would support market stability by reducing the uncertainty of sales.**
- **Would contribute to the expansion of nuclear energy in the United States.**
- **Excess inventory would provide energy security.**
 - **Excess inventory could be made available to mitigate significant supply disruptions that cannot be addressed by the market.**



Steps in Implementing the Plan

- **Complete reviews required under the National Environmental Policy Act of 1969 for NU and DU. (Reviews have already been completed for HEU blend-down and off-specification uranium.)**
- **Identify marketable material based on assay and specifications of material (DU).**
- **Prepare cost/benefit and market analyses.**
- **Secretary of Energy determines, as may be required, that a proposed transaction does not have an adverse material impact on the domestic mining, conversion, and enrichment industries.**
- **Announce our intentions to ensure transparent and competitive transactions.**
- **Execute contracts.**



Representative DOE Excess Uranium Management Plan

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Allocated HEU Down-blend (to commercial market)	584	816	923	798	1,005	997	992	659	491	402
Unallocated HEU Down-blend (LEU transfer)*		96	128	81	31					
Off-Spec Non-UF ₆ requiring additional processing before entering the market**	**	**	**	**	**	**	**	**	**	**
DU as UF ₆ ***		42	96	387	443	912	927	1,258	1,420	1,512
Sub-Total in MTU	584	954	1,147	1,266	1,479	1,909	1,919	1,917	1,911	1,914
Sub-Total in million pounds U ₃ O ₈	1.5	2.5	3.0	3.3	3.8	5.0	5.0	5.0	5.0	5.0
10 Percent U.S. Requirements in million pounds U ₃ O ₈	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Russian-origin NU for initial cores in MTU****			1,231	731	1,462	846	2,038	1,385		
Russian-origin NU for initial cores in million pounds U ₃ O ₈			3.2	1.9	3.8	2.2	5.3	3.6		
Total in MTU	584	954	2,378	1,997	2,941	2,755	3,957	3,302	1,911	1,914
Total in million pounds U ₃ O ₈	1.5	2.5	6.2	5.2	7.6	7.2	10.3	8.6	5.0	5.0

* Additional small-scale HEU down-blending projects are anticipated, but not yet planned, in this timeframe. ** DOE has 4,461 MTU of Off-Spec Non-UF₆. If this material enters the market it would require substantial processing and would eventually be offered for use in the commercial market over a number of years. Responses to the initial Request for Proposal released in 2008 did not result in an award; however, future sales are possible as well as the identification of additional Off-Spec candidate material. *** DU as UF₆ having an assay equal to or greater than 0.35% 235U but less than 0.711% 235U. NU equivalent based on 0.20% tails assay. ****Tentative schedule, subject to future actions and decisions based on relevant considerations and conditions. May lead to uranium dispositions over 10% of the market for certain special purposes such as for initial cores.



Current Status of Implementing the Plan

- **Actions Identified in the Plan.**
 - Responses to the initial Request for Proposal (RFP) released by EM in 2008 for off-specification material did not result in an award; however, future sales are possible as well as the identification of additional candidate material
 - NNSA has received responses to a RFP and will be reviewing the RFP for procurement of contractors to blend-down 12 metric tons of HEU.

- **National Environmental Policy Act Review for NU and DU.**
 - A draft environmental assessment (EA) was released and transmitted to states and other potential stakeholders on December 24, 2008.
 - Comment period closed on January 30, 2009, with stakeholder input considered in the Department making a determination whether to proceed with a Finding of No Significant Impact or an Environmental Impact Statement.
 - Determination to be published in the Federal Register.



Additional Information

[Access to the DOE Excess Uranium Inventory Management Plan](#)

DOE Office of Nuclear Energy web page:

[Inquiries or Comments](#)

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