(Rehabilitation Act). The RSA–2 captures: Administrative expenditures for the VR and SE programs; VR program service expenditures by category; SE administrative expenditures and service expenditures; expenditures for the VR program by number of individuals served; the costs of types of services provided; and a breakdown of staff of the VR agencies.

Dated: March 6, 2017

Stephanie Valentine,

Acting Director, Information Collection Clearance Division, Office of the Chief Privacy Officer, Office of Management.

[FR Doc. 2017–04632 Filed 3–8–17; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

Excess Uranium Management: Effects of Potential DOE Transfers of Excess Uranium on Domestic Uranium Mining, Conversion, and Enrichment Industries; Notice of Issues for Public Comment

AGENCY: Office of Nuclear Energy, Department of Energy.

ACTION: Notice of issues for public comment.

SUMMARY: The U.S. Department of Energy (DOE) is beginning the process to consider a new Secretarial Determination covering potential continued transfers of uranium for cleanup services at the Portsmouth Gaseous Diffusion Plant. In support of this process, DOE issued a Request for Information (RFI) on July 19, 2016 that solicited information about uranium markets and domestic uranium, conversion, and enrichment industries and the potential effects of DOE uranium transfers on the domestic industries. DOE also commissioned an independent analysis of the potential effects of various levels of uranium transfers. DOE now provides for public review a summary of information that DOE will use in the decision-making process for a potential Secretarial Determination. That information includes responses received from the RFI and the analysis prepared for DOE. DOE requests comments for consideration in the Secretarial Determination.

DATES: DOE will accept comments, data, and information responding to this proposal submitted on or before April 10, 2017.

ADDRESSES: Interested persons may submit comments, data, and information responding to this proposal by any of the following methods.

1. *Email: RFI-UraniumTransfers@hq.doe.gov.* Submit electronic comments in Microsoft Word or PDF file format, and avoid the use of special characters or any form of encryption.

2. *Postal Mail:* Ms. Cheryl Moss Herman, U.S. Department of Energy, Office of Nuclear Energy, Mailstop NE–32, 19901 Germantown Rd., Germantown, MD 20874–1290. If possible, please submit all items on a compact disk (CD), in which case it is not necessary to include printed copies. Due to potential delays in the delivery of postal mail, we encourage respondents to submit comments electronically to ensure timely receipt.

3. *Hand Delivery/Courier:* Ms. Cheryl Moss Herman, U.S. Department of Energy, Office of Nuclear Energy, Mailstop NE–32, 19901 Germantown Rd., Germantown, MD 20874–1290. Phone: (301) 903–1788. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No facsimiles (faxes) will be accepted. Supporting documents are available on the Internet at *http://www.energy.gov/ne/downloads/excess-uranium-management.*

FOR FURTHER INFORMATION CONTACT: Ms. Cheryl Moss Herman, U.S. Department of Energy, Office of Nuclear Energy, Mailstop NE–32, 19901 Germantown Rd., Germantown, MD 20874–1290. Phone: (301) 903–1788. Email: *Cheryl.Moss_Herman@Nuclear.Energy.Gov.*

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

A. Excess Uranium Inventory

The Department of Energy (DOE) holds inventories of uranium in various forms and quantities—including low-enriched uranium (LEU), highly-enriched uranium (HEU), depleted uranium (DU) and natural uranium (NU)—that have been declared as excess and are not dedicated to U.S. national security missions. Within DOE, the Office of Nuclear Energy (NE), the Office of Environmental Management (EM), and the National Nuclear Security Administration (NNSA) coordinate the management of these excess uranium inventories. DOE explained its approach to managing this inventory in a July 2013 Report to Congress, *Excess Uranium Inventory Management Plan* (2013 Plan).

In recent years, DOE has managed its excess uranium inventory in part by entering into transactions in which DOE transfers certain forms of excess uranium in exchange for services. Specifically, DOE transfers uranium in exchange for cleanup services at the Portsmouth Gaseous Diffusion Plant and for down-blending of highly-enriched uranium (HEU) to LEU. DOE currently transfers uranium for these two programs at an aggregate rate of approximately 2,100 metric tons of natural uranium equivalent (MTU) per year.[1]

B. Statutory Authority

DOE manages its excess uranium inventory in accordance with the Atomic Energy Act of 1954 (42 U.S.C. 2011 *et seq.,* ''AEA'') and other applicable law. Specifically, Title I, Chapters 6–7, 14, of the AEA authorizes DOE to transfer special nuclear material and source material. LEU and natural uranium are types of special nuclear material and source material, respectively. The USEC Privatization Act (Pub. L. 104–134, 42 U.S.C. 2297h *et seq.*) places certain limitations on DOE's authority to transfer uranium from its excess uranium inventory. Specifically, under Section 3112(d)(2)(B) of the USEC Privatization

[1] With respect to a given amount of LEU, the ''natural uranium equivalent'' is the amount of natural uranium feed that would be required to produce that amount of LEU with a given quantity of enrichment services.

Act (42 U.S.C. 2297h–10(d)(2)(B)), the Secretary must determine that certain transfers of natural or low-enriched uranium ''will not have an adverse material impact on the domestic uranium mining, conversion, or enrichment industry, taking into account the sales of uranium under the Russian Highly Enriched Uranium Agreement and the Suspension Agreement'' before DOE makes these transfers under its AEA authority (hereinafter referred to as ''Secretarial Determination'' or ''Determination''). Section 306(a) of Division D, Title III of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113–235), limits the validity of any determination by the Secretary under Section 3112(d)(2)(B) of the USEC Privatization Act to no more than two calendar years subsequent to the determination.

Section 3112(e) of the USEC Privatization Act (42 U.S.C. 2297h–10(e)), however, provides for certain transfers of uranium without the limitations of Subsection 3112(d)(2). For example, under Subsection 3112(e)(2), the Secretary may transfer or sell enriched uranium to any person for national security purposes. Nevertheless, the Department will consider the impact of transfers made pursuant to Section 3112(e) along with other DOE transfers in any determination made to assess the adverse impacts of the Department's transfers under Section 3112(d).

C. Procedural History

The Secretary has periodically determined whether certain transfers of natural and low-enriched uranium will have an adverse material impact on the domestic uranium industries. DOE issued the most recent Secretarial Determination under Section 3112(d) covering transfers for cleanup at the Portsmouth Gaseous Diffusion Plant and down-blending of HEU to LEU on May 1, 2015. To inform the May 1, 2015, Secretarial Determination and Analysis (2015 Secretarial Determination), DOE held two rounds of public comment and review prior to the determination.[2] DOE solicited input from the public on issues ranging from the potential effect and consequences of DOE uranium transfers on the uranium market, past and future, to the factors that should be considered by DOE in assessing whether its transfers would have an adverse material impact. In addition, DOE tasked Energy Resources International, Inc. (ERI) with assessing the potential effects on the domestic uranium mining, conversion, and enrichment industries from potential DOE transfers based on scenarios involving different volumes of DOE transfers. Based on input from the public and the ERI report, DOE then prepared a separate analysis and recommended a course of action to the Secretary. The resulting 2015 Determination covered transfers of up to a total of 2,500 MTU natural uranium equivalent in calendar year 2015, broken down as follows: Up to 500 MTU per year of natural uranium equivalent in the form of LEU transferred for down-blending services, up to 2,000 MTU of natural uranium equivalent for cleanup services at the Portsmouth Gaseous Diffusion Plant, except where transfers of LEU are less than 500 MTU equivalent. Total transfers may not exceed 2,500 MTU equivalent in 2015 and 2,100 MTU equivalent in subsequent years.[3] For calendar year 2016 and thereafter, the Determination covered up to 2,100 MTU per calendar year natural uranium equivalent, broken down as follows: Up to 500 MTU per year of natural uranium equivalent in the form of LEU transferred for down-blending services, with the balance transferred for cleanup services at the Portsmouth Gaseous Diffusion Plant.

DOE began planning for a potential new Secretarial Determination pursuant to Section 3112(d) to cover uranium transfers in exchange for cleanup services at the Portsmouth Gaseous Diffusion Plant and for down-blending of highly-enriched uranium (HEU) to LEU in 2016. As a preparatory step, DOE sought information from the public through a Request for Information (RFI) published in the **Federal Register** on July 19, 2016 (July 2016 RFI) (81 FR 46917) (a detailed discussion of the RFI is provided in section D).

Also in late 2016, following the close of the comment period on the RFI, the Secretary determined that the exchange of LEU for HEU down-blending services serves a national security purpose and these transfers would be covered by Section 3112(e)(2). The Secretary determined that down-blending HEU to LEU supports the Department's nonproliferation goals and promotes national security by ensuring the HEU can never again be used in a nuclear weapon. Pursuant to Section 3112(e), these transfers for down-blending purposes no longer require a Secretarial Determination under Section 3112(d). However, the proposed enriched uranium transfers under this program will still be considered for purposes of assessing the impact of DOE's uranium transfers in a potential Secretarial Determination under Section 3112(d). At this time, the amount of natural and LEU that DOE is transferring is consistent with the 2015 Secretarial Determination.

DOE is now soliciting additional public input on its proposed transfers of natural uranium for cleanup services at the Portsmouth Gaseous Diffusion Plant under Section 3112(d). Again, DOE has commissioned a report by ERI (2017 ERI Report), which analyzes four scenarios involving different volumes of DOE transfers.

D. Request for Information

In the July 19, 2016 Request for Information, DOE solicited information from interested stakeholders and specifically invited comment on the following questions.

(1) What are current and projected conditions in the domestic uranium mining, conversion, and enrichment markets?

(2) What market effects and industry consequences could DOE expect from continued transfers at annual rates comparable to the transfers described in the 2015 Secretarial Determination?

(3) Would transfers at a lower annual rate or a higher annual rate significantly change these effects, and if so, how?

(4) Are there any anticipated changes in these markets that may significantly change how DOE transfers affect the domestic uranium industries?

In response to this request, DOE received comments from individuals and organizations representing diverse interests across the nuclear industry. DOE received comments from members of the uranium mining, conversion, and enrichment industries. DOE also received comments from trade associations, nuclear utilities, local governmental bodies, and members of the public. All comments are available at *http://www.energy.gov/ne/downloads/excess-uranium-management.*[4] Citations to RFI comments are denoted by the commenter and page number of comments submitted; *e.g.,* ''Uranium Producer, at 3'', is found on page 3 of ''Uranium Producer's'' comments submitted in response to the July 2016 RFI.

A number of commenters expressed views on matters that were not

[2] DOE sought information from the public through a Request for Information published in the **Federal Register** on December 8, 2014 (79 FR 72661) and an additional Request for Public Comment on March 18, 2015 (80 FR 14107).

[3] See Excess Uranium Management: Secretarial Determination of No Adverse Impact on the Domestic Uranium Mining, Conversion, and Enrichment Industries, 80 FR 26366 (May 7, 2015) (hereinafter 2015 Secretarial Determination).

[4] Some comments were marked as containing confidential information. Those comments are provided with confidential information removed.

specifically within the scope of the RFI. For example, many commenters requested that DOE reserve a certain amount of its HEU for down-blending to 19.75% U–235 for use in the development and demonstration of advanced reactor concepts. See, *e.g.,* Comment of Peterson, at 1; Comment of URENCO, at 3; Comment of The Breakthrough Institute, at 1. Several commenters also asked the Department to make additional information publicly available about the excess uranium inventory, including the amount and type of material that remains in the inventory and any plans to declare additional material to be excess to national security needs. A number of commenters also asked DOE to work with industry and to update its uranium management plans or to release a strategy outlining the specific annual quantities of uranium to be transferred in the future. See, *e.g.,* Comment of Duke Energy, at 1, Comment of Cameco, at 3; Comment of NEI, at 2.

While these comments are outside the scope of the potential Secretarial Determination under consideration, DOE understands the advantage of providing as available updated information regarding its remaining excess uranium inventories and plans for future uranium management. Information on DOE's planned uranium transfers in the future, to the extent currently available, have been incorporated into the ERI analysis as appropriate. For additional clarity, DOE provides here updated information on the excess uranium inventory, as of the end of 2015.

TABLE 1—OVERVIEW OF DOE EXCESS URANIUM INVENTORIES AS OF DECEMBER 31, 2015

Inventory	Enrichment level	MTU	NU equivalent million lbs. U^3O^8	NU equivalent MTU
Unallocated Uranium Derived from U.S. HEU Inventory.	HEU/LEU	4.5	2.0	†774
Allocated Uranium Derived from U.S. HEU Inventory.	HEU/LEU	12.4	6.0	†2,327
LEU	LEU	47.6	1.1	409
U.S.-Origin NU as UF^6	NU	3,959	10.3	3,959
Russian-Origin NU as UF^6	NU	2,968	7.7	2,968
Off-spec LEU as UF^6	LEU	1,106	4.9	1,876
Off-spec Non-UF^6	NU/LEU	221	1.6	600
DUF^6*	DU	114,000	65–90	25,000–35,000

† The NU equivalent shown for HEU is the equivalent NU within the LEU derived from this HEU, most of which will be retained by DOE in the timeframe under consideration herein. This table includes LEU down-blended from HEU and HEU that is to be down-blended or that is in the process of being down-blended.

* DUF^6 quantity is based on uranium inventories with assays greater than 0.34% ^{235}U but less than 0.711% ^{235}U. The amount of NU equivalent is subject to many variables, and a large range has been shown to reflect this uncertainty. DOE has additional DUF^6 inventory that is equal to or less than 0.34% ^{235}U that is not reported in this Table.

∧ Reflects inventories in the 2013 DOE Excess Uranium Inventory Management Plan.

E. Market Analyses

In preparation for the potential Secretarial Determination that is the subject of this notice, DOE has tasked ERI with preparing an analysis of the potential effects on the domestic uranium mining, conversion, and enrichment industries of the introduction of DOE excess uranium inventories in various forms and quantities during calendar years 2017 through 2026.[5] It is important to note that the various levels of sales or transfers were developed for analytical purposes, and do not bind the Secretary in making his determination. For this analysis, DOE tasked ERI to consider the effect of options for planned DOE transfers on the domestic uranium industries under four different scenarios.

Under the Base Scenario, DOE would continue transfers at the current annual rate of 2,100 MTU per year until 2020, at which point NNSA barters would end. Aggregate transfers for each year in 2017 and in 2018 would be 2,100 MTU of natural uranium equivalent; 2021 MTU in 2019; and 495 MTU in 2020 when EM natural UF_6 supplies are exhausted. As previously mentioned, NNSA barters in years 2017–2019 are not covered by the potential Secretarial Determination which is the subject of this notice, but are still considered in ERI's market analyses. NNSA barters are assumed to end in 2019, after which (2019 to 2025) NNSA would continue to down-blend HEU but the resulting down-blended LEU would be held for later use and not bartered. Required purchases of blend stock for down-blending from commercial suppliers in 2019 to 2025 result in a negative net amount of material transferred in years 2020 and after because it actually creates new demand.

Under Scenario 1, DOE would cease transfers for EM's cleanup work after 2016, but NNSA barters would be at the same levels as in the Base Scenario based on the determination that NNSA uranium barters serve a national security purpose.

Under Scenario 2, DOE would transfer an aggregate total of 1700 MTU through 2018, 1,652 in 2019, 1,136 MTU in 2020, 464 MTU in 2021, and there would be negative net amounts of transfers in years 2022–2026 due to commercial purchases of uranium by the Government.

Under Scenario 3, DOE would transfer an aggregate of 2,500 MTU in 2017 and 2018, 1,780 MTU in 2019 and again there would be a negative net amount of material transferred in 2020 through 2025 due to commercial purchases of uranium by the Government.

DOE also asked ERI to provide specific categories of information in its analysis, including a discussion of price volatility and regional differences in the global markets. DOE tasked ERI to discuss the implications of changing certain assumptions underlying its analysis, specifically regarding what proportion of DOE material would enter the global market as compared to the domestic market and regarding the share of DOE material delivered under long-term contracts. ERI's report also includes updated information regarding changes in the market between February 2015 and November 2016. Both the 2015 ERI Report and the 2017 ERI Report can be found at *http://www.energy.gov/ne/downloads/excess-uranium-management.*

[5] ''Analysis of the Potential Effects on the Domestic Uranium Mining, Conversion, and Enrichment Industries of the Introduction of DOE Excess Uranium Inventory During CY 2017 Through 2026'', Energy Resources International, January 12, 2017 (ERI–2142.20–1701).

II. Analytical Approach

A. Overview

DOE issues Secretarial Determinations pursuant to Section 3112(d) of the USEC Privatization Act. Section 3112(d) states that DOE may transfer ''natural and low-enriched uranium'' if, among other things, ''the Secretary determines that the sale of the material will not have an adverse material impact on the domestic uranium mining, conversion, or enrichment industry, taking into account the sales of uranium under the Russian HEU Agreement and the Suspension Agreement.'' After considering this statutory language, in its 2015 Secretarial Determination and Analysis, DOE explained in detail its analytical approach to determine adverse material impact within the meaning of the statute and under the factual conditions existing at the time of a Secretarial Determination.[6] Of note, DOE described transfers as having an ''adverse material impact'' when a reasonable forecast predicts that an industry will experience ''material'' harm that is reasonably attributable to the transfers. As further explained, in DOE's view the proper inquiry is to what degree the effects of DOE's transfers would make an industry weaker based on an analysis reflecting existing conditions. As a general proposition, ''adverse material impact'' would be a harm of real import and great consequence, beyond the scale of normal market fluctuations. DOE also identified the six factors it would use in the analysis to arrive at a determination of adverse material impact.

DOE plans to utilize the same analytical approach and factors in determining adverse material impact in this potential new Secretarial Determination.

B. Factors Under Consideration

As explained, in preparation for a potential Determination in 2017, DOE proposes to evaluate the following factors set forth in the 2015 Secretarial Determination and Analysis:

1. Changes to prices;
2. Changes in production levels at existing facilities;
3. Changes to employment in the industry;
4. Changes in capital improvement plans and development of future facilities;
5. The long-term viability and health of the industry; and,
6. As required by statute, sales under certain agreements permitting the import of Russian-origin uranium.

DOE believes that an analysis of these factors, which are the same as those utilized in the analysis supporting the 2015 Secretarial Determination, represent sufficiently the types of impacts that a DOE transfer could in principle have on the domestic uranium, conversion, or enrichment industry. Not every factor will necessarily be relevant on a given occasion or to a particular industry; DOE intends this list of factors as a guide to its analysis. Note that while sales made under the Russian-U.S. Highly Enriched Uranium (HEU) Agreement and the Suspension Agreement are considered in the market analysis, they are not described in the industry-specific sections that follow.

In response to the RFI, DOE received comments from several entities suggesting DOE should change its method and approach to determining adverse material impact. As an initial point, several commenters have cited the *ConverDyn* litigation (a lawsuit in which ConverDyn challenged, among other things, the 2014 Secretarial Determination) as requiring DOE to change its definition and methodology for reaching a determination on adverse material impact because the court held DOE's method to be in violation of law. See, *e.g.,* Comment of Energy Fuels Resources, at 1; Comment of UPA, at 1. This interpretation of the court's rulings in the *ConverDyn* litigation is incorrect. In 2016, the United States District Court for the District of Columbia dismissed as moot the entirety of ConverDyn's challenge to the 2014 Secretarial Determination and its allegation with respect to DOE's 2013 Excess Uranium Management Plan. Without ruling on the merits, the court left intact two of ConverDyn's claims regarding the Department's authority to transfer uranium under the USEC Privatization Act. Although the court indicated that ConverDyn could seek to amend its complaint to challenge the 2013 Plan in the context of its application in the 2015 Secretarial Determination, the court did not address or rule on DOE's methodology in the 2015 Secretarial Determination. ConverDyn and DOE subsequently reached a settlement and the case was dismissed. While DOE is mindful of the results of the *ConverDyn* litigation, the *ConverDyn* litigation does not mandate a change in DOE's method of determining adverse material impact.

In addition, several commenters have stated that DOE failed to define ''adverse material impact,'' in its 2015 Secretarial Determination. Further, commenters noted that to the extent DOE has defined ''adverse material impact,'' the definition should be a more quantitative and less relative standard subject to the factual context in which it is applied. See, *e.g.,* Comment of ConverDyn, at 1–2; Comment of Energy Fuels, at 1–2. As noted in the 2015 Secretarial Determination and Analysis, Congress did not define the term ''adverse material impact,'' leaving it to the Department to ''exercise judgment to develop an understanding of ''adverse material impact'' in its statutory context, as applicable to a given potential transfer or sale of uranium.''[7] As previously noted, DOE's interpretation of the term is explained in depth in the 2015 Secretarial Determination. DOE continues to believe that this approach is appropriate and declines to adopt a specific quantitative standard for the reasons stated in the 2015 Determination.

Several commenters suggested alternative definitions and standards to assess adverse material impact. For example, commenters suggested that DOE reconsider its definition of ''adverse material impact'' to encompass scenarios where DOE transfers are not the primary cause of total losses in one of the domestic uranium industries. See, *e.g.,* Comment of ConverDyn, at 1; Comment of Energy Fuels, at 1–2; Comment of UPA, at 1. Energy Fuels and ConverDyn have also suggested that DOE's standard for ''adverse material impact'' be directly linked to production costs for the uranium mining, conversion, and enrichment markets. Comment of ConverDyn, at 2; Comment of Energy Fuels, at 1–2. While DOE does not believe that production costs alone should be used to determine adverse material impact, and that its comprehensive approach to analyzing market impacts is appropriate, DOE will account for production costs in the factors considered in its analysis. In this way, information on production costs continues to be relevant to DOE's analysis of the market impacts of transfers.

Several commenters, in response to the July 2016 RFI, have suggested that DOE consider other methodology factors in its market analysis. Where appropriate, we have addressed these other factors in our analysis of existing factors.

Finally, comments on specific policy recommendations related to uranium transfers, such as arranging for transfers to be placed in the long-term market as opposed to the spot market or using other budgetary mechanisms to pay for services, have been taken into consideration, but are not addressed in this notice, which describes only the

[6] 2015 Secretarial Determination, 80 FR at 26367; 26379–26383.

[7] 2015 Secretarial Determination, 80 FR at 26380.

information used in analyzing the market impact of current and potential future transfers. Comment of Cameco, at 2; Comments of Duke Energy, at 1.

III. Summary of Information Under Consideration

In the following section, DOE summarizes for each industry the information that DOE believes to be relevant with respect to the above-listed factors. In addition to the 2017 ERI Report and the comments received in response to the July 2016 RFI, in some instances DOE refers to additional information from other sources. Where available, DOE provides a link to where these documents are available on the internet.

A. Uranium Mining Industry

1. Prices

DOE recognizes that both market prices and realized prices of current uranium producers contribute to the market effect of DOE uranium transfers. The realized prices are a factor of both the change in market prices and the contours of various contracts through which the industry members sell their uranium. As in the 2015 Secretarial Determination and Analysis, DOE will consider these two aspects of price together, using available data for each industry.

In preparation for the proposed Secretarial Determination, DOE tasked ERI with estimating the effect of DOE transfers on the market prices for uranium concentrates during the period 2017 through 2026. The potential effect is evaluated using market clearing price analyses, using annual and cumulative methodology,[8] as well as an econometric model to establish a correlation between the spot market price for uranium concentrates and active supply and demand. For its market clearing price model, ERI constructs individual supply and demand curves and compares the clearing price with and without DOE transfers.[9] To develop its supply curves, ERI gathers available information on the costs facing each individual supply source. ERI then uses that information to estimate the marginal cost of supply for each source using a discounted cash flow analysis, when possible. 2017 ERI Report, 44 n.33. ERI's market clearing price methodology assumes a perfectly inelastic demand curve based on its Reference Nuclear Power Growth forecast.[10] ERI assumes that secondary supply is utilized first, followed by primary production. ERI states, ''In over-supplied markets . . . the amount of primary production required to meet requirements, including normal strategic inventory building, is well below actual production.'' 2017 ERI Report, 45. Several commenters have, in the past and in response to the July 2016 RFI, suggested that any DOE analysis provide a more comprehensive understanding of the total impacts of all past DOE transfers. Comment of Cameco, at 1. ERI's cumulative analysis methodology includes information on these cumulative impacts, in addition to annual impacts. ERI notes that the annual method shows lower price effects through 2023 for uranium, through 2021 for conversion and through 2026 for enrichment. The larger price effects found when using the cumulative methodology is consistent with the importance of excess inventory buildup in the current market.'' 2017 ERI Report, 56. ERI's econometric analysis is also used to simulate the spot market price effect for uranium concentrates with and without DOE inventory transfers.

Applying the cumulative approach to the four scenarios listed in Section I.E, ERI estimates that DOE transfers will have the effects listed in Table 2.[11] It is important to emphasize that this is not a prediction that prices will drop by the specified amount once DOE begins transfers following a new determination. These price effects represent ERI's predictions using the cumulative approach for2017 through 2019. *See* Table 4.4 of 2017 ERI Report, 53.

TABLE 2—ERI'S ESTIMATE OF URANIUM CLEARING PRICE CHANGES DUE TO DOE INVENTORY IN $ PER POUND U^3O^8

[Cumulative market clearing approach]

2017 ERI Report estimated clearing price effect ($ per pound U^3O^8)			
	2017	2018	2019
Base Scenario	$5.5	$4.7	$5.0
Scenario 1	4.4	3.2	2.8
Scenario 2	5.3	4.5	4.3
Scenario 3	5.5	5.3	5.3

ERI's cumulative market clearing model shows a change in average clearing price attributed to the DOE inventory of $5.1/pound for the uranium market for the period 2014 through 2016. Using a multivariable econometric model, ERI developed a correlation between the monthly spot prices published by TradeTech with published offers to sell uranium for delivery within one year of publication and published inquiries to purchase uranium for delivery within one year. ERI's multivariable correlation estimates how the spot market prices would respond to the availability of new supply from DOE. 2017 ERI Report, 61–62. Applying this econometric model results in an estimated spot market price effect of $5.3 per pound U_3O_8 over the last three years (2014–2016). Looking forward, ERI estimated that spot market prices would be $3.5 per pound U_3O_8 or 8% lower if Base Scenario DOE inventory releases take place over the next ten years (2017–2026) compared to no release of DOE inventory. The effect is higher in the near-term at $4.4 per pound and 12% lower prices. As noted earlier, the price effects attributed to

[8] In any particular year, the market clearing price (or equilibrium price) for uranium concentrates, for example, is based on the cost of production of the last increment of uranium that must be supplied by the market in order to provide the total quantity of uranium concentrates that is demanded by the market during that year.

[9] The market clearing price is the price at which quantity supplied is equal to quantity demanded.

[10] In other words, ERI assumes that demand for uranium will stay the same regardless of variations in market price.

[11] Note that the transfer rates in these scenarios refer only to the level of uranium transfers for cleanup at Portsmouth and down-blending of LEU. They do not include transfers for three other programs, TVA BLEU, Energy Northwest depleted uranium, and proposed transfers of depleted uranium to GLE. 2017 ERI Report, 22–29. The level of transfers across these three programs is the same in all three scenarios. ERI's predictions about changes in market price reflect these transfers as well as the Portsmouth and down-blending transfers.

past and current DOE inventory releases are already built into current spot market prices. 2017 ERI Report, 63.

UPA attached to its comment a market analysis it commissioned from TradeTech, LLC, a uranium market consultant. Comment of UPA, Attachment, TradeTech, DOE Request for Information Response (2016) (hereinafter ''TradeTech Report''). Using its proprietary model that correlates active spot supply to active spot demand, TradeTech estimates that DOE's transfer reduced the spot price by an average of $2.79 in 2012, $3.81 in 2013, $4.18 in 2014, and $6.17 in 2015. TradeTech Report, 7. TradeTech's Analysis did not include a prediction of the future effect of DOE's transfers at current rates or other levels.

The 2017 ERI Report considers realized prices, production costs and profit margins across the uranium industry, noting that these vary between companies. Across the industry, ERI reports that the average delivered price for U.S. end-users was $44/pound-$U_3O_8$ in 2015 or 21% below the 2011 peak. 2017 ERI Report, 71. ERI expected additional decline by the end of 2016, although floor prices in many market-related contracts are preventing end-users from reaping the full benefit of the 2016 spot market price decline and providing suppliers with a higher minimum price than they might otherwise receive.

To estimate the realized prices for U.S. producers, which varies from company to company, ERI gathered information from public filings representing approximately 90% of U.S. production. 2017 ERI Report, 72. ERI provides Figure 4.23 (2017 ERI Report, 73) showing the change in realized uranium prices over time for several U.S. producers. It is apparent that some mining companies have chosen to sell on a spot market price basis, while others have hedged their exposure to spot market prices by locking in prices using a base price escalated approach for a portion of their portfolio. ERI estimates that the share of U.S. production that comes from companies that are effectively ''unhedged'' (with no long-term contracts at higher prices), has declined from 25% in 2012 to just 3% in 2015 and 2017. 2017 ERI Report, 73.

EIA reports several figures that are relevant to the prices realized by current production facility operators. For 2015, EIA reported the weighted average price of uranium purchased by U.S. reactor operators from all sources was $44.13 per pound U_3O_8. EIA, 2015 Uranium Marketing Annual, 5.[12] Uranium purchased directly from U.S. producers were purchased at $52.35 per pound U_3O_8, however, these purchases were only 1.5 million pounds U_3O_8 equivalent of a total of 56.5 million pounds U_3O_8 equivalent purchased in 2015. EIA, 2015 Uranium Marketing Annual, 3.

During 2015, 21% of the uranium was purchased under spot contracts at a weighted-average price of $36.80 per pound. The remaining 79% was purchased under long-term contracts at a weighted-average price of $46.04 per pound. Spot contracts are contracts with a one-time uranium delivery (usually) for the entire contract and the delivery is to occur within one year of contract execution (signed date). Long-term contracts are contracts with one or more uranium deliveries to occur after a year following the contract execution. EIA reports that 54 new purchase contracts (long-term and spot) were signed in 2015 at a weighted average price of $37.97. EIA, 2015 Uranium Marketing Annual, 1.

2. Production at Existing Facilities

ERI reports that in 2015, U.S. production declined 34% to 3.3 million pounds and that U.S. Production in 2016 was expected to decline an additional 10% to below 3.0 million pounds. 2017 ERI Report, 68. Production peaked in 2014, with a number of new starts that had been spurred by the price run-up in 2006 and 2007. A number of these facilities have limited production in response to the decline in prices.

In addition to the information described above, DOE is considering information from EIA reports. EIA reports on production in the domestic uranium industry on a quarterly and annual basis. According to EIA, U.S. primary production in 2015 stood at 3.34 million pounds U_3O_8. EIA's preliminary figures for 2016 indicates that U.S. production of uranium concentrates declined 13% from 2015 production to 2.92 million pounds U_3O_8.[13] This is consistent with ERI's forecast. U.S. uranium was produced at seven U.S. uranium facilities in Nebraska, Wyoming and Utah.

Using a three-year average to smooth out year-to-year differences, EIA data shows that average production costs remained fairly constant from 2009–2012 at about $40 per pound. The EIA average production costs have steadily declined since 2012, however, as U.S. producers cut costs in response to lower market prices including curtailed operations at higher cost mines, resulting in a three-year average production cost of $31/pound in 2015. 2017 ERI Report, 76. By comparison, the spot price of uranium averaged less than $26 per pound U_3O_8 in 2015. Total expenditures for U.S. uranium production was an average of $35.44 per pound when spread across uranium production of 3.34 million pounds U_3O_8. EIA, 2015 Uranium Production Report, 3, 10 (2016).

3. Employment Levels in the Industry

DOE has also considered information contained from EIA reports relating to employment in the domestic uranium production industry. EIA's 2015 Uranium Production Report states that employment stood at 625 person-years in 2015, a decrease of 21% from the 2014 total, and the lowest level since 2004. EIA, 2015 Uranium Production Report, 2 (2016). While employment in mining grew slightly, from 246 to 251 person-years, employment in exploration fell 32.6% from 86 person-years in 2014 to 58 person-years in 2015. EIA, 2015 Uranium Production Report, 9 (2016).

In its analysis, ERI found that EIA's employment figures correlated to changes in spot and term prices. 2017 ERI Report, 65. Having estimated that the total price effect of DOE inventory releases averaged $2.1/pound in 2012–2015, ERI's correlations indicate the DOE price effect lowered employment by an average of 30 person-years in 2012–2015 using the cumulative methodology.[14] 2017 ERI Report, 66. ERI estimates that employment would be lowered by 40 person-years in 2017 through 2026 using the cumulative methodology for the Base Scenario in 2017 through 2026. ERI notes that the cumulative effect of past DOE releases is already in place. 2017 ERI Report, 66. If DOE were to halt future EM releases (as in Scenario 1), then employment would be lowered by an average of 31 person-years or 4.7% over the ten-year period 2017 to 2026.

Though no commenter provided company-specific numbers, several referred to decreases in employment in recent years caused by decreases in uranium prices. E.g., Comment of Kingsville Area Industrial Development Foundation, at 1.

[12] Available at *http://www.eia.gov/uranium/marketing/pdf/2015umar.pdf.*

[13] Available at *http://www.eia.gov/uranium/production/quarterly/pdf/qupd.pdf.*

[14] The correlation is based on average price in the current and preceding year.

4. Changes in Capital Improvement Plans and Development of Future Facilities

ERI reports that five new production centers began operation since 2009. ERI explains that U.S. producers that have recently begun production have done so using fixed price long-term contracts, signed when long term prices were in the $55–70/pound U_3O_8, to support the start-up of their operations. 2017 ERI Report, 67. However, ERI explains that two of the new operations (Willow Creek and Palangana) have ceased development of new wellfields and two companies, Ur-Energy and Uranerz, have announced they would limit production expansion at new ISL facilities. 2017 ERI Report, 68. As a result of falling prices, in April 2016, Cameco announced that it was deferring well-field development at the company's Wyoming and Nebraska operations and cutting 85 jobs at these sites. Comment of Cameco, at 1, 9–16. Fluor BWXT Portsmouth (FBP) opines that U.S. production has fallen not ''due to DOE transfers, but due to the decisions made by producers to expand their lower-cost assets in Canada and Kazakhstan.'' Comment of FBP, at 13.

EIA reports that U.S. uranium production expenditures were $119 million in 2015, down by 14% from the 2014 level. EIA reports that uranium exploration expenditures were $5 million and decreased 56% from the 2014 level. EIA, 2015 Domestic Uranium Production Report, 2 (2016). ERI looked at the average production cost plus development drilling costs, to show that ongoing costs have declined from $49/pound in 2012 to $37/pound in 2015. Production plus development costs for U.S. facilities are expected by ERI to average about $35/pound in 2016. 2017 ERI Report, 76. ERI noted that exploration employment was correlated to spot price. 2017 ERI Report, 65. The lower expenditures for exploration in 2015 are consistent with the lower spot prices observed in that year.

Market capitalization is representative of a company's ability to raise funds needed to move a project through licensing, which can take many years, as well as through initial project development. ERI observed that the market capitalization of the smaller mining companies is more sensitive to changes in the spot market price compared to the larger companies. 2017 ERI Report, 70.

5. Long-Term Viability and Health of the Industry

ERI also presents its future expectations regarding demand for uranium. ERI's most recent Reference Nuclear Power Growth forecasts project global requirements to grow to approximately 190 million pounds annually by 2025. ERI attributes this increase in global requirements to an expansion of nuclear generation in China, India and South Korea, as well as new nuclear power entrants. While global demand for uranium is expected to increase, projected U.S. requirements will remain generally steady. 2017 ERI report, 18–19.

There are a number of important market factors that have influenced the relationship between supply and demand (hence price) since DOE inventory transfers began. These other factors include: demand losses due to the Japanese reactor shutdowns following the Fukushima Daiichi accident, demand losses due to changes in German energy policy, increased uranium production in Kazakhstan, increased secondary supply created using excess enrichment capacity (both underfeeding and upgrade of Russian enrichment tails), the planned ramp-up of Russian uranium under the Suspension Agreement, and the end of the U.S. Russian HEU Agreement in 2013. Not all of these factors affects each market. The effect of DOE inventory can be considered in the broader context of other market factors. ERI notes that DOE inventory was equivalent to about 6% of all the uranium market factors (including DOE) in 2012, rising to 9% in 2013–2014 before declining back to 7% in 2016. ERI predicts that the total of all the non-DOE uranium market factors is expected to remain fairly constant over the next decade as the slow increase in Japanese reactor restarts is offset by additional retirements in Germany. The Base Scenario DOE share remains in the 7%–8% range with the exception of 2020 and 2021 when it drops to 5% and 1%, respectively. If Scenario 1 DOE inventory is assumed, the DOE share declines to just 1% over the next decade. Scenario 2 averages 6% while Scenario 3 averages 8% in 2017–2026. 2017 ERI Report 100–101.

The TradeTech Report in the UPA comments cites many of the same market factors which ERI has accounted for, including persistent oversupply in the uranium market and reduced demand as a result of premature plant closures, as well as the DOE supplied uranium.

Several commenters in response to the July 2016 RFI predict a recovery in either spot or term uranium prices. Cameco, in its comment, states that while ''the long-term future of the uranium industry is strong, the market remains oversupplied due in part to the slow pace at which Japanese reactors have come back on line since the Fukushima accident and the closure of a number of U.S. reactors.'' Comment of Cameco, at 1. ConverDyn stated that uncertainty related to DOE uranium transfers adds to the difficult conditions currently facing the industry. Comment of ConverDyn, Enclosure 1, at 2. Energy Fuels Resources (Energy Fuels), in its comment, hypothesizes that the value of domestic uranium mines and projects has diminished due to declining uranium prices since 2011 and an oversupplied market. Comment of Energy Fuels, at 2. Energy Fuels notes that ''persistent oversupply from price insensitive sources and limited uncommitted demand.'' Comment of Energy Fuels, at 3. This view is reiterated in comments by the New Mexico Mining Association, noting that ''DOE's material effectively consumes any available uncommitted demand available to (potential New Mexico) producers.'' Comment of New Mexico Mining Association, at 1.

Energy Fuels also remarks, ''[a]s more reactors go offline and higher priced long-term pre-Fukushima legacy contracts expire, along with DOE material continuing to enter the market, conditions will continue to deteriorate for the production industry.'' Comment of Energy Fuels, at 5. Additional commenters shared this view. FBP commented that U.S. producers are ''far less competitive than available non-U.S. supply'' and that non-U.S. producers are better poised to meet any increase in demand because they can provide material at production costs that are below those of U.S. producers. Comment of FBP, at 5.

The Wyoming Mining Association suggests that the Department consider drilling as a ''harbinger metric for the uranium recover industry's maintenance and growth.'' Comment of Wyoming Mining Association, at 2. EIA reports that the number of holes drilled for exploration and development in the U.S. in 2015 was 1,218, down from 11,082 in 2012 and 5,244 in 2013, declines of 86% and 71%, respectively. Similarly, EIA reports 878 thousand feet drilled in 2015, down from 7,156 thousand feet in 2012 and 3, 845 thousand feet drilled in 2013, declines of 88% and 77%, respectively. EIA, 2015 Domestic Uranium Production Report (2016), at 3.

A number of commenters have pointed out that excess inventory needs to be absorbed before a market recovery can occur. Commenters point to EIA data showing an increase in U.S. utility inventory. Energy Fuels and the

Uranium Producers of America state that, ''the excess supply is absorbed primarily by the trading community that then finances the material for forward sales. As a result, this delays the prospects for a price recovery by ''stealing'' future uncommitted demand that would otherwise be available in upcoming years.'' Comment of Energy Fuels, at 5; Comment of UPA, at 7.

Regarding supply, FBP notes the increase in global production since 2007, despite falling prices and reduced reactor demand. Comment of FBP, at 5. ''The failure of primary supply to reduce production to match needs is encouraged by long-term contracts at higher than current spot market prices and the significant supply controlled by Sovereign governments.'' Citing the NAC International Fuel–Trac data base, FBP notes that ''it is estimated that around 60% of the 2016 production was controlled by Governments,'' and suggests that, ''[d]ue to the large excess worldwide production increases, neither spot market prices, nor U.S. production competitiveness are expected to improve appreciably in the near term.'' Comment of FBP, at 8. FBP also suggests that exchange rates have affected competitiveness resulting in lower effective production costs for non-U.S. suppliers. Comment of FBP, at 10.

In the TradeTech report submitted by the Uranium Producers of America, TradeTech opines, ''[i]f DOE were to completely cease material transfers, then producers would see improvement in the market,'' but does not provide additional analysis to support this assertion. Comment of UPA, TradeTech Report, at 8. As they concluded in the 2015 report, ERI states in the 2017 ERI Report, ''[i]t does not appear that removing the DOE inventory from the market and adding back the $5 per pound cumulative price effect attributed to the DOE inventory material . . . would necessarily increase current prices enough to change the situation regarding the viability of new production centers in the U.S.'' 2017 ERI Report, 77.

Finally, DOE recognizes that predictability of transfers over time is important for long-term planning by the domestic uranium industry. Commenters have noted the uncertainty in the market regarding the quantity and price at which DOE will transfer uranium, which they believe is attributed to the Secretarial Determination process. (*e.g.,* Comment of UPA, at 1).

B. Uranium Conversion Industry

ERI projects that U.S. requirements for conversion services will remain essentially unchanged from 2016 through 2035, averaging 17 million kgU per year. 2017 ERI Report, 13. ERI notes that globally, its forecasted requirements for 2017 and 2018 have declined by 21% since ERI's 2011 forecast. 2017 ERI Report, 78.

1. Prices

In its analysis, ERI estimates the effect of DOE transfers on the market prices for conversion services. To estimate this effect, ERI employed a market clearing price model very similar to what is described above for the uranium market. As with uranium concentrates, ERI constructed individual supply and demand curves for conversion services and estimated the clearing price with and without DOE transfers. A summary of ERI's estimates of the effect of DOE transfers on the conversion price appears in Table 3. As with uranium concentrates, this is not a prediction that prices will drop by the specified amount once DOE begins transfers.

TABLE 3—ERI'S ESTIMATE OF CONVERSION CLEARING PRICE CHANGES DUE TO DOE INVENTORY IN IN $ PER kgU AS UF_6

[Cumulative market clearing approach]

2017 ERI Report estimated clearing price effect ($ per kgU as UF_6)			
	2017	2018	2019
Base Scenario	$1.1	$1.1	$2.3
Scenario 1	0.90	1.1	1.6
Scenario 2	1.1	1.1	2.1
Scenario 3	1.1	1.2	2.3

ERI does not provide a specific estimate of the change in ConverDyn's realized price due to DOE transfers (ConverDyn being the only domestic uranium conversion facility). However, ERI does note that ConverDyn's realized price is believed to have increased over the past decade, although ERI says unit costs have increased as well due to reductions in production volume. ERI bases its sales revenue assumptions on a sale price of $14 per kgU. This estimate appears to be based predominately on claims by the company that it is operating at a loss. 2017 ERI Report, 88; 2015 ERI Report, 70.[15]

No commenter provides specific information about the current realized prices achieved in the conversion industry, and no commenter directly estimates the effect of DOE's transfers on realized prices. DOE understands that the conversion market generally relies on mid- and long-term contracts. UxC Conversion Market Outlook—December 2016, 30–31.

2. Production at Existing Facilities

There is only one existing conversion facility in the United States, the Metropolis Works facility (MTW) in Metropolis, Illinois, operated by Honeywell International. ConverDyn is the exclusive marketing agent for conversion services from this facility. Comment of ConverDyn, at 1; 2015 ERI Report, 64. The nominal capacity of the Metropolis Works facility is 15 million kgU as UF_6. However, the facility generally operates below that level. 2015 ERI Report, 65. Based on statements from ConverDyn, ERI estimates that production at this facility was approximately 11 million kgU as UF_6 per year prior to the loss of sales associated with Fukushima. Based on information presented by ConverDyn in support of litigation against DOE and in ERI's proprietary analysis, ERI is able to estimate that ConverDyn's production volume in 2015 was approximately 10 million kgU. 2017 ERI Report, 81.

In estimating the effect of DOE transfers on ConverDyn's sales volume, ERI assumes that 50% of the material

[15] ERI developed this assumption based on its estimate of ConverDyn's production costs of $15 per kgU to produce 10.6 million kgU. Since ConverDyn claims to be operating at a loss, ERI assumes that its realized price must be lower. 2017 ERI Report, 90.

EM transfers in exchange for cleanup services and 100% of all other DOE material enters the U.S. market. 2017 ERI Report, 84. Based on statements from ConverDyn, ERI assumes that ConverDyn's current share of the U.S. market for conversion services is 25% and that its share of the international market is 24%. 2017 ERI Report, 86. ERI calculates estimates of volumes lost to DOE using estimates of production (10 kgU) and market share. ERI also assumes that 80% of ConverDyn's production costs are fixed, while 20% are variable.

A summary of ERI's estimates of the effect of DOE transfers on ConverDyn's sales volume appears in Table 4. Applying ConverDyn's U.S. market share of 25% and the remaining world market share of 24% to the volume of DOE inventory expected to be introduced into the market in 2018, results in a volume effect of 0.4 million kgU in the U.S. market and 0.2 million kgU effect in the remaining world market for a total of 0.6 million kgU, under the Base Scenario, for an increase in production costs of 5%.

In Scenario 1, in which UF_6 associated with prior releases of DUF_6 to ENW enter the market, the introduction of DOE inventory results in a decreased volume of 0.6 million kgU and increased production costs of 1%. The introduction of DOE inventory into the conversion market results in a decreased volume of 0.5 million kgU and increased production costs of 4% in Scenario 2 and a decreased volume of 0.7 million kgU and increased production costs of 5% in Scenario 3. 2017 ERI Report, 85–89. As with ERI's price estimates discussed above, these estimates do not suggest that were DOE to transfer uranium in accordance with the Base Scenario, ConverDyn would lose the predicted volume of sales. DOE has been transferring at or above the rate of Scenario 1 for nearly three years.

TABLE 4—ERI'S ESTIMATE OF IMPACT OF DOE TRANSFERS ON CONVERDYN'S SALES VOLUME AND ESTIMATED PRODUCTION COST INCREASE

	Estimated change in ConverDyn volume (million kgU)	Production cost increase (percent change)
Base Scenario	0.6	5.0
Scenario 1	0.2	1.0
Scenario 2	0.5	4
Scenario 3	0.7	5

ERI assumes that ConverDyn's production cost would be $15 per kgU if DOE material was not being introduced into the market. As noted earlier, ERI assumes that if 80% of Metropolis Works' costs are fixed, DOE transfers would affect 20% of total production costs. Specifically, ERI estimates that DOE transfers under consideration at the level under the Base Scenario reduce sales volume by 0.6 kgU and increase production costs by $0.7 per kgU as UF_6, about 5% higher than without DOE transfers. Transfers at the level under Scenario 2 would result in increased production costs of $0.6/kgU or a 4% increase. Under Scenario 3, a reduction in sales volume would result in increased production costs of $0.8/kgU or a 5% increase. 2017 ERI Report, 89.

ConverDyn's comment in response to the RFI includes an enclosure disclosing the domestic cost of production for conversion services. This document was submitted with a request that it be treated as containing proprietary information. DOE may consider this document in its deliberations.

In addition to the above, ConverDyn's comment states that it does not foresee any changes to the domestic conversion market that would significantly lessen the effects of DOE's transfers on the domestic conversion industry. Comment of ConverDyn, at 5.

3. Employment Levels in the Industry

ERI assumes, as it did in 2015, that Metropolis Works staffing remains at 270 employees, with an annual production rate of 10 million kgU. In the 2015 Report, ERI noted that Metropolis Works restarted after an extended shutdown in summer 2013 with approximately 270 employees, which was a decrease from the previous employment of 334 people. 2015 ERI Report, 72–73; 2014 ERI Report, 71. Information on the Honeywell/Metropolis Works Web site [16] indicates that the plant employs 250 full-time employees. In January 2017, Honeywell announced a workforce reduction: ''Due to the significant challenges of the nuclear industry globally and the oversupply of uranium hexafluoride (UF_6), Honeywell plans to reduce the production capacity of the Metropolis plant to better align with the demands of nuclear fuel customers. Because of this, the company intends to reduce its full-time workforce by 22 positions, as well as a portion of the plant's contractor team. We are taking this action to better position the plant moving forward.'' [17] ERI makes estimates regarding the impact of DOE uranium transfers on employment using the assumption that staffing is proportional to production value but noting the limitations of such estimates. It is clear that other factors, in addition to production volumes will affect employment levels.

4. Changes in Capital Improvement Plans and Development of Future Facilities

Neither ERI nor any of the commenters provide an estimate of the effect of DOE transfers on new facility development or capital improvement plans. However, there are limited development projects currently planned or underway outside the United States. ERI notes that while AREVA's Comurhex II can be expanded further, AREVA does not plan any additional expansion unless warranted by market conditions. ERI also notes that expansion of Chinese conversion capacity is expected to meet indigenous requirements. Finally ERI notes that Rosatom's Siberian Chemical Combine center is expected to add new capacity to come on line in 2019. 2017 ERI Report, 13. DOE is not aware of any such plans in the United States.

ConverDyn has not stated in its Comment in response to the RFI whether they have any intentions to make updates and capital improvements to the Metropolis facility. The Honeywell/Metropolis Web site notes that Honeywell has spent over $177 million in capital improvements over the last 10 years, including $50 million for safety upgrades required by the U.S. Nuclear Regulatory Commission. In a message from the Metropolis Works Plant manager,[18] the company notes that it intends to invest $10 million per year on projects that directly support health, safety and the environment.

5. Long-Term Viability and Health of the Industry

ERI's most recent Reference Nuclear Power Growth forecasts project global requirements lower than those used in the 2015 ERI Report. ERI forecasts that global secondary supply and supply from primary converters will continue to exceed global demand until at least 2035. 2017 ERI Report, 13. ERI observes that the high levels of secondary supply have resulted in lower spot prices, which is reflected in lower contracted volumes under flexibilities in higher-

[16] *http://www.honeywell-metropolisworks.com/* (accessed February 7, 2017).

[17] *http://www.honeywell-metropolisworks.com/* (accessed February 7, 2017).

[18] *http://www.honeywell-metropolisworks.com/message-from-the-plant-manager/* (accessed February 22, 2017).

priced contracts. Further, ERI notes that in 2009 through 2012, contracting represented 85% of the world's requirements, while contracting in 2012 through 2016 represented only 35% of the world's requirements in that period. Thus, convertors have been unable to maintain contract backlog with new contracts less than annual deliveries. 2017 ERI Report, 79–80.

No other commenter provided specific projections about future conversion requirements, demand, or prices.

Finally, as with uranium concentrates, and acknowledging commenters' suggestions, DOE recognizes that the predictability of transfers from its excess uranium inventory over time is important to the long-term viability and health of the uranium conversion industry.

C. Enrichment Industry

The uranium enrichment market is also characterized by an oversupply situation. ERI notes that ''total expected world enrichment supply significantly exceeds projected requirements for enrichment by a significant margin over the long-term.'' 2017 ERI Report, 17. Global enrichment requirements are expected to grow from the current level of 45.4 million separative work units (SWU—a measure of enrichment services) per year to 64 million SWU per year by 2026, but U.S. requirements are expected to remain essentially flat at 15 million SWU per year. 2017 ERI Report, 14.

1. Prices

In its analysis, ERI also estimated the effect of DOE transfers on the market prices for enrichment services. To estimate this effect, ERI employed a market clearing price model similar to what is described above for the uranium market. As with uranium concentrates and conversion, ERI constructed individual supply and demand curves for enrichment services and estimated the clearing price with and without DOE transfers. 2017 ERI Report, 44.

With NNSA's transfers of LEU assumed to be constant across the four scenarios, the average estimated price effect is the same in each scenario. Using the cumulative market clearing methodology, the average estimated price effect of DOE transfers is $8.2 per SWU over the period 2017 through 2026 but is higher in the near-term as noted below. The price effects attributed to DOE inventory are already built into the current market prices. 2017 ERI Report, 54.

TABLE 5—ERI'S ESTIMATE OF ENRICHMENT CLEARING PRICE CHANGES DUE TO DOE INVENTORY IN $ PER SWU

[Cumulative market clearing approach]

2017 ERI Report estimated clearing price effect (in $ per SWU)			
	2017	2018	2019
Base Scenario	$9.7	$9.7	$9.7
Scenario 1	8.8	8.8	8.8
Scenario 2	7.3	7.3	7.3
Scenario 3	8.8	8.8	8.8

There is an important relationship between the excess enrichment capacity and the uranium and conversion markets. Due to technological limitations, it is currently difficult to match changes in production volumes to changes in requirements. Excess enrichment capacity is utilized to re-enrich tails or is operated in a manner that uses additional separative work capacity in lieu of uranium feed to produce enriched uranium of a given enrichment level or assay. This type of operation is called ''underfeeding.'' Additional UF_6, which can be sold on the market, results from both tails re-enrichment and underfeeding. ERI estimates that over 50% of the secondary supply in the uranium market is the result of excess enrichment capacity (re-enrichment of tails by Russia (26%); Russian underfeeding (13%); and Western enrichment underfeeding (18%)), 2017 ERI Report, 10. Thus, to the extent that URENCO utilizes or resells the natural uranium hexafluoride that results from underfeeding, the market prices for uranium and conversion could be relevant to its business decisions.

No commenter provides information about the realized price achieved by URENCO or the effect of DOE transfers on that price. ERI estimates that more than 95% of enrichment requirements are covered under long-term contracts. 2015 ERI Report, 74.

2. Production at Existing Facilities

There is only one currently operating enrichment facility in the United States, the URENCO USA (UUSA) gas centrifuge facility in New Mexico. ERI reports that URENCO USA capacity increased to 4.6 million SWU by the end of 2015, with plans to slowly increase to 5.7 million SWU by 2022. ERI also reports that, in 2016, URENCO reduced its production capacity at the Capenhurst site when it mothballed two production halls (out of 15). URENCO has also made small capacity reductions by not replacing aging centrifuges at its European sites when centrifuges go out of service. 2017 ERI Report, 16.

3. Employment Levels in the Industry

ERI does not provide an estimate of the change in employment due to DOE transfers in the enrichment industry. No commenter references changes in employment in the enrichment industry.

4. Changes in Capital Improvement Plans and Development of Future Facilities

ERI states that major supply expansion at several sites has now been completed. AREVA increased Georges Besse II (GB II) capacity to 7.4 million SWU. As noted above, ERI reports that URENCO USA capacity increased to 4.6 million SWU by the end of 2015, with plans to slowly increase to 5.7 million SWU by 2022. 2017 ERI Report, 16.

Another planned enrichment facility was announced by Global Laser Enrichment, a venture of GE-Hitachi and Cameco. The proposed facility will use laser enrichment technology developed by Silex Systems to enrich depleted uranium tails to the level of natural uranium, at a proposed location near Paducah, KY.[19]

The U.S. Nuclear Regulatory Commission granted two additional licenses for centrifuge enrichment plants that are not currently being developed. Centrus holds a license for the American Centrifuge Plant in

[19] *https://energy.gov/pppo/articles/energy-department-announces-agreement-sell-depleted-uranium-be-enriched-civil-nuclear* (Nov. 11, 2016) (accessed February 22, 2017).

Piketon, Ohio, while AREVA Enrichment Services holds a license for the Eagle Rock Enrichment Facility, planned for Bonneville County, Idaho. NRC also issued a license to GE-Hitachi for a laser enrichment facility in Wilmington, North Carolina. Development of that facility is also on-hold and GE-Hitachi has announced its plans to sell its shares and exit that venture.

5. Long-Term Viability and Health of the Industry

ERI's most recent Reference Nuclear Power Growth forecasts project global requirements to grow to approximately 52 million SWU per year between 2018 and 2020, 58 million SWU per year between 2021 and 2025, 64 million SWU per year between 2026 and 2030, and 71 million SWU per year between 2031 and 2035. U.S. requirements are projected to be essentially flat, averaging almost 15 million SWU per year between 2016 and 2035. 2017 ERI Report, 16. ERI presents a graph comparing global requirements, demand, and supply from 2015–2035. That graph shows that global supply will continue to significantly exceed global demand over the long term. 2017 ERI Report, 17. URENCO's internal estimates suggest that global SWU inventories represent nearly two-year's worth of 2016 global SWU requirements. Comment of URENCO, at 3. URENCO also notes very limited uncommitted demand in the next few years and notes that DOE inventories compete for these very limited pools of demand. Further, URENCO opines that the combination of low demand and excess supply is placing downward pressure on prices for uranium enrichment services, pointing out that prices have fallen considerably from the $79/90 spot/term prices at the time of the May 2015 Secretarial Determination. URENCO's 2015 Annual Results state that ''Urenco anticipates continued short to medium term pricing pressures until worldwide fuel inventories are reduced which may impact future profit margins.'' The 2015 Annual Results also note that the company is confident that global nuclear industry will continue to grow.[20] Finally, these financial results note that URENCO is benefitting by the strength of the U.S. dollar in that two-thirds of its revenue is in U.S. dollars.

Finally, as with uranium concentrates and conversion services, DOE recognizes that the predictability of transfers from its excess uranium inventory over time is important to the long-term viability and health of the uranium enrichment industries.

IV. Request for Comments

Using the information discussed here, DOE is beginning the decision-making process regarding a potential new Secretarial Determination, pursuant to Section 3112(d) of the USEC Privatization Act, for potential transfers of uranium for cleanup services at the Portsmouth Gaseous Diffusion Plant. DOE requests comments for consideration in the Secretarial Determination.

To enable the Secretary to make a determination as expeditiously as possible, DOE is setting a deadline of April 10, 2017, for all comments to be received. DOE invites all interested parties to submit, in writing, comments and information for consideration. DOE intends to make all comments received publicly available. Any information that may be confidential and exempt by law from public disclosure should be submitted as described below.

V. Confidential Business Information

Pursuant to 10 CFR 1004.11, any person submitting information he or she believes to be confidential and exempt by law from public disclosure should submit via email, postal mail, or hand delivery/courier two well-marked copies: One copy of the document marked ''confidential'' including all the information believed to be confidential, and one copy of the document marked ''non-confidential'' with the information believed to be confidential deleted. Submit these documents via email or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination. Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person which would result from public disclosure; (6) when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

Issued in Washington, DC, on March 6, 2017.

Raymond Furstenau,

Acting Assistant Secretary for Nuclear Energy, Office of Nuclear Energy.

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[20] *http://www.urenco.com/_/uploads/results-and-presentations/160301_URENCO_end_of_year_results_presentation_FINALpdf* (Accessed February 7, 2017).

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following exempt wholesale generator filings:

Docket Numbers: EG17–71–000.
Applicants: Playa Solar 1, LLC.
Description: Notice of Self-Certification of Exempt Wholesale Status of Playa Solar 1, LLC.
Filed Date: 3/2/17.
Accession Number: 20170302–5187.
Comments Due: 5 p.m. ET 3/23/17.

Docket Numbers: EG17–72–000.
Applicants: Playa Solar 2, LLC.
Description: Notice of Self-Certification of Exempt Wholesale Generator Status of Playa Solar 2, LLC.
Filed Date: 3/2/17.
Accession Number: 20170302–5189.
Comments Due: 5 p.m. ET 3/23/17.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER16–505–002.
Applicants: South Central MCN LLC.
Description: Compliance filing: Amended Compliance Filing to be effective 4/1/2016.
Filed Date: 3/2/17.
Accession Number: 20170302–5192.
Comments Due: 5 p.m. ET 3/23/17.

Docket Numbers: ER16–1023–003.
Applicants: ISO New England Inc., Eversource Energy Service Company.
Description: Compliance filing: Merger Cost Recovery Settlement Compliance Filing; Docket ER16–1023–000 to be effective 6/1/2016.
Filed Date: 3/1/17.
Accession Number: 20170301–5310.
Comments Due: 5 p.m. ET 3/22/17.

Docket Numbers: ER17–349–001.
Applicants: PJM Interconnection, L.L.C.
Description: Compliance filing: Compliance Filing per order issued January 12, 2017 in Docket No. ER17–349–000 to be effective N/A.
Filed Date: 3/2/17.
Accession Number: 20170302–5181.
Comments Due: 5 p.m. ET 3/23/17.

Docket Numbers: ER17–1092–000.
Applicants: Southwest Power Pool, Inc.